

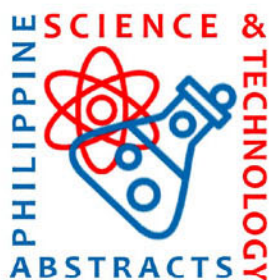
# **PHILIPPINE** **SCIENCE & TECHNOLOGY** **ABSTRACTS**



**SCIENCE AND TECHNOLOGY INFORMATION INSTITUTE**  
**INFORMATION RESOURCES AND ANALYSIS DIVISION**

Department of Science and Technology  
Bicutan, Taguig City, Metro Manila  
Philippines

**JUNE 2017**



## **PHILIPPINE SCIENCE AND TECHNOLOGY ABSTRACTS**

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# **PHILIPPINE SCIENCE AND TECHNOLOGY ABSTRACTS**

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Information Resources and Analysis Division  
**SCIENCE AND TECHNOLOGY INFORMATION INSTITUTE**  
Bicutan, Taguig, Metro Manila  
Philippines

**Carcass and sensory characteristics of different breeds of beef cattle raised in a ranching operation**

*Migrino, Ana Marie Christina V. , Oliveros, Maria Cynthia R. , Geromo, Rodrigo B. , Salces, Agapita J. , Doydora, Marianito M., Elumba, Joel*

Twelve junior bulls with age ranging from 2 to 2.5 years raised under extensive grazing system with no concentrate supplementation from four breeds (Bali, Brahman, Philippine Native and Simbrah) were slaughtered from September 2012 to July 2013. This study was conducted to evaluate and characterize breed differences in carcass characteristics and sensory quality of beef. The experiment was conducted with three replications per treatment using a completely randomized design. Standard slaughter procedures were followed. The beef forequarters and hindquarters were cut into standard wholesale cuts following the modified USDA procedure. Ten (10) experienced panelists participated during the sensory evaluation of broiled beef samples. Average slaughter weight of the four cattle breeds ranged from 208.9 to 262.0 kg. There were no significant differences in the dressing percentage, lean-fat-bone yield, loin-eye area and percent slaughter by-product of the four cattle breeds. Simbrah had longer ( $P<0.05$ ) carcass whereas the shortest was obtained in the Philippine Native. Wholesale cut yield based on live weight did not differ significantly among breeds except for the chuck and the brisket. For the sensory quality, flavor, aroma and juiciness scores of beef from the four different breeds did not differ significantly. Tenderness score and general acceptability was higher in beef from Philippine native ( $P<0.05$ ) than the other breeds. In conclusion, Philippine Native cattle grown under extensive grazing system until 2 to 2.5 years of age compares well with Bali, Brahman and Simbrah in terms of carcass yield and wholesale cut yield. Beef from Philippine native has a higher degree of tenderness and general acceptability based on sensory evaluation. **(Author's abstract)**

**Keywords:** *Agriculture, Beef cattle breeds, Carcass, Philippine native, Sensory characteristics*

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2014,  
(Filipiniana Analytics)  
NP

**Chemical, functional and sensory qualities of mozzarella cheese made from combinations of buffalo's milk and reconstituted skim milk**

*Lapitan, Rosalina M. , Magpantay, Veneranda A. , Sarmago, Ione G. , Oliveros, Maria Cynthia R. , Lamano, Ronald J*

The effects of partial substitution of whole buffalo's milk with reconstituted skim milk on the chemical, functional and sensory qualities, consumer acceptability, yield and production cost of mozzarella cheese were assessed. Mozzarella cheese from different combinations of buffalo's milk and 12% reconstituted skim milk (RSM) were prepared as follows: 100% buffalo's milk (T1), 80% buffalo's milk and 20% RSM (T2), 70% buffalo's milk and 30% RSM (T3) and 60% buffalo's milk and 40% RSM (T4). The mozzarella cheese produced did not differ significantly among treatments in moisture, protein, salt and calorie contents. Substitution of buffalo's milk with RSM did not influence the meltability of mozzarella but significantly decreased its stretchability. Sensory ratings on appearance, aroma, flavor, after-taste, stretchability and general acceptability did not differ among the different groups. Consumer acceptability ratings for T2, T3 and T4 were consistently higher than T1. Product yields of T2, T3 and T4 were significantly lower than that of T1. Production cost decreased with increased proportion of RSM but

the cost of the finished cheese increased. Results indicate that any of the buffalo's milk and 12% RSM combinations can be used in the production of marketable mozzarella cheese. **(Author's abstract)**

**Keywords:** *Agriculture, Buffalos milk, Mozzarella cheese, Sensory quality, Skim milk*

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Philippine Journal of Veterinary and Animal Sciences, Volume No. 39 Issue No. 2, 229-236  
2013,  
(Filipiniana Analytics)  
NP

0003

### **Common characteristics of progressive dairy buffalo farmers in Nueva Ecija, Philippines** *Valiente, Erwin M. , Honorio, Moses Gil F. , Palacpac, Eric P., Jacang, Rovelyn*

The study was conducted to document and analyze the common traits of progressive dairy buffalo farmers (PDBFs) in Nueva Ecija in terms of socio demographics, technology adoption practices, personal entrepreneurial competency (PEC), personal communication network, income from buffalo dairying and problems encountered in their dairy enterprise. Face-to-face individual interviews with 47 PDBFs were made using semi-structured questionnaire and PEC score sheet. Results showed that majority of PDBFs were maintaining at least five female dairy buffaloes and were categorized as belonging to the "earlier adopter" group either as innovators, early adopters, or early majority. Most of the PDBFs also showed commonalities in terms of age, education and dairy husbandry practices. Depending on their level of operation, they have varying asset values but all have positive net incomes derived from dairy buffalo production. They are also "moderately competent" as entrepreneurs following the PEC rating. Using linear regression analysis, the "number of dairy cows" regressed positively while the "cost of inputs" regressed negatively with the "income from dairying". Common problems encountered by the PDBFs include frequent fluctuation in the price of raw milk, seasonal supply of fresh fodder, and inadequate technical competency. It is recommended that the PDBFs undergo refresher trainings to further hone their knowledge and skills and become communicators of technologies themselves to benefit other dairy buffalo farmers. **(Author's abstract)**

**Keywords:** *Agriculture, Dairy buffalo, Nueva Ecija, Progressive farmers, Technology adoption*

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2015,  
(Filipiniana Analytics)  
NP

0004

### **Correlation of circulating vitellogenin at sexual maturity with selected laying traits in Philippine mallard duck (*Anas platyrhynchos domesticus* L.)** *Capitan, Severino S. , Vega, Renato S.A. , Lambio, Angel L. , Monleon, Arno*

Vitellogenin (Vtg) is a large precursor molecule of the two major egg yolk phosphoproteins, namely; lipovitellin and phosvitin. All of the vitellogenic zinc is found in lipovitellin. Several reports had speculated into the probable relationships of Vtg with reproductive phenotype of Philippine Mallard duck (*Anas platyrhynchos domesticus* L.). Hence, it was hypothesized to use the Vtg profile as a nonlethal physiological index of reproductive performance in Philippine Mallard duck. Forty ducks, aged 16 weeks old, were randomly assigned into two treatment groups: 20 ducks fed with 30 ppm zinc-diet (zinc positive) and 20 ducks fed with no added zinc (zinc negative). All ducks were



kept individually in cages. The circulating Vtg at sexual maturity (155.11±10.83 days old) was determined from the blood sera. The sera were assayed for Vtg in duplicate using 96-well microplate and the optical density was read at 415 nm. Results show that the circulating Vtg in the blood sera of ducks at sexual maturity was 0.69±0.07 µg Zn/dl. This circulating Vtg was identified to have negatively very weak to weak linear correlation with the majority of the laying traits (11 out of 17) in Philippine mallard duck. **(Author's abstract)**

**Keywords:** *Agriculture, Laying traits, Philippine mallard duck, Sexual maturity, Vitellogenin*

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2013,  
(Filipiniana Analytics)  
NP

0005

### **Design and preliminary dynamical analysis of fish cages for rivers and mountain streams to withstand strong typhoons**

**Morales, Minerva I. Tribiana, Estrella T. Arcilla Jr., Ricardo V. Tumaque, Pedro Torio, Manuel CSTIFDP Research Team, Santelices, Myrna A. Vargas, Sonia R. Padilla, Vicente G. Villacorta, Christian V. Tubato, Marlon Salvador, Edmond Torio, Soni, Masagca, Ji**

Geography very often determines the livelihood opportunities for the local communities of the typhoon prone island province of Catanduanes (Luzon). Sustainability of the island's freshwater systems (FWS) have equally important opportunities with that of the marine waters for aquatic agricultural systems and the conservation of vanishing endemic fishes, mollusks and crustaceans (FMC). Providing livelihood for food, human and environmental security needs of the local people will require multi-pronged approaches that will include the infusion of technologies in inland aquaculture for cages to produce FMCs. This study presents the results of selecting suitable sites; the design of cages considering the unique river geomorphology and changing patterns of e-flows in the island due to extreme weather conditions; and dynamical analysis of these cage structures (floating and benthic) in selected rivers and mountain streams of the island to withstand strong water current and storm waters. Stress, loading, and stability of the cages in steady state as well as in medium and extreme water currents or waves were computed mathematically following Morrison motion equation; and considered also the anthropomorphy of a typical Catandunganon fisherfolk in relation to the dynamics of loading with the use of fluid and hydrodynamical perspectives. **(Author's abstract)**

**Keywords:** *Agriculture, Rivers, Cage design, Floating cages, Submerged cages, Endemic fishes, Catanduanes*

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CAS Journal of Research, Volume No. 6 Issue No. 2, 16-31  
2012,  
(Filipiniana Analytics)  
NP

0006

### **Development and standardization of soya squares** **Dolojan, Fredisminda M., Salvador, Isabel F. , Olog, Reynante**

Soybean (*Glycine max*), also called the soya bean in Europe, is a legume species native to East Asia, which includes the Philippines. It is known as an exceptional source of essential nutrients needed by the body. It can be

eaten either raw or processed. Fermented soya foods include soy sauce, fermented bean paste, natto, tempeh, among others. Traditional non-fermented food uses of soybeans include soy milk, from which tofu and tofu skin are made which are highly perishable in nature. In this study, non-fermented food with a longer shelf life was developed and introduced in order to unlock the market niche and to help local soy bean producers come up with better market for their produced.

Prior to product development, verification of recipes was done to check different formulations of butterscotch, cookies, and other baked products. The screenings of recipes were conducted to establish healthy ingredients and procedures. Finalization and evaluation of recipes were made based on the initial small research on recipes and ingredients. From the finalized recipe, proper cooking procedures were established and subjected to sensory evaluation and commercial sterility test. Moreover, consumer acceptability survey was conducted to the product and gained a like very much response.

Soya butterscotch became Soya Squares as brand name. Based on the results of the laboratory nutritional analysis, for every 100 grams, the following contents were found in the product: 6.088 g moisture content, 63.40 g carbohydrates, 466.0 calories food energy content, 180.6 calories from fat content, 7.95 g crude protein content, 20.07 g crude fat content, and 2.494 g ash content. **(Authors abstract)**

**Keywords:** *Agriculture, Soybean, Butterscotch, Product development, Standardization*

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QSU Research Journal, Volume No. 4 Issue No. 1, 57-67  
2015,  
(Filipiniana Analytics)  
NP

0007

### **Diatomaceous earth inhibited the *in vitro* migration of *Oesophagostomum dentatum* larvae** *Martin, Richard, Beltran, Ma. Asunc*

An alternative anthelmintic diatomaceous earth (DE) was evaluated for its ability to inhibit the migration of *Oesophagostomum dentatum* larvae using migration and inhibition assays *in vitro* in unsheathed and exsheathed third stage larvae. The experiments were tested in 24-well plates at room temperature with five replications per treatment using different DE concentrations of 0.1 mg/ml, 0.3 mg/ml and 1mg/ ml. About 120 larvae per well were deposited on a larval migration apparatus consisting of 20 µm nylon mesh filters and incubated in 2, 4, 16, 20 and 24 hr under different treatments and another 2 hr to allow the migration of active motile larvae. The percentage inhibition were statistically analyzed. The highest inhibition was 78.20%, observed when DE was given at a dose of 0.3 mg/ml after 24 hr (PĒ,0.001) for exsheathed larvae and 67.60% (PĒ,0.01) with unsheathed larvae under 1 mg/ml concentration of DE after 24 hr. DE was more effective in exsheathed larvae at 0.3 mg/ml after 20 hr with 61.60% inhibition (PĒ,0.01). With unsheathed larvae, DE had a significant effect at 1 mg/ml exposed within 24 hr with 67.60% inhibition (PĒ,0.01). The larval migration/inhibition assay presented in this study showed the inhibitory effects of DE on *O. dentatum*. **(Author's abstract)**

**Keywords:** *Agriculture, Anthelmintic, Diatomaceous earth, Larval migration assay, Oesophagostomum dentatum*

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2015,  
(Filipiniana Analytics)  
NP

## **Effect of augmented feeding with bypass amino acid and slow-release non-protein nitrogen supplement on milk peak, lactation persistency, milk quality and post-partum reproductive performance of Brazilian buffaloes**

*Vergarra, King Frel , Del Rosario, Mike V. , Aquino, Dan*

A total of 25 pregnant and primiparous Brazilian buffaloes were used in this study to determine the effects of augmented feeding with bypass amino acids (BPAA) and slow-release non-protein nitrogen (SRNPN) supplements on milk peak, lactation persistency, milk quality and post-partum reproductive performance. Individual cows were allotted to 5 dietary treatments using a randomized completed block design. The dietary treatments were without (control) or with augmented feeding (AF), AF supplemented with bypass amino acids (BPAA); AF supplemented with slow-release non-protein nitrogen (SRNPN), and AF supplemented with BPAA and SRNPN. There were 5 cows per treatment and each cow served as a replicate. The feed ration was composed of corn silage (67.3%), rice straw (9.5%) and dairy concentrate pellets (23.2%). The supplementary concentrates, BPAA, and SRNPN were given at 0.5 kg/kg of milk production, 100 g and 50 g/(hd-d), respectively. Augmented feeding alone or with supplementary SRNPN resulted in greater ( $P < 0.05$ ) milk peak compared with the other treatments. Dairy buffaloes with A Falone or with supplementary BPAA and SRNPN had the greatest ( $P < 0.05$ ) 305-d adjusted total milk yield among the treatments. No significant differences were observed on lactation persistency and post-partum reproductive performance. Dairy buffaloes under AF supplemented with BPAA had greater ( $P < 0.05$ ) milk fat and total solids contents compared with the rest of the treatments. The use of augmented feeding with BPAA and SRNPN supplements resulted in greater net income of P33,762 per lactation. In conclusion, augmented feeding alone or with BPAA and SRNPN supplements in dairy buffaloes improves ADG, nutrient utilization and milk production. **(Author's abstract)**

**Keywords:** *Agriculture, Augmented feeding, Bypass amino acids, Non-protein nitrogen, Dairy buffaloes*

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Philippine Journal of Veterinary and Animal Sciences, Volume No. 40 Issue No. 2, 145-158  
2014,  
(Filipiniana Analytics)  
NP

## **Effect of bovine lactoferrin on growth performance and intestinal histologic features of broilers**

*Aguirre, Aira Therese A. , Cruz, Florante A. , Merca, Florinia E. , Oliveros, Maria Cynthia R. , Angeles, Amado A. , Acda, So*

A 42-day feeding trial was conducted to determine the effect of bovine lactoferrin (bLf) on the performance and intestinal histological features of broilers. Three hundred straight-run day-old Cobb broilers were distributed to five treatments following a completely randomized design: basal diet without bLf or chlortetracycline (CTC), diet with 1 g CTC 15%/kg feeds and diets with 130, 260 and 520 mg bLf/kg feed offered during the starter stage. Metabolizability of nutrients, performance parameters and intestinal villi height and crypt depth were determined. Nutrient digestibility and apparent metabolizable energy of feeds with 130 and 260 mg bLf/kg feed were the same ( $P > 0.05$ ) with the CTC-supplemented feeds. Bovine Lf did not affect ( $P > 0.05$ ) the feed intake and livability of birds. Body weight gain and feed conversion ratio were improved ( $P < 0.05$ ) when bLf was added in the diet and were comparable ( $P > 0.05$ ) to broilers fed diets with CTC. Villi height increased ( $P < 0.05$ ) as bLf was increased in the diet up to 260 mg/kg feed, but decreased at 520 mg/kg feed which was comparable to CTC-fed birds. Crypt depth improved ( $P < 0.05$ ) when broilers were fed diets with either CTC or bLf. Results suggested that bLf can be used as replacement for CTC. **(Author's abstract)**



**Keywords:** Agriculture, Broiler, Lactoferrin, Metabolizability, Performance, Villi height

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2015,  
(Filipiniana Analytics)  
NP

0010

**Effects of feeding acacia (*Samanea saman* (Jacq.) Merr.) pod meal on growth performance of heifers and *in vitro* rumen fluid methane and carbon dioxide production in rumen-cannulated cattle**

*Decena, Krystalene S. , Angeles, Am*

The objectives of this study were to evaluate the effects of feeding acacia pod meal (APM) on the growth performance of heifers and *in vitro* carbon dioxide (CO<sub>2</sub>) and methane (CH<sub>4</sub>) production in rumen-cannulated cattle. In Exp. 1, 18 growing heifers (initial BW: 220 ± 20 kg) were randomly distributed to 3 dietary treatments: 1) 100% Rice bran-copra meal combination (RBC), 2) 50% Rice bran-copra meal-50% APM combination (RCA), and 3) 100% APM. Animals were provided their respective rations for 60 d based on a feeding rate equivalent to 3.5% of the animal's BW (on a DM basis). Dietary treatments were offered at 70:30 roughage to concentrate ratio with the concentrate containing varying levels of APM. Inclusion of APM did not affect ADFI but negatively affected (P<0.05) both ADG and F:G. In Exp. 2, 3 rumen-cannulated cattle were used to measure the *in vitro* total gas, CO<sub>2</sub> and CH<sub>4</sub> production using either APM, napier grass, and rice bran D1-copra meal as incubation substrate. There were no differences in the quantities of total gas, CH<sub>4</sub>, CO<sub>2</sub>, and CO<sub>2</sub>:CH<sub>4</sub> ratio measured between the treatments. It can be concluded that feeding acacia pod meal to growing cattle negatively affected ADG and F:G. *In vitro* gas production alone cannot explain the poorer growth performance observed in cattle fed with acacia pod meal. (Author's abstract)

**Keywords:** Agriculture, Acacia pod meal, Heifers, Growth performance, Carbon dioxide, Methane, *In vitro* gas production

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2014,  
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NP

0011

**Efficacy of garlic (*Allium sativum* L.), oregano (*Origanum vulgare* L.) and turmeric (*Curcuma longa* L.) against larval development of *Ascaridia galli* eggs isolated from Philippine native chicken**

*Magpantay, Veneranda A. , Villanueva, Addirose Gillian P., Hurtada, Julienne Maria Undine Paz*

The efficacy of three plant extracts - garlic, oregano and turmeric - in inhibiting larval development of *Ascaridia galli* eggs was evaluated *in vitro*. About 2000-2500 *A. galli* eggs were incubated per treatment and replicated five times. Ethanolic extracts of plant materials were diluted in phosphate buffered saline to form a dose concentration of 50 mg/ml. After 21 days of incubation under room temperature, results revealed that the three plants were as effective as albendazole in inhibiting the development of *A. galli* eggs on the 10th day of incubation. Garlic and

turmeric were found to be effective but were no longer as efficient as albendazole on day 14 and day 21. Among the three plants, garlic was the most effective in inhibiting the development of the eggs since it did not go beyond the morula stage until day 21. On the other hand, the number of eggs that formed into larval stage was lower in turmeric than in oregano. This study indicated that garlic, oregano and turmeric can be used to prevent *A. galli* eggs development into L3 stage and hence, may prevent roundworm infection in chicken. However, supplementation must be programmed in order to retain their efficacy. **(Author's abstract)**

**Keywords:** *Agriculture, Ascaridia galli, Chicken, Garlic, Larval development, Oregano, Turmeric*

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Philippine Journal of Veterinary and Animal Sciences, Volume No. 41 Issue No. 1, 57-64  
2015,  
(Filipiniana Analytics)  
NP

**0012**

### **Estimating liveweight of Philippine native pigs using external body measurements**

*Paras, Edrian P., Cu-Cordoves, Rodeza Kristine*

The objective of this study was to develop prediction equations to estimate liveweight of Philippine native pigs with the use of external body measurements such as heart girth, midriff girth, flank girth, and body length. A total of 54 Philippine native pigs (13 males and 41 females) weighing between 20 to 50 kg were used in the study. Body length (BL), heart girth (HG), midriff girth (MG) and flank girth (FG) of each individual pig were measured using a tape measure, then the actual BW was determined using a weighing scale. Correlation analysis was performed to determine the degree of linear relationships between liveweight and external body measurements. Simple and stepwise multiple regression analyses were used to develop the optimal prediction models. Body weight was positively correlated ( $P < 0.01$ ) with HG ( $r = 0.94$ ), FG ( $r = 0.91$ ), MG ( $r = 0.88$ ) and BL ( $r = 0.76$ ). Heart girth was the best predictor of liveweight of Philippine native pigs, which explained 88% of the total variability. Including body length as a predictor increased the  $R^2$  of the regression model to 92% ( $P < 0.05$ ). In conclusion, live weight of Philippine native pigs between 20 to 50 kg may be predicted using the following prediction equation:  $BW, \text{ kg} = -46.32 + 0.83 \times \text{Heart girth, cm} + 0.27 \times \text{Body length, cm}$ . **(Author's abstract)**

**Keywords:** *Agriculture, Body weight, External body measurements, Philippine native pigs, Liveweight, Prediction equation*

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Philippine Journal of Veterinary and Animal Sciences, Volume No. 40 Issue No. 1, 47-52  
2014,  
(Filipiniana Analytics)  
NP

**0013**

### **Eubiotic lignocellulose supplementation in sows reduced dry period and preweaning mortality of piglets**

*Magpantay, Veneranda A. , Angeles, Emily P. , Regaspi, Anthony Francis S. , Luis, Edwin S. , Reyes, Francis Carlo C., Cardona, Jose Karlo M. , Baoy, Heherson T*

A feeding trial was conducted to evaluate the efficacy of supplementing eubiotic lignocellulose on reproductive performance of breeder sows. Seventy female pigs (average parity:  $2.62 \pm 0.19$ , Landrace x Large White) were

allotted to two dietary treatments following randomized complete block design, with parity as blocking factor. *Eubiotic lignocellulose* supplementation was given at 25 and 10kg/ ton add-on at gestating and lactating diets, respectively. *Eubiotic lignocellulose* supplementation during gestation and lactation reduced preweaning mortality of piglets ( $P<0.01$ ) and dry period of sows ( $P=0.0775$ ). However, supplementation had no significant effect on other variables measured. This indicates that increasing the fiber content of the diet by adding *eubiotic lignocellulose* during gestating and lactating stages enhances piglet survival and indirectly improves the reproductive performance of sows by shortening the dry period. **(Author's abstract)**

**Keywords:** *Agriculture, Eubiotic lignocellulose, Gestation, Lactation, Pig, Reproduction*

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Philippine Journal of Veterinary and Animal Sciences, Volume No. 41 Issue No. 2, 85-91  
2015,  
(Filipiniana Analytics)  
NP

0014

### **Ground squash seeds as potential alternative dewormer for native chicken** *Peralta, Rom*

This study sought to determine the anthelmintic potential of Ground Squash Seed (GSS) as dewormer for native chickens. Using *In-Vivo* experiments, 60 native chickens were randomly distributed into five treatments and four replications with three sample birds per replicate following the Completely Randomized Design (CRD). The ground squash seeds collected from squash growers in Diffun, Quirino were processed to treat the experimental birds using predetermined dosages. Results showed that GSS was effective against *Raillietina*, *Capillaria*, and *Ascaridia*. Efficacies on *Capillaria* and *Ascaridia*, however, vary among the three doses of GSS and the number of post-treatment days. The comparative analysis of the four treatment groups showed that the use of commercial dewormer resulted in a higher cost. Alternative dewormer like GSS was found six times cheaper than commercial dewormer. GSS could be used as an anthelmintic alternative in native chicken especially against *tapeworm*. The use of ground squash seeds, therefore, is highly recommended as alternative dewormer. It can also reduce the cost of using commercial anthelmintic which is commonly used by most poultry raisers. **(Author's abstract)**

**Keywords:** *Agriculture, Parasitism, Anthelmintic, Alternative dewormer, Ground squash seed, In vivo, Gastro intestinal parasites*

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QSU Research Journal, Volume No. 4 Issue No. 1, 7-19  
2015,  
(Filipiniana Analytics)  
NP

0015

### **Growth and sensory characteristics of broilers fed with squash seed meal (*Cucurbita maxima*)** *Blando, Carm*

This study evaluated the growth performance and sensory characteristics of broilers as influenced by the varying levels of squash seed meal. A feeding trial was conducted using 120 day-old Minerva broiler chicks randomly distributed to four home mixed ration treatments with 0%, 2.5%, 5%, 7.5% squash seed meal in three replication.

Results revealed that the different levels of squash seed meal in broiler ration significantly influenced body weight, gain in weight, rate of growth, feed conversion ratio, and feed conversion efficiency during the first week up to the third week of the study but not throughout the six-week feeding trial period. Weekly and cumulative feed consumption did not differ among experimental broilers fed with ration containing different levels of squash seed meal on the fourth to sixth week. Feed conversion ratio and feed conversion efficiency of the experimental broilers were comparable among the different treatment groups on the fourth to sixth week of the study. Dressing percentage with and without giblets did not differ significantly among broilers that were fed with different levels of squash seed meal (*Cucurbita maxima*). Similarly, records show that pancreas and liver weights of the experimental broilers did not differ among the different treatment groups, indicating no toxic substances and deleterious effects in feeding any of the levels of squash seed meal used in the study. Organoleptic analysis showed that supplementation of different levels of squash seed meal (*C. maxima*) in broiler ration has no significant influence on taste or flavour, tenderness, as well as aroma and juiciness of oven-cooked broiler meat samples. Panelists rated the sensory characteristics of meat samples from broilers fed with the control diet an *acceptability rating of like very much*. Highest return above feed costs were obtained from sales of broilers fed with 7.5% squash seed meal ration while the lowest returns were derived from broilers fed with the control (0% squash seed meal) ration. The results imply that the 7.5% squash seed meal supplementation in broiler ration produces higher return above feed costs thus giving economic benefit to prospective local broiler growers. **(Author's abstract)**

**Keywords:** *Sensory characteristics, Agriculture, Growth performances, Squash seed meal, Cucurbita maxima*

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QSU Research Journal, Volume No. 4 Issue No. 1, 22-37  
2015,  
(Filipiniana Analytics)  
NP

0016

### **Growth performance and carcass drip loss and water holding capacity of broilers fed low density diets supplemented with liquid multi-vitamins and amino acids during periods of stress**

*Hurtada, Julienne Maria Undine Paz A. , Oliveros, Maria Cynthia R. , Cu, Rodeza Kristine S. , Magpantay, Venera*

Two hundred eighty day-old broiler chicks were raised up to 35 days to compare the growth performance, drip loss and water holding capacity of the meat of broiler chicken fed normal and low density diets supplemented with liquid multi-vitamins and amino acids (LMVAA) in drinking water during periods of stress. The birds were distributed into four treatments following a Completely Randomized Design. Results showed that the group fed low density diet had similar growth performance compared with normal density diet. During the starter and finisher phases, higher ( $P < 0.05$ ) body weight, gain in weight, and feed consumption were noted in the group fed normal density diet. Highest income over feed and chick cost was noted in the group fed low density diet. This indicates that LMVAA supplementation in drinking water only during the 1<sup>st</sup> week of life and at 21<sup>st</sup> to 23<sup>rd</sup> day of age tends to compensate for poor nutrition and constant exposure to heat stress. However, it failed to improve drip loss and water holding capacity of the meat when supplemented during the last two days prior to harvest. **(Author's abstract)**

**Keywords:** *Agriculture, Broiler growth, Diet density, Drip loss, Liquid multi-vitamins-amino acid, Water holding capacity*

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2013,  
(Filipiniana Analytics)  
NP

## Hen-day egg production and egg qualities of Philippine mallard duck (*Anas platyrhynchos domesticus* L.) with varying plumage colors

Magpantay, Veneranda A. , Datuin, Julie R

The study was conducted to determine the egg production performance of Philippine Mallard ducks (PMD) with black, brown, dark brown and light brown plumage colors. A total of 1100 ready-to-lay (22 weeks old) PMD housed in an elevated housing system with ponds were used in the study. There were three replicates for black, brown and dark brown and two replicates for light brown with 100 ready-to-lay ducks per replicate. Egg production and egg quality parameters (egg weight, shell thickness, albumen height and yolk color) were taken and subjected to ANOVA and Least Significant Difference test. Linear contrast analysis was also performed to compare black plumage color and those with shades of brown plumage. Results showed that PMD with black plumage had higher ( $P < 0.05$ ) hen-day egg production compared to PMD with shades of brown plumage throughout the experimental period. However, egg weight, albumen height, yolk color and shell thickness were not different ( $P > 0.05$ ). This study indicates that PMD with black plumage had better hen-day egg production performance over the brown and its intermediate. Genetic characterization, particularly identification of possible DNA polymorphism among PMD, is recommended. **(Author's abstract)**

**Keywords:** Agriculture, Egg production, Egg quality, Philippine mallard duck, Plumage color

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NP

## Impact of the STBF farm on banana production in Cagayan Valley

Dolojan, Fredismi

The performance of the Science and Technology-Based Farm (STBF) on banana production in Cagayan Valley was assessed in terms of the level of adoption, the socio-economic benefits, sustainability expressed in terms of the extent of the utilization of the interventions, the factors affecting level of adoption, and the socio-economic benefits of the adopter-respondents. There were four *Magsasaka Siyentistas* (MS) who received formal training for the implementation of banana varieties such as cavendish (Villaverde, Nueva Vizcaya), *lakatan* (Diffun, Quirino), *latundan* (Alfonsolista, Ifugao), and *saba* (Angadanan, Isabela). The respondents were the 66 adopters from the four areas. Results showed that there were three interventions of the STBF that gained high level of adoption: weeding regularly, deleafing of infected leaves, and desuckering. The different STBF components that obtained low level of adoption were: the use of ethrylin enhancing fruit ripening, watering of *lakatan* plants, regular fertilizer application, proper planting distance, propping of fruit bearing plants, bagging of fruits, and the least adopted was the use of tissueculture derived planting materials. Only three of the interventions in the STBF were sustainably or continually utilized by the respondents and these were weeding, deleafing, and desuckering. Among the difficulties on the adoption of the STBF were: production-related and financial factors, the attack of banana bunchy top (BBTV) and sigatoka diseases, and calamities such as typhoons. **(Author's abstract)**

**Keywords:** Agriculture, Science and technology-based farm (STBF), Banana bunchy top (BBTV), POT, Cavendish, Lakatan, Saba

***In situ* degradation of selected protein sources in rumen-cannulated brahman cattle (*Bos indicus* Linn.)**

***Bestil, Lolito C. , Atole, Angelo Fran***

This study assessed the rumen bypass potential of various protein sources at 24, 48 and 72 hr of incubation in rumen-cannulated cattle. The animal was fed with Napier and legume supplement following a ratio of 80:20. The incubation process followed the sequential addition method and digested samples were analyzed for percent dry matter and percent crude protein. Significantly lower dry matter digestibility and dry matter disappearance rate were noted using Flemingia (*Flemingia macrophylla*) leaf meal than in Calopo (*Calopogonium muconoides*), Kakawate (*Gliricidia sepium*), Pinto peanut (*Arachis pintoi*) and Soybean meal (SBM) in all rumen exposure times. Crude protein digestibility (CPD) and crude protein disappearance rate (CPDR) of Flemingia were significantly lower than Calopo, Kakawate, Pinto peanut and SBM at all periods which could be due to its high tannin content. Calopo had significant reduction in CPD and CPDR than Pinto peanut and SBM at 24 hr, SBM at 48 hr, and Kakawate and Pinto peanut at 72 hr and this could be due to its physical properties, maturity and source of leaves. The study suggests that Flemingia is a good source of bypass protein for ruminants. **(Author's abstract)**

**Keywords:** *Agriculture, Bypass protein, Cattle, In situ degradation, Soybean, Tannin*

***In situ* ruminal degradation of foliage with varying pH levels from selected trees and shrubs**

***Bestil, Lolito C. , Aban, Ma***

*In situ* (nylon bag) technique was used to investigate the effects of forage pH level and rumen pH manipulation on rumen degradability of foliages from selected trees and shrubs. Six forages - Kakawate (*Gliricidia sepium*), Madre de agua (*Trichanthera gigantea*), Acacia (*Samanea saman*), Gmelina (*Gmelina arborea*), Robles (*Cassia siamea*) and Santol (*Sandoricum koetjape*) - were analyzed for their pH level and were categorized as low, medium and high pH; consequently, two samples in each category were used in the study. The study was set-up in a completely randomized design. The pH level of forages significantly influenced dry matter disappearance (DMD) in the first 24 hours of incubation, such that forages with medium to high pH levels generally showed higher values than those with low pH levels. The DMD after 48 hours of incubation appeared to be more affected by the characteristics of the forages influencing degradability rather than their pH levels. The addition of acetic acid to bring the rumen pH into an ideal level of 6.0-6.4 increased DMD, indicating the beneficial effects of rumen pH manipulation on forage digestibility. **(Author's abstract)**



**Keywords:** Agriculture, Forage, In situ degradability, pH level, Rumen fermentation

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NP

0021

### **Influence of irrigation system on characteristics of pulp and paper manufactured from sunflower stalks**

*Idris, Safa , Osman, Sabah, , Abd alla Idris, Fadl elmoula, Alfa, Moham*

Sunflower mainly cultivated for oil production, was evaluated as raw material for pulp and paper making. The irrigated and rain fed sunflower stalks were used to determine the effect of irrigating system on pulp and paper characteristics. The soda- anthraquinone pulping process was used in this study. The study confirms the feasibility of producing pulp and paper from two sunflower stalks been used. Differences in chemical compositions and physical properties of paper manufactured from both stalk were noticed. The cellulose, lignin, ash, 1%NaOH extractive and hot water extractive has been determined for both stalks, furthermore the paper manufactured were subjected to physical properties tests. The tests carried such as burst index, tearing, breaking length and bulk. The results obtained showed that, the pulp produced from irrigated stalks recorded higher values of hot water extractive, 1%NaOH extractive, cellulose, ash contents and yield percentage comparable with same contents obtained from rain fed stalks. On the other hand the physical properties showed slightly differences in burst index (3.26,3.24)for irrigated and rain fed stalks respectively, the tearing resistance it seem to be higher (4.32) for product of irrigated stalks compared with (3.19) value obtained for rain fed stalks. **(Author's abstract)**

**Keywords:** Agriculture, Sunflower stalks, Pulping process, Chemical compositions, Physical properties, Soda-anthraquinone

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NP

0022

### **Microbial risk assessment of urban agricultural farming: a case study on Kwame Nkrumah University of Science and Technology Campus, Kumasi, Ghana**

*Ackerson, Nana O.B., Awuah, Esi*

This study was carried out on KNUST campus, Kumasi, Ghana, to assess the microbial quality of irrigation water and on vegetables as well as the risk associated with vegetable irrigated farming. Microbiological contamination of irrigation water and lettuce was monitored weekly for two months from eight farms for faecal and total coliform, and helminth eggs levels. Quantitative microbial risk assessment was subsequently evaluated. Faecal coliform and helminth egg concentrations of irrigation water ranged from  $3.2 \times 10^3$  to  $3 \times 10^4$  faecal coliform/100 ml and 6 to 15 eggs/l respectively and that of the lettuce ranged from  $7 \times 10^2$  to  $1.8 \times 10^3$  faecal coliform/10 g and 6 to 19 eggs/100 g respectively. *Ascaris lumbricoides*, *Schistosoma*, *Trichuris trichiura*, and *Strongyloides* larvae were isolated from both irrigation water and on lettuce. *Ascaris* and *Escherichia coli* were the reference organisms used in the

quantitative microbial risk assessment. The annual risk of infections to the farmers for both pathways was  $10^{-2}$  for *Ascaris* and  $10^{-1}$  for *E. coli*. (Author's abstract)

**Keywords:** Agriculture, Faecal coliform, Helminth egg, Irrigation water, Lettuce, Microbial risk assessment

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NP

0023

### **Non-starch polysaccharides enzyme supplementation of growing-finishing pig diets with reduced metabolizable energy and digestible amino acids**

*Martin, Ernesto A., Juan, Jayson*

The study evaluated the effects of supplementing non-starch polysaccharides enzyme (NSPE) to a cornsoybean meal based diet with reduced ME and digestible amino acids (DAA) on growth performance, carcass characteristics, and economic return in growing-finishing pigs. A total of 54 barrows (Duroc-Pietrain × Landrace-Large White) with an initial BW of  $25.6 \pm 1.6$  kg were randomly assigned using a completely randomized design to 3 dietary treatments: positive control (PC, formulated under local industry nutrient specifications), negative control (NC, reduced to 65 kcal ME/kg and 1.5% DAA) and NC + NSPE. The NSPE is a commercial preparation (Rovabio Excel AP, Adisseo France) produced from fermentation of nongenetically modified *Penicillium funiculosum*. The NSPE was added at the rate of 50 g/100 kg of the diet. Each treatment had 6 replicate pens with 3 pigs per pen. Pigs fed the diet with NSPE had improved ( $P < 0.05$ ) ADG and F:G compared with those fed the PC and NC diets in the starter phase, and tended ( $P < 0.08$ ) to have improved F:G and final weights in the overall phase. There was no indication that the reduction in ME and DAA compromised performance of the pigs. Dietary effects on carcass characteristics were not observed. The inclusion of NSPE to the diet with reduced ME and DAA decreased ( $P < 0.03$ ) cost per kg gain during the starter, grower, and overall phase. In conclusion, results indicate that the NSPE can be used satisfactorily in growing-finishing pig diets with reduced ME and DAA. (Author's abstract)

**Keywords:** Agriculture, Pigs, Non-starch polysaccharides, Metabolizable energy, Digestible amino acids, Enzyme

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2014,  
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NP

0024

### **Participatory approach in definition of breeding objective traits for Boholano strain of native chicken**

*Chatto, Edgar I., Salces, Agapita J., Quirog, Liza*

The research aims to define the breeding objective traits of Boholano strain of native chicken using participatory approach to be incorporated for its purification. A total of 45 households were interviewed. The questionnaire was designed to collect data covering general information on village poultry production such as socio-management characteristics, production objectives, population structure, breed choice and trait preferences, market preferences of

specific traits, and farmers' selection practices. The participatory farmers' discussions were designed to involve stakeholders in defining the breeding objective traits and deriving their relative importance in the production environment based on the different functions of chickens and traits identified in the interviews. The results showed that production of eggs for consumption is the principal function of chickens in most towns followed by the use as source of income and meat for home consumption. Weight is the primary factor that dictates market price but farmers rated growth and number of eggs as the production traits that they would like to be improved. Therefore, the breeding objective should be to develop dual-purpose Boholano strain of native chicken considering the traits of number of eggs and live weight and possessing the distinct plumage color and comb type. **(Author's abstract)**

**Keywords:** *Agriculture, Breeding, Native chicken, Participatory approach*

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(Filipiniana Analytics)  
NP

0025

### **Performance and egg quality of babcock layer chicken fed coconut oil and soya lecithin oil in the ration**

*Luis, Edwin S. , Bautista, Herald Nygel F. , Dagaas, Clar*

A study was conducted to determine the performance and the quality of eggs laid by layers fed coconut oil and soya lecithin oil supplemented diets for 16 weeks. Ninety 40-week old individually-caged layers were randomly assigned to three dietary treatments following a completely randomized design replicated 30 times. The dietary treatments were: basal diet with 2% coconut oil (T1), basal diet with 1% coconut oil and 1% soya lecithin oil (T2) and basal diet with 2% soya lecithin oil on equivalent weight basis (T3). Results showed that T2 layers were significantly ( $P<0.05$ ) better feed converter to eggs, had significantly lowest feed consumption and highest weight loss among the three treatments. Likewise, layers fed diets containing 1% coconut oil plus 1% soya lecithin oil (T2) had the highest IOFC and, therefore, is the most economical. No significant differences were found on other production and egg quality parameters measured. It is more profitable using soya lecithin oil in combination with coconut oil in the production of table eggs. The study suggests that soya lecithin oil can be a good replacement for coconut oil, especially when the latter's price increases in the local market. **(Author's abstract)**

**Keywords:** *Agriculture, Coconut oil, income over feed cost, Layer, Soya lecithin oil*

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2015,  
(Filipiniana Analytics)  
NP

0026

### **Performance of layers fed with dietary herbal methionine and DL-methionine supplemented diets**

*Luis, Edwin S. , Gragasin, Richard Joseph T., Dagaas, Clarita T*

The objective of the study was to determine the performance of layers fed with either DL-methionine (DL-M) or herbal methionine (HM) supplemented diets. A total of 100 individually caged pullets were randomly assigned using a completely randomized design to 5 dietary treatments, namely: diet without methionine supplement, diet supplemented with 100% DL-M, diet with 50% DL-M + 50% HM, diet with 100% HM on equivalent weight basis, and diet with 150% HM. Layers were given their respective diets for 16 wk. Each treatment was replicated 20 times with a caged pullet per replicate. No differences were observed in the final body weight and body weight gains among the treatments. Layers fed the 50% DL-M: 50% HM diet had the greatest ( $P<0.05$ ) ADFI. Hen-day egg production was not affected by the type and level of methionine supplementation; however, layers fed either the 100% DL-M, 50% DL-M:50% HM, or 100% HM diet had improved ( $P<0.05$ ) feed conversion efficiency compared with those fed the diet with no supplemental methionine. Layers fed the diet with 100% DL-methionine had greater ( $P<0.05$ ) egg weight than those fed the diet with no supplemental methionine and the diet with 100% HM. However, layers fed with herbal methionine had greater ( $P<0.05$ ) intensity of yolk color. Layers fed the diet with 50% DL-M:50% HM had the highest IOFC. Under the conditions set in this study, herbal methionine has similar efficacy in terms of egg production and feed conversion efficiency compared with DL-methionine as a supplemental source of methionine in laying diets. **(Author's abstract)**

**Keywords:** *Agriculture, Methionine, Egg production, Yolk color, Layers*

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NP

0027

### **Phenotypic and genetic characteristics of Boholano genetic group of Philippine native chicken (*Gallus gallus domesticus*, L.)**

*Yebron, Jr. Medino Gedeun N. , Salces, Agapita J. , Salces, C*

A total of 130 heads of native chicken from the entire province of Bohol were randomly sampled to determine the phenotypic characteristics, including qualitative and quantitative traits, of the Boholano genetic group of the Philippine native chicken. Results showed variations in the qualitative traits of the Boholano genetic group. However, it is noted that Boholano genetic group was predominantly of single comb, orange-colored iris, white skin, yellow shank and red-plain plumage. Although the quantitative traits of Boholano genetic group were not significantly different across the province of Bohol, the roosters were significantly heavier and had higher body measurements than the hens ( $P<0.01$ ). Twenty four native chickens and a commercial layer strain were used to evaluate the genetic characteristics of the Boholano genetic group. Sixteen microsatellites were used but only 13 microsatellite markers were found to be polymorphic. The 13 microsatellites, distributed to eight linkage groups, had 4-8 alleles detected per locus. The high mean number of alleles per locus, observed heterozygosity and expected heterozygosity, negative inbreeding coefficient and high fixation coefficient of a subpopulation within the total population values show the high diversity of Boholano genetic group of Philippine native chicken. **(Author's abstract)**

**Keywords:** *Agriculture, Bohol, Genetic characterization, Phenotypic characterization, Philippine native chicken, Gallus gallus domesticus, L.*

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2015,  
(Filipiniana Analytics)  
NP

### **Phenotypic characterization of native chicken in Palawan, Philippines**

*Vega, Renato S.A. , De Guia, Anna Pauline O. , Lambio, Angel L. , Lopez, Jr., Roge*

Three hundred and one native chickens, consisting of 199 hens and 102 roosters, from three regions of Palawan were randomly sampled to describe the morphological characteristics and measure the morphometric characteristics of native chickens in Palawan, Philippines. Results showed variations in the morphological characteristics of native chickens in Palawan. However, it is noted that Palawan native chickens were predominantly of yellow shanks, white skin, red earlobes and red plumage pattern. Comb was mostly of the single type in hens while roosters showed rose comb type. Body length, shank length and wingspan were not significantly different among native hens and among native roosters in the three regions of Palawan. On the other hand, chest circumference of hens and roosters in the southern region was significantly larger than those in the northern and central regions of Palawan. **(Author's abstract)**

**Keywords:** *Agriculture, Native chicken, Phenotype, Palawan*

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NP

### **Preliminary evaluation of microbial and chemical properties of mechanically deboned poultry meat in the Philippines**

*Oliveros, Maria Cynthia R. , Tan, Hazel Alena D. , Molo-Dealino, May , Santos, Nerie Rose D. , Emnace, Ivy C. , Consolacion, Jer*

The influx of mechanically deboned poultry meat (MDPM) in the Philippines has raised issues regarding food safety and health; however, no data is currently available on the quality of MDPM in the country. The study aimed to gather baseline data on the microbial quality and proximate composition of MDPM. MDPM and chilled fresh chicken were purchased from three different supermarkets and evaluated for total plate count (TPC), coliform count and presence of Salmonella. The proximate composition of the MDPM was also assessed. Chicken nuggets that were formulated from a mixture of MDPM and fresh chicken were evaluated for the presence of Salmonella. The data gathered from the experiment were subjected to T-test using SPSS. The TPC and coliform count of MDPM falls within the maximum acceptable limit set by the CODEX Alimentarius Commission. Fried chicken nuggets tested were negative for Salmonella, however, chicken nuggets that were steamed for 40 minutes were found positive. The effect of cooking in the study is inconclusive since limited samples were used. Moisture and crude protein content in MDPM were less ( $P < 0.01$ ) than in fresh whole chicken, but had greater ( $P < 0.01$ ) crude fat and ash content. In conclusion, results indicate that MDPM can be used in processed meat products but should be properly and adequately cooked to completely destroy Salmonella. **(Author's abstract)**

**Keywords:** *Agriculture, Chilled fresh chicken, Coliform, Mechanically deboned poultry meat, Salmonella, Total plate count*

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2014,  
(Filipiniana Analytics)  
NP

## **A preliminary study on shelter, avoidance and risks of juvenile Portunid crabs of the genus *Scylla***

*Tumaque, Pedro , Ibardaloza, Rosel , Arcilla, Jr., Ricardo V. , Tribiana, Estrella T. , Talan, Linda F. , Mendoza, Angelica V. , Morales, Minerva I. , Masagca, Jimmy T., CSTIFDP Research Team , Torio, Sonia*

Many studies have demonstrated that habitat complexity is important to several benthic crustaceans (e.g. *Scylla* and *Panulirus*) because shelters provide the matrix of different sized refuges that organisms can use to escape from predation, rest and hide during molting. Two shelter structures as refugias were used in the study: (1) bamboo dens (7 cm x 30 cm forming letters T, L and X); and (2) “damhak”, a locally known structural lair or warren composed of a bundle of mangrove twigs and branches were used. Aerated marine wooden tanks (242 x 187 x 30 cm) with white background were set-up outside the facility of the Catanduanes Marine Multispecies Fish Hatchery (Palnab, Virac, Catanduanes, Philippines) and were stocked with juvenile *Scylla serrata* ( $\pm 4.8$  to 5.7 cm, carapace width or CW) to determine shelter-use patterns, feeding behavior, predator avoidance and risks of juvenile mud crabs from adults of *S. olivacea* ( $\pm 10.5$  to 15.5 cm, CW). Results show that that designs T and L were the most preferred but not for the X design; and further demonstrated that “damhak” is acting on the specific size of juvenile crabs that created the removal of demographic bottlenecks. This is most likely to have limiting influence on mortality; shelter provisions for escaping crabs in nylon net pen enclosures as well as risks reduction of the juvenile crabs from larger crabs. **(Author's abstract)**

**Keywords:** *Agriculture, Rivers, Cage design, Floating cages, Submerged cages, Endemic fishes, Catanduanes*

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CAS Journal of Research, Volume No. 6 Issue No. 2, 16-31  
2012,  
(Filipiniana Analytics)  
NP

## **Productivity and technical efficiency of rice farmers in Quirino Province**

*Hernando, Marissa B. , Dolojan, Fredisminda M. , Benabise, M*

The study analyzed the factors affecting rice productivity and technical efficiency in Quirino province. This study developed a production model based on the Cobb-Douglas Stochastic Frontier Production model across six municipalities in Quirino province. The triangulation approach was used in gathering the data needed. This approach involved personal interviews with the rice farmers through the aid of questionnaires: inspection of secondary data from the Department of Agriculture (DA) (masterlist of rice farmers, rice production, prices of output and inputs); and observation to validate information gathered from the interview guide. Results under irrigated system revealed positive output-input relationship in all variables such as seeds, labor, nitrogen content of fertilizers, chemicals, and pesticide used in farming. The negatively signed and significant variables considered in the IEM tend to lessen technical inefficiency of irrigated farms. The number of trainings received, irrigation from National Irrigation Administration (NIA), tenure (owned), and topography (flat) proved to be significant in lessening technical inefficiencies in farms. The overall technical efficiency of all farms under irrigated system was recorded at 0.82 and 0.80 during dry and wet season respectively. Technical efficiency index found out to be higher during dry season as compared on wet season. Significant difference in the yield level was obtained between the two farming systems. In irrigated farms, average yield obtained was 4.48 mt/ha which was 0.86 mt/ha higher than the average yield attained in rainfed areas at 3.60 mt/ha. **(Author's abstract)**



**Keywords:** Agriculture, Productivity, Efficiency, Stochastic frontier model, Rainfed, Irrigated farms

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NP

0032

**Relationship of backfat thickness and ribeye echogenicity to hepatic and splenic echogenicity in crossbred cattle (*Bos indicus* L.) and water buffalo (*Bubalus bubalis* L.)**

*Asilo, Alyssa B., Constante, Jesalyn L. , Acorda, Jezie*

Twelve two-year-old crossbred cattle (Brahman x Philippine Native) and crossbred water buffalo (Bulgarian Murrah x Philippine Carabao), with ideal body condition scores were used to determine the relationship between backfat thickness (BFT) and ribeye (RE) echogenicity to liver and spleen echogenicities. BFT and RE were examined between the 12<sup>th</sup> -13<sup>th</sup> rib of the left side of the animal using a 5.0 MHz linear transducer whereas the liver and spleen were scanned at the right 11<sup>th</sup> -12<sup>th</sup> intercostal space (ICS) and left 10<sup>th</sup> -12<sup>th</sup> ICS, respectively, using a 3.5 MHz convex transducer. The mean BFT was 1.867 cm for cattle and 1.683 cm for water buffaloes. A strong negative correlation was determined between echo mean values of back fat and spleen in water buffalo, while a weak positive relationship was found between RE and liver and spleen in cattle ( $P < 0.05$ ). No significant association was found between BFT and echo mean values of liver and spleen in cattle and water buffaloes. The results of this study can be used as reference for backfat thickness monitoring for both cattle and water buffalo in the Philippines and also serve as a guide for the features and echogenicities of backfat, ribeye, liver and spleen for both cattle and water buffalo fed with the same ration. **(Author's abstract)**

**Keywords:** Agriculture, Backfat thickness, Cattle, Echo mean, Liver, Ribeye, Spleen, Water buffalo

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(Filipiniana Analytics)  
NP

0033

**Response of Almaciga (*Agathis Philippinensis* warb.) to cutting origins and different levels of indolebutyric acid (IBA) treatment**

*Benabise, Ed*

The response of Almaciga (*Agathis philippinensis* Warb.) to cutting origins and different levels of Indolebutyric Acid (IBA) treatment were investigated in a CRD 3 x 5 factorial experiment using non-mist propagators. It also determined the best cutting origins and the most effective and economical levels of IBA that enhanced rooting and survival of Almaciga stem cuttings. Cutting origins significantly increased the percent of survival and percent of rooting, but not the number of adventitious roots and length of shoots that developed. The highest percent of survival (63.00%) and percent of rooting (65.50%) were observed on cuttings taken from the middle cuttings, while the lowest were exhibited by the cuttings emerging from the bottom portion of the stem. However, top cuttings were found comparable to cuttings taken from the middle portion of the stem. Application of different levels of IBA treatments did not influence the different parameters investigated in the study, though the highest percent of survival

(63.33%) and percent of rooting (55%) were exhibited by cuttings without any treatment. Generally, the findings implies that Almaciga can be propagated by cuttings taken from the top and middle portion of the order. Cuttings can effectively be induced to root and survive and can be economically mass-propagated from quality stocks even without IBA treatment. **(Author's abstract)**

**Keywords:** *Agriculture, Stem cuttings, Rooting, Almaciga, Indolebutyric acid*

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NP

0034

### **Responses of lactating dairy cows to climatic conditions in Los Baños, Laguna, Philippines**

*Velasco, Noe B. , Ty, Karla Joy S. , Ramchand, Sharmila DL. , Gonzales, Ailynn A. , Sevilla, Ce*

A study was conducted at Los Baños, Laguna to determine the degree of correlation among productive and physiological responses of local lactating dairy cows with climate variability. From an average of 10 lactating Holstein-Sahiwal dairy cows, the monthly average milk yield, dry matter intake, pulse rate (P), respiration rate (R) and body temperature (T) at 0700, 1100, and 1500 h for 4 consecutive days per month were gathered from September 2011 to June 2012. Heat Index (HI) was calculated from the climatic data from PAGASA Weather Station at UPLB. Correlation analysis was performed to determine the degree of linear relationships between milk yield and dry matter intake, PRT values, environmental temperature, relative humidity, and HI. Milk yield was highly correlated ( $P < 0.05$ ) with HI ( $r = -0.73$ ), environ-mental temperature ( $r = -0.71$ ), dry matter intake ( $r = -0.64$ ), and pulse rate ( $r = -0.68$ ). The effect of increasing HI value (x) on milk yield (Y) is described by the equation:  $Y = 25.6 - 0.189x$  ( $R^2 = 0.535$ ;  $P < 0.05$ ). This indicates that HI negatively influenced milk yield of lactating cows. Further studies are needed to determine the interrelationships of PRT, HI and milk yield for the formulation of adaptive mechanisms to avoid economic loss from decreased milk yield due to heat stress. **(Author's abstract)**

**Keywords:** *Agriculture, Milk yield, Dry matter intake, Physiological responses, Heat index, Dairy cows*

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2014,  
(Filipiniana Analytics)  
NP

0035

### **Science and technology-based farm of banana production in Cagayan Valley: a technology delivery system**

*Delos Trinos, Cecilia H. , Dolojan, Fredismi*

This study sought to determine the performance of Science and Technology-Based Farm (STBF) as a technology delivery system on the adoption of the Package of Technology (POT) on banana production in Cagayan Valley. This study employed descriptive-inferential method of research using questionnaire as the main tool. Quantitative and qualitative methods of research were utilized and the data gathered from the survey were supplemented with information collected from the four (4) farmers who received formal training on the implementation of STBF on banana production known as *Magsasaka Siyentista* or MS. Civil status and number of trainings attended were found

to be significantly correlated with the level of adoption of the respondents, the type of farming, crops grown and animal raised, banana farm area and banana variety, income derived before and after the adoption of the STBF on banana. Moreover, the experts' communication skills and the partner member agency's contribution as management support factor were found to be significantly related to the level of adoption of the respondents. The type of farming was also found to be significantly related to the economic benefits of utilizing the interventions. The level of adoption of the respondents was significantly correlated with the socio-economic benefits derived from utilizing the interventions on the STBF on banana production. **(Author's abstract)**

**Keywords:** *Agriculture, Adoption, Science and technology-based farm, Social benefits*

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NP

0036

### **Sensory characteristics of organically grown chicken under coconut-based production system**

***Balon, Luckylito A. , Bulatao, Mary Jean G. , Bueno, Cri***

Meat from selected breeds of chicken (Paraokan genetic group of Philippine native chicken; free-range colored and commercial white breeds) grown organically in a coconut-based production system and commercially raised chicken were subjected to sensory evaluation to assess attributes such as flavor, off-flavor, tenderness, juiciness and general acceptability using a 9-point qualitative scale. All sensory parameters evaluated were not significantly different among treatments. However, commercially raised chicken tended to have better flavor and tenderness scores while the free range chicken breed tended to have better score on off-flavor, juiciness and general acceptability compared to other birds. Generally, there is a tendency for both the native and free range chicken grown organically to have better scores on off-flavor and juiciness characteristics and general acceptability scores compared to the other two treatments. **(Author's abstract)**

**Keywords:** *Agriculture, Chicken, Coconut, Organic, Qualitative scale, Sensory characteristics*

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Philippine Journal of Veterinary and Animal Sciences, Volume No. 41 Issue No. 1, 76-79  
2015,  
(Filipiniana Analytics)  
NP

0037

### **Sero-surveillance of hog cholera in backyard piggery farms in Nueva Ecija and Pampanga, Philippines**

***Garcia, Cristina C. , Felix, Elmer S. , Garcia, Gemer***

A sero-surveillance study on hog cholera was conducted in the provinces of Nueva Ecija and Pampanga in the Philippines from June to November 2011 utilizing ELISA. Eight to nine samples of blood were gathered from each barangay making up 40-45 representative samples from each municipality and a total of 210 for the entire province. The absence of detectable levels of antibodies in the sera of pigs was the sole basis for evaluating the prevalence of

hog cholera. Results of the study show that hog cholera was prevalent in pigs with and without a previous record of hog cholera vaccination. In the province of Nueva Ecija, the prevalence of hog cholera was 50.66% among vaccinated pigs and 31.67% in unvaccinated pigs. In Pampanga, hog cholera had a prevalence rate of 52.60% and 60.71% among vaccinated and unvaccinated pigs, respectively. Data demonstrated that unexpected vaccination failure and non-vaccination of pigs are the main factors that contribute to the prevalence of hog cholera in pigs raised under backyard conditions in the two provinces. This information will be necessary for many animal health practitioners whose advocacy is on the promotion of hog cholera control and prevention. **(Author's abstract)**

**Keywords:** *Agriculture, Backyard piggery farms, ELISA, Hog cholera, Sero-surveillance*

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Philippine Journal of Veterinary and Animal Sciences, Volume No. 39 Issue No. 2, 237-246  
2013,  
(Filipiniana Analytics)  
NP

0038

**$\beta$ -galactomannanase supplementation improves protein digestibility and growth performance in growing pigs fed diets containing high levels of copra meal**  
*Merca, Florinia E. , Luis, Edwin S. , Agbisit, Jr., Elpidio M. , Acda, Sonia P. , Adiova, Christ*

The objective of this study was to determine the effects of  $\beta$ -galactomannanase supplementation of diets containing high levels of copra meal on nutrient digestibility and growth performance of growing pigs. A total of 120 pigs (Landrace X Large White X Duroc crossbreds; initial BW: 49 kg) were randomly allotted to 4 treatments following a 2 x 2 factorial arrangement in a completely randomized design. The factors were level of copra meal (20 and 25%) and  $\beta$ -galactomannanase supplementation. A commercial enzyme preparation containing  $\beta$ -galactomannanase with a minimum activity of 1000 units/g was added at the recommended inclusion rate of 5 g/kg of copra meal incorporated in the diet. Two weeks after the start of the experiment, 4 pigs from each treatment were randomly selected and were used in the digestibility trial. There were no copra meal level  $\times$  enzyme interaction observed for all the parameters measured in the study. Apparent total tract digestibility (% ATTD) of DM, crude fiber, ether extract, and GE were not affected by copra meal level and  $\beta$ -galactomannanase supplementation. However, increasing copra meal level in the diet reduced ( $P<0.05$ ) the ATTD of CP. The addition of  $\beta$ -galactomannanase to the diet increased ( $P<0.05$ ) ATTD of CP. Increasing the copra meal level in the diet did not affect growth performance; however, ADG and F:G of growing pigs were improved ( $P<0.05$ ) by  $\beta$ galactomannanase supplementation. In conclusion, the inclusion of copra meal can be raised up to 25% in growing pig diets, provided that diets are supplemented with  $\beta$ -galactomannanase. **(Author's abstract)**

**Keywords:** *Agriculture, B-galactomannanase, Copra meal, Growth performance, Non-starch polysaccharides, Nutrient digestibility*

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Philippine Journal of Veterinary and Animal Sciences, Volume No. 40 Issue No. 1, 37-45  
2014,  
(Filipiniana Analytics)  
NP

0039

**On the rise: traditional rice varieties in farming communities in Quirino**  
*Dolojan, Fredisminda M. , Atluna, Roge*

This study presents the efficacy of traditional and upland rice varieties relative to the issue on seed sufficiency towards organic farming program of the Department of Agriculture in the province of Quirino. It aimed to determine the agronomic characteristics and yield performances of traditional and upland rice varieties in improving farming output and income of the farmers. The performance of the rice varieties was assessed in terms of their growth and yield performances and eating quality characteristics. Findings suggested that MASIPAG rice lines and other traditional varieties in the study were found adaptable to local conditions and were recommended for use by farmers in Quirino. **(Author's abstract)**

**Keywords:** Agriculture, Agronomic characteristics, Masipag rice lines, Organic farming, Upland rice, Yield performances

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QSU Research Journal, Volume No. 3 Issue No. 1, 47-52  
2014,  
(Filipiniana Analytics)  
NP

0040

### **Ultrasonography of the urogenital organs of male water monitor lizard (*Varanus marmoratus*, Weigmann, 1834)**

*Lastica, Emilia A. , Acorda, Jezie A. , Prades, Rac*

Eight apparently healthy male water monitor lizards (*Varanus marmoratus*), weighing 0.5-4.8 kg, were examined using an ultrasound machine equipped with a 5.0 MHz linear array scanner to determine the ultrasound appearance, dimensions and echo mean values of the urogenital organs. Based on snout to vent length, the eight animals were equally divided into small (<70 cm) and large (>70 cm) varanids. The kidneys of varanids were observed caudal to each gonad. They were elongated with hypoechoic parenchyma and hypoechoic to hyperechoic interlobular spaces. The testes of all eight males appeared as homogenous and moderately echogenic structures. The hemipenes appeared as anechoic structures with hypoechoic walls. The urinary bladder appeared as an elongated anechoic structure with hypoechoic walls. Significant differences in the length of left and right kidneys, length, width and circumference of left testes, length of hemipenes and length of the urinary bladder across sizes were observed. No differences were observed in the echo mean values of the different organs among small and large varanids. The data obtained in the study could serve as baseline values for evaluation of diseases and disorders of the male urogenital organs in water monitor lizards. **(Author's abstract)**

**Keywords:** Agriculture, Hemipenis, Kidney, Testes, Urinary bladder, Varanus, Water monitor lizard

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Philippine Journal of Veterinary and Animal Sciences, Volume No. 39 Issue No. 2, 247-258  
2013,  
(Filipiniana Analytics)  
NP

0041

### **Yield, quality and feed cost efficiency of milk produced by Anglo-Nubian Goats Fed different mixtures of napier (*Pennisetum purpureum*) grass and malunggay (*Moringa oleifera*)**

*Basitan, Ilene Saya-ao., Jarcia, Emma*

The study evaluated which proportion of Napier grass and Malunggay diet is best in increasing milk quantity and quality of Anglo Nubian dairy goats and assessed the cost of producing goat's milk in these animals. Six purebred and three upgraded Anglo-Nubian goats were distributed into three blocks according to breed and average weight and were subjected to a 60-day feeding period given the following treatment diets: Treatment 1 – 100% Napier grass; Treatment 2 – 70% Napier grass and 30% Malunggay; and Treatment 3 – 60% Napier grass and 40% Malunggay. All treatments received the same amount of concentrate as supplement. After the study, the average milk yield of the animals under Treatment 1 was 246.80 ml while Treatment 2 had 431.33 ml and Treatment 3 had 458.33 ml. The milk density was 26.46, temperature of 34.79°C and freezing point of -0.381°C. The milk contained 5.98% fat, 8.31% solids-non-fat, 2.74% lactose, and 4.76% protein. The diet which produced the highest milk yield in goats was the combination of 60% Napier grass and 40% Malunggay. As to the cost, the animals given 100% Napier grass plus concentrate had the lowest cost per liter of milk produced, followed by 40% Malunggay and 30% Malunggay. **(Author's abstract)**

**Keywords:** *Agriculture, Anglo-Nubian, Dairy goats, Malunggay, Milk yield, Napier grass*

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Philippine Journal of Veterinary and Animal Sciences, Volume No. 39 Issue No. 2, 193-200  
2013,  
(Filipiniana Analytics)  
NP

## ASTRONOMY

0042

### **Foundation of vortex gravitation, cosmology and cosmogony**

*Orlov,*

A hypothesis is proposed concerning the cause of the origin of universal gravitation. This cause consists in a system of the ether vortex rotations. Physical and mathematical grounds are described and the formula for the determination of the space gravitation forces is deduced. On the basis of the vortex gravitation, the principles of creation and existence of the celestial bodies are shown. Methods of the use of the vortex gravitation properties for the space flight projection are proposed. **(Author's abstract)**

**Keywords:** *Astronomy, Ether theory, Vortex gravitation, Cosmology, Cosmogony*

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International Journal of Science and Technology, Volume No. 1 Issue No. 1, 2-20  
2012 January,  
(Filipiniana Analytics)  
NP

## BIOLOGY

0043

### **Annotated checklist of eels in Bago River, Negros Occidental, Philippines**

*Menes, Carmen C. , Bucol, Ab*



The eels occurring in Bago River, Negros Occidental, Philippines are briefly annotated. Order Synbranchiformes is represented by the swamp eel *Ophisternon bengalense* while Anguilliformes (or true-eels) consist of 10 species belonging to four families. Snake-eels (Ophichthidae) consist of seven species while Freshwater Eels (Anguillidae), Spaghetti Eels (Moringuidae), Moray Eels (Muraenidae) are represented by a single species each. **(Author's abstract)**

**Keywords:** *Biology, Eels, River, Brackish water, Freshwater, Negros Occidental*

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Asian Journal of Biodiversity, Volume No. 1 Issue No. 1, 126-138  
2010,  
(Filipiniana Analytics)  
NP

0044

### **Arthropod community structure during the early stages of leaf litter decomposition**

*Barrion-Dupo, Aimee Lynn A. , Perez, Juvenil Eis*

Arthropods constituting 51 families of 13 orders were collected from leaf litter during the early stages of decomposition. These groups were classified into their respective trophic categories based on mouthpart inference. These categories are as follows: chewing detritivores (15 families) > chewing predators (6 families) > chewing herbivores and sucking herbivores (5 families) > sucking predators (3 families) > chewing parasites and chewing omnivores (2 families). A simplified food web of the arthropods in leaf litter is also presented. **(Author's abstract)**

**Keywords:** *Biology, Arthropod community, Foodweb, Leaf litter, Trophic categories*

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Asian Journal of Biodiversity, Volume No. 4 Issue No. 1, 84-98  
2013,  
(Filipiniana Analytics)  
NP

0045

### **Assessment of biodiversity and water quality in association with land use in the Alanib River, Mt. Kitanglad Range Park, Philippines**

*Forten, Ronald Regan , Labadan, Abigail , Bruno, Angela Grace , Acma, Florfe M. , Galan, Gloria L. , Leaño, Emmanuel P. , Quimpang, Victoria T. , Opiso, Einstene M. , Coritico, Fulgent P. , Amoroso, Victor B. , Opiso, Einstene M., Coquilla, Kate Luce*

Inventory and assessment of aquatic biodiversity were conducted in Alanib River in Mt. Kitanglad, Bukidnon, which is one of the Long Term Ecological Research (LTER) sites in Mindanao. The species richness and abundance of fishes, macroinvertebrates, plankton and also vascular plants in the riparian vegetation were evaluated in relation to the influence of land use, water quality and elevation. The results of this study revealed that there were 2 species of fishes, 6 orders of macro-invertebrates 14 species of plankton and 237 species of vascular plants were identified. The surrounding land uses and human activities along the river were found to have significant impact on the overall water quality and biodiversity of the aquatic biota and riparian vegetation of Alanib River. The increasing human population and agricultural intensification at the lower section of the river contributed to the relatively lower water quality, presence of pollution tolerant phytoplankton and macro-invertebrate groups as well as invasive species of vascular plants. Hence, the overall results of this study revealed that the integrity of Alanib River in terms of its

biophysical and chemical condition is severely threatened especially in the downstream section due to various anthropogenic activities which can degrade its overall environmental quality. **(Author's abstract)**

**Keywords:** *Biology, Assessment, Stream health, River, Biodiversity, Composition, Mindanao*

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Asian Journal of Biodiversity, Volume No. 5 Issue No. 1, 54-77  
2014,  
(Filipiniana Analytics)  
NP

0046

**The bHLH Gene *Hes1* as a repressor of the neuronal commitment of CNS stem cells**  
*Kageyama, Ryoichiro, Weiss, Samuel, Shimazaki, Takuya, Ogawa, Masaharu, Miyata, Takaki, Sakakibara, Shin-ichi, Nakamura, Yuki, Okano, Hide*

*Hes1* is one of the basic helix-loop-helix transcription factors that regulate mammalian CNS development, and its loss- and gain-of-function phenotypes indicate that it negatively regulates neuronal differentiation.

Here we report that *Hes1*<sup>-/-</sup> mice expressed both early (TuJ1 and Hu) and late (MAP2 and Neurofilament) neuronal markers prematurely, and that there were approximately twice the normal number of neurons in the *Hes1*<sup>-/-</sup> brain during early neural development. However, immunochemical analyses of sections and dissociated cells using neural progenitor markers, including nestin, failed to detect any changes in *Hes1*<sup>-/-</sup> progenitor population. Therefore, further characterization of neural progenitor cells that discriminated between multipotent and monopotent cells was performed using two culture methods, low-density culture, and a neurosphere assay. We demonstrate that the self-renewal activity of multipotent progenitor cells was reduced in the *Hes1*<sup>-/-</sup> brain, and that their subsequent commitment to the neuronal lineage was accelerated. The *Hes1*<sup>-/-</sup> neuronal progenitor cells were functionally abnormal, in that they divided, on average, only once, and then generated two neurons, (instead of one progenitor cell and one neuron), whereas wild-type progenitor cells divided more. In addition, some *Hes1*<sup>-/-</sup> progenitors followed an apoptotic fate. The overproduction of neurons in the early *Hes1*<sup>-/-</sup> brains may reflect this premature and immediate generation of neurons as well as a net increase in the number of neuronal progenitor cells.

Taken together, we conclude that *Hes1* is important for maintaining the self-renewing ability of progenitors and for repressing the commitment of multipotent progenitor cells to a neuronal fate, which is critical for the correct number of neurons to be produced and for the establishment of normal neuronal function. **(Authors' abstract)**

**Keywords:** *Biology, Basic helix-loop-helix (bHLH) transcription factor, Neuronal commitment, Multipotent progenitor cell, Neurosphere assay, Apoptosis*

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JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 1, 283-293  
2000 January,  
(Filipiniana Analytics)  
NP

0047

**Biodiversity and status of butterflies in the vicinity of Mountain View College, Mt. Nebo, Valencia City**  
*Sumagaysay, Charity Joy B., Sumagaysay, Ja*

To establish a local data base on butterfly composition and richness, biodiversity of species were determined at the Agriculture Garden, Balambangan Area, Hydro II Mini-forest and Malingon Mini-forest sites of Mountain View College using 40 m line transect sampling. BIOPRO software version 2 was used in the analyses. Survey showed 49 species, 33 genera, and 5 families of butterflies. One species (2.0%) was very common, 22 species (44.9%) were common, 10 species (20.4%) were rare, and 16 species (32.7%) were undetermined. From highest to lowest, diversity indices were Malingon Mini-forest ( $H=1.519$ ), Hydro 2 Mini-forest ( $H=1.415$ ), Agriculture Garden ( $H=1.176$ ), and Balambangan Area ( $H=1.146$ ). Bray-Curtis analysis revealed 2 clusters of habitats. Cluster 1 (81% similarity) at Malingon and Hydro II Mini-forests had dense trees, river systems, and nectar sources which probably favoured the presence of rare and endemic species. Cluster II (73% similarity) at Agriculture Garden and Balambangan Area had human settlements, sparse tree distribution and inhabited by the common species. These results suggest that the highest diversity which includes rare and endemic 143 species could be found in dense forest habitat with presence of water sources and minimal human disturbance. Continued monitoring will establish population and species richness trends and inform ecological measures to preserve endemic and rare species. **(Author's abstract)**

**Keywords:** *Biology, Biodiversity, Butterflies, Lepidoptera*

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Asian Journal of Biodiversity, Volume No. 3 Issue No. 1, 142-155  
2012,  
(Filipiniana Analytics)  
NP

0048

### **Biodiversity assessment of Mt. Banahaw de Dolores, Philippines**

*Faller, Wilfredo C. , Beltran, Francisco N. , Garcia, Ronald O. , Gascon, Cecilia N., Agudilla, Mary An*

A study was conducted to assess the diversity of biological communities at Mt. Banahaw de Dolores in Sitio Kinabuhayan, Sta Lucia, Dolores, Quezon; the area was characterized by identifying the forest trees present, species richness and diversity, and dominance. This was after a 5 year moratorium visitation in the national park. The forest inventory used the quadrat sampling method. Wildlife inventory and insect collection were conducted within 700 masl to the peak of Mt. Banahaw de Dolores. Result revealed a total of 455 trees belonging to 92 species and representing 37 families. A total of 16 families of birds represented by 30 species, 5 species of bats, 3 species of amphibians and 2 reptiles were recorded. Similarly, a total of 285 insects representating more than 104 families and 17 orders were identified. Result also showed high values for Shannon-Weiner index ( $H$ ) and species richness ( $d$ ). Species were evenly distributed among areas sampled as reflected by high values of Evenness index. These values indicate high species variation and diversity. **(Author's abstract)**

**Keywords:** *Biology, Mt. Banahaw de Dolores, Biodiversity, Philippines, Species richness, Shannon-Weiner index*

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Asian Journal of Biodiversity, Volume No. 4 Issue No. 1, 23-45  
2013,  
(Filipiniana Analytics)  
NP

0049

## **Biodiversity conservation and sustainable development in Mindanao Protected Areas, Philippines**

*Bacud, Donnie C. , Mirasol, Joy M. , Mirasol, Jr., Fe*

The paper examines the Protected Area Management Systems (PAMS) on Biodiversity Conservation and Sustainable Development (BCSD) of 28 protected areas (PAs) in Mindanao, Philippines, focusing on the contexts, inputs, processes and outcomes. Of the nineteen variables, eight were found to be significantly correlated to BCSD of the PAs. Path analysis was used to determine direct, indirect and net effects of the variables to BCSD. The study concluded that placement of optimal PA staffing and resource management implementation are both crucial in achieving BCSD. It necessitates critical and positive collaboration with Protected Area Management Board (PAMB), resource generation contributing to the operation of the PA and community participation in management. The longer the PA under protection, the better is its contribution to BCSD. Policy recommendations were formulated in the areas of institutional, economic, technical, community participation and PAMB operations. **(Author's abstract)**

**Keywords:** *Biology, Biodiversity conservation, Sustainable development, Protected areas, Path analysis*

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Asian Journal of Biodiversity, Volume No. 4 Issue No. 1, 204-222  
2013,  
(Filipiniana Analytics)  
NP

0050

## **Biophysiological profile and morphogenesis of Philippine wild strain of *Ganoderma lucidum***

*Magday, Jr., J*

*Ganoderma lucidum* is a white rot basidiomycete that grows on logs. Taking it as source of novel mycochemicals, this study was undertaken to assess the growth performance of *G. lucidum* using different indigenous culture media and different and altered physical factors such as pH, aeration, and illumination and temperature conditions. Similarly, the optimum rice straw substrate combination was also evaluated. Results from the study revealed that after five days of incubation, coconut water gelatin with pH of 6.0, grown on room temperature under sealed and lighted condition, supported the luxuriant mycelial growth of *G. lucidum*. On the other hand, rice straw and saw dust combination of 70-30 had the shortest incubation period of 17.33 days prior fructification. The basidiospores showed a typical type of germination in which the sporoderm produced a single germ tube, elongated, septated into a hypha, and branched to become monokaryotic primary mycelia. Mycelial coat hardening, primordial initiation, antler-like formation and basidiocarp maturation, and spore liberation were observed as the sequence of fruit body development. **(Author's abstract)**

**Keywords:** *Biology, Basidiospore germination, Cultivation phases, Ganoderma lucidum, Mycelia growth, Wild nutraceutical mushrooms*

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QSU Research Journal, Volume No. 3 Issue No. 1, 53-64  
2014,  
(Filipiniana Analytics)  
NP

0051

**Birds of Malagos watershed, Southeastern Philippines**  
*del Rosario, Bernadette I. , Ibanez, Jayson C. , Alviola, Geonyzl L., Otadoy, Juli*

Mindanao is considered one of the richest islands in the Philippines, due to high avifaunal biodiversity. Birds play a vital role in determining the condition of certain areas. The study is a morphological assessment of birds in Malagos watershed, Baguio District, Davao City. It sought to identify and classify the birds species; determine the distribution and compare the taxonomic listing of birds with previous avian surveys in the area. Using point count and mist netting effort, 54 species were identified belonging to 27 families. Three (3) new families were added to the list of previous studies. It included twelve Philippine endemic species, seven Mindanao endemic species, 32 resident species and four species of birds assessed as vulnerable and endangered. The area was also considered disturbed because most of the observed birds were usually found in open and cultivated areas. A comparative study of three other avian surveys showed a steady increase in the population from 1994 to 2002 but a decline in the number of avian species was observed in the present study, a negative trend which is associated with habitat destruction and anthropogenic activities. **(Author's abstract)**

**Keywords:** *Biology, Biodiversity, Birds, Malagos watershed, Avifaunal*

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Asian Journal of Biodiversity, Volume No. 1 Issue No. 1, 36-48  
2010,  
(Filipiniana Analytics)  
NP

**0052**

**Changes in bacterial diversity in the rumen of cattle fed ripe acacia [*Samanea saman*  
(Jacq.) Merr.] Pods**

*Angeles, Amado A., Torres, Angelique D. , Raquipo, Jemimah Micah*

To determine the effect of Acacia pods meal (APM) on the rumen bacterial diversity, three fistulated cattle were fed at 3% of BW with Napier, Napier-rice bran-copra meal mix (RBC) and Napier-APM following a 3 x 3 Latin square design. Isolated 16S rDNA from the rumen were sequenced and analyzed *in silico*. Growth performance of cattle was also evaluated using 18 heifers divided into three groups and fed with 70% Napier grass and 30% of the following treatments as concentrate portion: 30% RBC, 15% RBC:15% APM and 30% APM. Secondary metabolites extracted from APM were qualitatively assayed by paper chromatography (PC) and thin-layer chromatography (TLC). Tannin content was determined spectrophotometrically. Bacterial diversity analysis showed that feeding APM resulted in the proliferation of tannin-resistant bacterium *S. ruminantium* and loss of cellulolytic bacteria *A. ruminis*. Feeding APM in growing heifers reduced average daily gain and feed conversion ratio but not average daily feed intake. Hot water extract contained hydrolyzable tannins as determined by PC. TLC of *n*-hexane extract did not show secondary compounds. Quantitative analysis showed 16.42% tannins in APM. The study showed that reduction in growth performance of heifers is related to tannins in APM that could have direct bioactivity against important bacteria in the rumen. **(Author's abstract)**

**Keywords:** *Biology, Acacia pods, Bacterial diversity, Growing heifers, Secondary compounds, Tannins*

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Philippine Journal of Veterinary and Animal Sciences, Volume No. 39 Issue No. 1, 11-20  
2013,  
(Filipiniana Analytics)  
NP

### Comparison of different osmolarities and sugar-salt solutions for hypo-osmotic swelling test of frozen-thawed water buffalos permatozoa

*Suba, Devon P. , Duran, Peregrino G. , Mallari, Rachele P. , Duran, Danilda H., Abella, Evaristo A. , Cruz, Libertado*

Hypo-osmotic swelling test (HOST) is a method of assessing the functional integrity of sperm plasma membrane which in turn was claimed as indicator of sperm fertility. Standard protocol of HOST has been established indifferent species but not in buffaloes. Thus, the current study was conducted to establish the HOST assay for buffalo frozen-thawed sperm cells. Frozen-thawed sperm cells were incubated indifferent osmolalities (0, 50,100, 150, 200, 250, and 300 mOsm) of sodium citrate-fructose solution to assess sperm reaction. Then, the effectiveness of sucrose vs. fructose was compared as sugar component of the HOST solution. Results showed higher( $P<0.05$ )number of HOS positive (+) spermatozoa in 150 mOsm compared to 0, 250 and 300 mOsm/L though no significant difference was observed with 50, 100, and 200 mOsm/L. Sucrose-and fructose-containing solutions are both effective in enhancing swelling among treated spermatozoa. The results demonstrated that 150 mOsm is the efficient osmolality to effect optimum reaction of frozen-thawed buffalo spermatozoaand that either sucrose or fructose could be used for HOST solution to assess the functional membrane integrity of buffalo sperm cells.

**(Author's abstract)**

**Keywords:** *Fructose, Host, Biology, Plasma membrane, Spermatozoa, Sucrose*

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Philippine Journal of Veterinary and Animal Sciences, Volume No. 40 Issue No. 2, 97-108  
2014,  
(Filipiniana Analytics)  
NP

### Cyanobacterial diversity from mangrove sediment of South East Coast of India

*Sakthivel, Kollimalai, Kathiresan, Kanda*

Cyanobacterial diversity was studied in three different mangrove environments of Pichavaram (Lat.11°27' N; Long. 79°47' E), Porto Novo (Lat. 11°29' N; Long. 79°47' E), and Mudasal Odai (Lat. 11°28' N and Long. 79°46' E) in the southeast coast of India. Totally 68 species belonging to 28 genera and 10 families were recorded. The number of species was higher in Pichavaram than the other two-study areas. In Pichavaram, 63 species, 28 genera and 10 families were isolated. In Porto Novo, 53 species, 26 genera and 10 families were obtained. In Mudasal Odai, 40 species, 20 genera and 9 families were registered. Totally 58 species of non-heterocystous and 10 species of heterocystous cyanobacteria were observed. The family Oscillatoriaceae was dominant, represented with 34 species (75.8%). Out of 28 genera, Oscillatoria (14 spp.) was the dominant. Thirteen species were found common to all the three mangrove areas. Dominant species were four in Pichavaram, six in Porto Novo and four in Mudasal Odai. Abundant species were seven in Pichavaram, 11 in Porto Novo and five in Mudasal Odai. Co-abundant species were 18 in all the study areas. **(Author's abstract)**

**Keywords:** *Biology, Cyanobacteria, Diversity, Mangroves, Sediment, Benthic forms*

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Asian Journal of Biodiversity, Volume No. 4 Issue No. 1, 190-203  
2013,  
(Filipiniana Analytics)  
NP

## **Developmental changes in the neurotransmitter regulation of correlated spontaneous retinal activity**

*Wong, Rachel O. L. , Miller, Ethan D. , Myhr, Karen L. , Wong,*

Synchronized spontaneous rhythmic activity is a feature common to many parts of the developing nervous system. In the early visual system, before vision, developing circuits in the retina generate synchronized patterns of bursting activity that contain information useful for patterning connections between retinal ganglion cells and their central targets. However, how developing retinal circuits generate and regulate these spontaneous activity patterns is still incompletely understood. Here we show that in developing retinal circuits, the nature of excitatory neurotransmission driving correlated bursting activity in ganglion cells is not fixed but undergoes a developmental shift from cholinergic to glutamatergic transmission. In addition, we show that this shift occurs as presynaptic glutamatergic bipolar cells form functional connections onto the ganglion cells, implicating the role of bipolar cells in providing endogenous drive to bursting activity later in development. This transition coincides with the period when subsets of ganglion cells (On and Off cells) develop distinct activity patterns that are thought to underlie the refinement of their connectivity with their central targets. Here, our results suggest that the differences in activity patterns of On and Off ganglion cells may be conferred by differential synaptic drive from On and Off bipolar cells, respectively. Taken together, our results suggest that the regulation of patterned spontaneous activity by neurotransmitters undergoes systematic change as new cellular elements are added to developing circuits and also that these new elements can help specify distinct activity patterns appropriate for shaping connectivity patterns at later ages. **(Author's abstract)**

**Keywords:** *Biology, Retinal development, Ferret retina, Spontaneous activity, Retinal waves, Activity dependent, APB, Glutamate*

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JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 1, 351.360  
2000 January,  
(Filipiniana Analytics)  
NP

## **Distribution of anuran species in Loboc Watershed of Bohol Island, Philippines.**

*Jose, Re*

The Philippines is rich in biodiversity and Bohol Island is among the many places in the country requiring attention for conservation efforts. For this reason, a survey of anurans was conducted in Loboc Watershed, the forest reserve in the island. Different sampling techniques were used. Three transect lines were established and were positioned perpendicular to water bodies parallel to the existing trails. A 10x10 meter quadrat size was established along each transect line. A visual encounter technique was used along each established quadrat and identification was done using a field guide. Fifteen species of anurans were recorded. One species belongs to families Bufonidae (*Bufo marinus*) and Megophryidae (*Megophryis stejnegeri*); two to family Microhylidae (*Kalophrynus pleurostigma* and *Kaluola picta*); six family Ranidae (*Fejervarya cancrivora*, *Limnonectes leytensis*, *Limnonectes magnus*, *Platymantis guentheri*, *Platymantis corrugatus*, and *Rana grandocula*) and five Rhacophoridae (*Nyctixalus spinosus*, *Polypedates leucomystax leucomystax*, *Polypedates leucomystax quadrilineatus*, *Rhacophorus appendiculatus* and *Rhacophorus pardalis*). The disturbed nature of the area still recorded endemic and threatened species. This suggests that forests and critical habitats in the area need to be protected and conserved. **(Author's abstract)**

**Keywords:** *Biology, anuran species, Bufonidae, Megophryidae, Microhylidae, Ranidae, Rhacophoridae*

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Asian Journal of Biodiversity, Volume No. 3 Issue No. 1, 126-141  
2012,  
(Filipiniana Analytics)  
NP

0057

**Diversity and status of butterflies across vegetation types of Mt. Hamiguitan, Davao Oriental, Philippines**  
*Treadaway, Colin G. , Mohagan, A*

An inventory was conducted to determine the diversity and status of butterflies of Mt. Hamiguitan Wildlife Sanctuary, Davao Oriental, using quadrat method in five vegetation types, namely; agroecosystem (10-400 masl), dipterocarp (500-900 masl), montane (900-1400 masl), mossy (1400-1500 masl) and pygmy (1500-1675 masl). Two 20m x 20m plots were established per vegetation type. These inventory techniques revealed 142 species of butterflies plus one new subspecies described and illustrated. Diversity assessment using Shannon-Weiner index showed high level (4.1) in the Montane forest as compared to other vegetation types. Bray-Curtis similarity index showed low species similarity in pygmy, mossy and agro-montane forests (< 40 %). Furthermore, this study revealed 7 possible new species, 44 endemics: 2 eastern Mindanao endemic (very rare), 4 Mt. Hamiguitan endemic (very rare), 16 Mindanao endemic and 22 Philippine endemic. Seven species are new records in Mindanao. Mt. Hamiguitan Wildlife Sanctuary is the home of diverse and endemic butterfly species. **(Author's abstract)**

**Keywords:** *Biology, Butterflies, Species richness, Pygmy vegetation types, Mt. Hamiguitan*

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Asian Journal of Biodiversity, Volume No. 1 Issue No. 1, 1-24  
2010,  
(Filipiniana Analytics)  
NP

0058

**Diversity and status of butterflies in Maitum Village, Tandag, Surigao del Sur, Philippines**  
*Ramirez, Ray Kristoffer Casio, Mohagan, Al*

Diversity and assessment of butterflies of Maitum, Tandag, Surigao del Sur were conducted to provide information on the species composition, diversity and status of butterflies in dipterocarp forest and agro ecosystems. A total of 104 species of butterflies belonging to 68 genera and 5 families were documented. Species richness of the butterflies was higher in the dipterocarp forest (89) than the agro ecosystem (51). The dipterocarp forest had greater mean individual (4.173) than the agro ecosystem (3.712). The diversity level was fair in dipterocarp forest ( $H' = 1.638$ ) as compared to the agroecosystem area with low level of diversity ( $H' = 1.369$ ). Dendrogram for similarity of species composition showed a fairly low species between the two study stations, this suggests the importance of the two habitats for the conservation of butterflies in Maitum Village, Tandag, Surigao del Sur. Assessment of status showed that 57 species (54.8 %), were common 16 (15. 3%) were rare, 12 (11.5%) were rare Philippine endemics, 6 (5.7%) 75 were common Philippine endemics, 2 (1.9%) common Mindanao endemics, 1 (.96%) rare Mindanao endemic, 1 (.96%) very rare eastern Mindanao endemic, and 9 (8.6%) were undetermined. These results suggest that



Maitum, Tandag, Surigao del Sur is the home of 104 species of butterflies and the dipterocarp forest is the home of diverse and endemic species of butterflies for conservation. **(Author's abstract)**

**Keywords:** *Biology, Diversity, Status, Conservation, Butterflies, Maitum Village*

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Asian Journal of Biodiversity, Volume No. 3 Issue No. 1, 74-112  
2012,  
(Filipiniana Analytics)  
NP

0059

### **Diversity and status of odonata across vegetation types in Mt. Hamiguitan Wildlife Sanctuary, Davao Oriental**

*Mohagan, Alma B. , Villanueva, Joseph*

Diversity and status of odonata in Mt. Hamiguitan Wildlife Sanctuary was determined after a year of sampling in five vegetation types: agroecosystem (400 masl), dipterocarp (900 masl), montane (1200 masl), mossy (1400 masl) and pygmy (1600 masl) using 2-Km transect walk sampling to provide information on species richness trend and ecological status of odonata. Study showed 31 species with 94% endemism for damselflies and 33.3% for dragonflies. Species richness and endemism were low in agroecosystem  $H'=0.631$  and 1 endemic; high and increasing in the dipterocarp  $H'=2.298$  and 4 endemic to dense montane forest with  $H'=3.056$  and 18 endemic; decreasing in mossy  $H'=2.036$  and pygmy  $H'=1.846$ . The effects of disturbance on diversity showed highest in agroecosystem ( $d=83\%$ ), mossy and pygmy had intermediate value  $d=27\%$  and  $d=24\%$ . Low disturbance was observed in Montane  $d=10\%$ , dipterocarp  $d=18.5\%$ . Bray-curtis similarity index for species composition showed four discernible clusters of habitats. Results suggest that odonata has preference for dense forest, undisturbed vegetation, optimum temperature and presence of aquatic habitat. **(Author's abstract)**

**Keywords:** *Biology, Status of odonata, Dragonflies, Damselflies, Mt. Hamiguitan Wildlife Sanctuary*

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Asian Journal of Biodiversity, Volume No. 1 Issue No. 1, 25-35  
2010,  
(Filipiniana Analytics)  
NP

0060

### **Diversity of butterflies in the selected key biodiversity areas of Mindanao, Philippines at the eminent climate change**

*Tambuli, Antonio E. , Mohagan, Dave P. , Mohagan, A*

Butterflies are important for pollination of many farm crops and forest species, biomass converter, agent of controlling weeds, source of drugs and genetic material for the development of new breeds. The study provided information on the species level-diversity, status and similarity of butterfly species composition in 4 selected Key Biodiversity areas of Mindanao at the eminent climate change. Data can be used for species monitoring, distribution, biogeography and conservation of butterflies in Mindanao, Philippines as climate change progresses. Belt transect, time constraint and transect walk sampling were employed in the study from February 2010 to April 2011. We captured a total of 247 identified butterfly species. Species diversity level using Shannon-Weiner index showed fair

level in most of the sampling sites. Highest species richness was observed in Mt. Kitanglad  $H' = 1.959$  (148 species), followed by Mt. Apo  $H' = 1.755$  (104 species), Mt. Timpoong  $H' = 1.579$  (79 species) lowest in Mt. Musuan  $H' =$ . Mt. Apo had the highest species endemism (42 Or 42 %). Endemism is higher in forest habitats in higher elevations. Bray- Curtis analysis showed that all study sites are unique habitats for butterflies. The results suggest further monitoring to carefully analyze the diversity and status of butterflies. **(Author's abstract)**

**Keywords:** *Biology, Butterfly, Diversity, Key biodiversity areas*

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2011,  
(Filipiniana Analytics)  
NP

0061

### **Diversity pattern of butterfly communities (Lepidoptera) at Mangrol Region of Kathiawar Peninsula, India**

*Bhadja, Poonam , Vaghela, Ashokkumar, Trivedi, Va*

Butterflies (Lepidoptera) being potent pollinators and ecological indicators are examined in the present study. The diversity of butterfly communities of the Kathiawar Peninsula (*tropical and subtropical region*) was studied at Mangrol region of Kathiawar Peninsula. The pollard walk method was followed for observing butterflies. A total 348 specimens belonging to 27 species, 21 genera and 4 families were recorded in the study sites. Among the butterfly species maximum populations were recorded of Family Nymphalidae (55.56%) followed by Pieridae (22.22%), Papilionidae (14.81%) and Lycaenidae (7.41%). Evaluation of quantitative and qualitative community structure in relation to four study sites of the Butterfly species density (29.00) and relative density (26.96) were highest in sampling Site Mangrol where as species diversity index ( $H'$ ) were also highest (04.14). **(Author's abstract)**

**Keywords:** *Biology, Butterfly diversity, Community, Habitat type, Kathiawar Peninsula, Tropical region, Sub-tropical region*

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Asian Journal of Biodiversity, Volume No. 4 Issue No. 1, 99-118  
2013,  
(Filipiniana Analytics)  
NP

0062

### **Effect of probiotic feeding on milk yield and components of crossbred dairy goats**

*Rayos, Antonio A. , Elegado, Francisco B. , Vega, Renato S.A. , Supangco, Enrico S. , Salvedia, Cla*

A feeding trial was conducted to determine the effect of live probiotic supplements on milk yield and components of crossbred dairy goats. Sixteen lactating crossbred Anglo-Nubian x Saanen dairy goats in early to mid-lactation, 35-40 kg body weight, were randomly assigned into four treatments (four animals per treatments) fed daily with 6 ml of  $5 \times 10^9$  cfu/ml probiotic supplements for 9 weeks: Treatment 1- control (w/o probiotics); Treatment 2 - lactic acid bacteria (*Pediococcus acidilactici* 3G3 and *Lactobacillus plantarum* BS), Treatment 3 - *Saccharomyces cerevisiae* 2030; and Treatment 4 - multi-strain probiotic (*P. acidilactici* 3G3, *L. plantarum* BS, and *S. cerevisiae* 2030). Daily rations for each of the experimental animals consisted of 1 kg concentrate mixed-feed and

4 kg fresh *Pennisetum purpureum* and *Gliciridia sepium* leaves. Results of the study revealed that the milk yield of crossbred lactating goats were not significantly ( $P \leq 0.05$ ) affected by probiotic feeding but induced a total net income increase of PHP8.82 per animal/day compared to the control group. Milk components such as total milk fat yield, solid-non-fat, and lactose were significantly affected ( $P \leq 0.05$ ) by probiotic feeding while total protein yield remained unchanged throughout the experimental period. The findings suggest that live probiotic feeding could have a significant role in improving milk yield and components of crossbred lactating dairy goats. **(Author's abstract)**

**Keywords:** *Biology, Dairy goat, Lactobacillus, Milk yield, Probiotic, Saccharomyces*

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Philippine Journal of Veterinary and Animal Sciences, Volume No. 41 Issue No. 1, 21-30  
2015,  
(Filipiniana Analytics)  
NP

0063

### **Evidence that wallerian degeneration and localized axon degeneration induced by local neurotrophin deprivation do not involve caspases**

***Srinivasan, Anu , Siman, Robert , Archer, Fabienne , Weil, Miguel , Finn, John T., Raff, Marti***

The selective degeneration of an axon, without the death of the parent neuron, can occur in response to injury, in a variety of metabolic, toxic, and inflammatory disorders, and during normal development. Recent evidence suggests that some forms of axon degeneration involve an active and regulated program of self-destruction rather than a passive “wasting away” and in this respect and others resemble apoptosis. Here we investigate whether selective axon degeneration depends on some of the molecular machinery that mediates apoptosis, namely, the caspase family of cysteine proteases. We focus on two models of selective axon degeneration: Wallerian degeneration of transected axons and localized axon degeneration induced by local deprivation of neurotrophin. We show that caspase-3 is not activated in the axon during either form of degeneration, although it is activated in the dying cell body of the same neurons. Moreover, caspase inhibitors do not inhibit or retard either form of axon degeneration, although they inhibit apoptosis of the same neurons. Finally, we cannot detect cleaved substrates of caspase-3 and its close relatives immunocytochemically or caspase activity biochemically in axons undergoing Wallerian degeneration. Our results suggest that a neuron contains at least two molecularly distinct self-destruction programs, one for caspase-dependent apoptosis and another for selective axon degeneration. **(Author's abstract)**

**Keywords:** *Biology, Neuron, Apoptosis, Nerve growth factor, Optic nerve, Sciatic nerve, Retina, Dorsal root ganglia*

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JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 4, 1333-1341  
2000 February,  
(Filipiniana Analytics)  
NP

0064

### **Fast network oscillations in the newborn rat hippocampus *in vitro***

***Kaila, Kai , Rauvala, Heikki , Lauri, Sari E. , Lamsa, Karri , Palva, J. Matias, Taira,***

Spontaneous neural activity is crucial for the formation of the intricate patterns of cortical connectivity during development. In particular, temporal correlations in presynaptic and postsynaptic activity have been hypothesized to be a critical determinant in the selection of neurons that are to become wired together. To date, however, temporally

correlated activity in the neonatal brain has been believed to take place with a precision of tens of milliseconds to seconds.

Here we describe a novel type of a fast network oscillation associated with millisecond synchronization of pyramidal cell firing in newborn rat hippocampus *in vitro*. Individual pyramidal neurons fired mainly at lower gamma frequencies (20–40 Hz) but were synchronized into a high-frequency (100–400 Hz) population oscillation that was reflected in field potential spikes and intracellular AMPA–kainate receptor-mediated currents. The high-frequency population oscillation was patterned by a gamma-frequency modulatory oscillation. The gamma modulation was imposed by GABAergic currents, which exerted an inhibitory action on pyramidal neurons. Patterned activity based on GABAergic inhibition and glutamatergic excitation thus occurs already in newborn hippocampus. The network oscillations described here may be a mechanism for selective coincidence detection with a millisecond range temporal precision to shape the patterns of connectivity within the emerging hippocampal synaptic circuitry. **(Author's abstract)**

**Keywords:** *Biology, Network oscillations, Synchronization, Neonate, Coincidence detection, GABAA, Inhibition, Plasticity*

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JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 3, 1170-1178  
2000 February,  
(Filipiniana Analytics)  
NP

0065

## **Fungi of Taal Volcano Protected Landscape, Southern Luzon, Philippines**

*Tadiosa, Edwin R., Briones, Romme*

Fungal species collection was conducted at Taal Volcano Protected Landscape (TVPL) at Talisay area, Batangas, Southern Luzon, Philippines (13.662550N, 121.247970E) from the months of March to August 2012. TVPL has an elevation of 600 meters above sea level. This Protected Area is being considered as one of the most diverse forest ecosystems in CALABARZON region, thereby indicating the need for conservation and protection. This paper aims to document the fungal species in the area. Using transect line (TL) method, four transect lines were established from the baseline (200 masl) toward the peak (600 masl) with 20 m x 30 m quadrat sampling. All in all, 12 quadrats were laid out. The fungal species within the quadrats along the TLs were identified and recorded. Simpson's Index was the Diversity indices used as parameters in assessing fungal species in TVPL Talisay. Opportunistic sampling method was also used during the survey. Field sampling of fungi has resulted to the collection and identification of 75 species belonging to 36 genera and 23 families. There is relatively high fungal species diversity in Taal Volcano Protected Landscape, Talisay as compared with those in other ecosystems in the region. This is the first report of fungi present in TVPL. **(Author's abstract)**

**Keywords:** *Biology, Biodiversity, Field survey, Forest ecosystem, Fungi, Taal Volcano Protected Landscape*

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2013,  
(Filipiniana Analytics)  
NP

0066

## Generating sexually differentiated vocal patterns: laryngeal nerve and EMG recordings from vocalizing male and female african clawed frogs (*Xenopus laevis*)

*Kelley, Darcy B. , Yamaguchi,*

Male and female African clawed frogs (*Xenopus laevis*) produce sexually dimorphic vocalizations; for males these include advertisement, amplexant, and growling calls, whereas female calls include ticking. Previous studies have shown that the vocal organ, the larynx, of the sexes differs in physiological properties that parallel vocal differences. However, it was not clear whether these characteristics are sufficient to explain sex differences in vocal behavior. To examine the contribution of the CNS to generating vocal patterns, we developed a preparation in which both laryngeal nerve activity and electromyograms can be recorded from awake, vocalizing frogs. Recordings reveal that the CNS of the two sexes produces patterned activity that closely matches each vocalization whereas the larynx faithfully translates nerve activity into sound. Thus, the CNS is the source of sexually differentiated vocalizations in *Xenopus laevis*. Furthermore, detailed analyses of compound action potentials recorded from the nerve lead us to hypothesize that neuronal activity underlying different male call types is distinct; some calls are likely to be generated by synchronous firing of motoneuron populations of either constant size or progressively larger sizes, whereas others are generated by asynchronous activity of motoneurons, a pattern shared with vocal production in females. We suggest that these distinct neuronal activity patterns in males may be subserved by two populations of motor units in males that can be distinguished by the strength of the neuromuscular synapse. **(Author's abstract)**

**Keywords:** *Biology, Vocalizations, Nerve recordings, Electromyograms, Xenopus laevis, Sex differences, Compound action potentials*

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JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 4, 1559-1567  
2000 February,  
(Filipiniana Analytics)  
NP

0067

## Genetic analysis of the Seagrass *Halodule* in Central Visayas, Philippines

*Calumpong, Hilconida P. , Wagey, Bi*

Genetic variation of seagrass species *H. uninervis* and *H. pinifolia* with varying leaf width, from different sites, density and exposure in the Central Visayas were assessed using plastid *rbcL* marker specific for *Halodule*. The genetic structures of the *rbcL* sequences analyzed from 83 specimens of *Halodule uninervis* and *H. pinifolia* were 671 base-pairs (bp) long (with a difference of 2 base pairs (bp) substitutes of A in *uninervis* to C and G in *pinifolia*). All specimens of *Halodule* from three different sites in Central Visayas were clustered only into clades: *H. pinifolia* and *H. uninervis*, maintaining that despite significant morphological variation in leaf width due to different sites, density and exposure, the two are still separate species. **(Author's abstract)**

**Keywords:** *Biology, Seagrass, DNA, rbcL marker*

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Asian Journal of Biodiversity, Volume No. 4 Issue No. 1, 223-237  
2013,  
(Filipiniana Analytics)  
NP

0068

## **Growth response of Bago (*Gnetum gnemon*) cuttings to various rooting agents** *Bullecer, Gladys Hope C. , Bullecer, Rum*

Domestication of forest-based floral resources like *Gnetum gnemon*, with young leaves and immature flowers are popularly eaten, promote ex-situ conservation of the species. *G. gnemon* is an excellent source of Vitamins A and C. However, the species remain largely forest-based and unresponsive to natural cutting propagation. The seeds remain dormant for 5 months to 1 year. This study determined the growth response of bago cuttings soaked for an hour in the following rooting agents : ANAA (1 tbsp/li of water); IBA (500 ppm); pure coconut water and plain tap water. Results showed T-2 (ANAA) and T4 seedlings (control) had the highest survival of 75% and 67% respectively. On leaf production, T4 (control) was significantly higher than the other treatments. Treatment 1 (IBA) produced the highest average number of roots. The study concluded that bago or *Gnetum gnemon* can be successfully propagated through cuttings with the use of rooting enhancers. However, care should be taken in the selection of the cuttings. Highest survival was observed with the greenish cuttings containing only a few brownish pigmentation and containing two nodes. Mortality was higher in the more mature or too young cuttings and those with one node only. **(Author's abstract)**

**Keywords:** *Biology, Growth, Gnetum gnemon, Rooting agents , Cuttings*

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2011,  
(Filipiniana Analytics)  
NP

0069

## **Identification of residues within GABAA receptor $\alpha$ Subunits that mediate specific assembly with receptor $\beta$ Subunits**

*Hosie, Alistair , Gorrie, George H. , Kittler, Josef T. , Connolly, Christopher N. , Taylor, Pamela M., Smart, Trevor G. , Moss, Stephe*

GABA<sub>A</sub> receptors can be constructed from a range of differing subunit isoforms:  $\alpha$ ,  $\beta$ ,  $\gamma$ ,  $\delta$ , and  $\epsilon$ . Expression studies have revealed that production of GABA-gated channels is achieved after coexpression of  $\alpha$  and  $\beta$  subunits. The expression of a  $\gamma$  subunit isoform is essential to confer benzodiazepine sensitivity on the expressed receptor. However, how the specificity of subunit interactions is controlled during receptor assembly remains unknown. Here we demonstrate that residues 58–67 within  $\alpha$  subunit isoforms are important in the assembly of receptors comprised of  $\alpha\beta$  and  $\alpha\beta\gamma$  subunits. Deletion of these residues from the  $\alpha 1$  or  $\alpha 6$  subunits results in retention of either  $\alpha$  subunit isoform in the endoplasmic reticulum on coexpression with the  $\beta 3$ , or  $\beta 3$  and  $\gamma 2$  subunits. Immunoprecipitation revealed that residues 58–67 mediated oligomerization of the  $\alpha 1$  and  $\beta 3$  subunits, but were without affect on the production of  $\alpha/\gamma$  complexes. Within this domain, glutamine 67 was of central importance in mediating the production of functional  $\alpha 1\beta 3$  receptors. Mutation of this residue resulted in a drastic decrease in the cell surface expression of  $\alpha 1\beta 3$  receptors and the resulting expression of  $\beta 3$  homomers. Sucrose density gradient centrifugation revealed that this residue was important for the production of a 9S  $\alpha 1\beta 3$  complex representing functional GABAA receptors.

Therefore, our studies detail residues that specify GABA<sub>A</sub> receptor  $\alpha\beta$  subunit interactions. This domain, which is conserved in all  $\alpha$  subunit isoforms, will therefore play a critical role in the assembly of GABA<sub>A</sub> receptors composed of  $\alpha\beta$  and  $\alpha\beta\gamma$  subunits. **(Author's abstract)**

**Keywords:** *Biology, GABAA-receptor, Assembly, Cell surface expression, N-terminal, Oligomerization,  $\alpha$  subunit*

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0070

## **The identity and morphology of the three species of *Drynaria* (Polypodiaceae) in Bukidnon, Philippines**

*Amoroso, Victor B. , Lubos, Les*

The objective of the study was to compare the morpho-anatomical characters of the species of *Drynaria* found in Bukidnon, Philippines. The species identified were *Drynaria quercifolia* (Linn) Sm., *D. sparsisora* (Desv.) and Moore, *D. rigidula* (Sw.) Bedd. Morpho-anatomical comparisons of the three species of *Drynaria* showed some similarities such as long creeping and branched rhizome, mature fertile fronds green and sterile fronds brown, leathery and with shiny upper surface and exindusiate sori. On the other hand, differences were observed in the plant height, type of lamina, presence or absence of groove in the stipe, costa and rachis, length and width, margin, fertile and sterile fronds attachment to the rhizome, base, apex, paleae, hair shape and sori arrangement. Anatomically, the five species also differed in the attachment of paleae to the rhizomes, length, width, number and shape of vascular bundles in the stipe, costa and rachis, presence and absence of hypodermis, type of stomata, length, width, number of subsidiary cells, walls of epidermal cells, the cortical arrangement of the tissues in the costa and midvein of the pinna. Based on their morpho-anatomical differences, a taxonomic key was constructed to identify the three species of *Drynaria*. (**Author's abstract**)

**Keywords:** *Biology, Morphology, Anatomy, Systematic, Drynaria, Bukidnon*

0071

## **Increased spontaneous unit activity and appearance of spontaneous negative potentials in the goldfish tectum during refinement of the optic projection**

*Kolls, Bradley J., Meyer, Ronald*

Spontaneous (not retinally driven) postsynaptic activity was examined during activity-dependent refinement of optic fibers in the goldfish tectum. Unit recordings *in vivo* and *in vitro* demonstrated that spontaneous tectal activity increased to 150% of normal during refinement at 1–2 months after optic nerve crush and subsequently returned to baseline over the next month. This increase was not mimicked by long-term denervation indicating an effect specifically influenced by regenerating fibers. Loss of optic input was also found to induce spontaneous negative potentials (SNPs) rapidly in the tectum. SNPs were negative, monophasic potentials of 70–120 msec duration and –0.15 to –1.5 mV amplitude. SNPs occurred with no apparent periodicity at a frequency of ~0.3–0.6 Hz. Multiple electrode recordings and depth analysis showed that SNPs were localized events occurring in columnar domains of tectum a few hundred micrometers wide. Cross-correlation analysis revealed that SNPs were strongly correlated with local unit bursting, suggesting SNPs are generated by the summed synaptic and spike currents of coactive cells in small regions of the tectum. SNPs were suppressed by a low concentration of APV indicating they were regulated by NMDA receptors. During regeneration, the number and size of SNPs reached a peak during refinement and

subsequently decreased, eventually disappearing. This temporal association with refinement suggests that these patterns of postsynaptic activity may have functional relevance. It is hypothesized that SNPs or the underlying activity that produces them increases the excitability of target cells, allowing the weak, less-convergent input from regenerating axons to drive target groups of cells in the tectum during refinement. **(Author's abstract)**

**Keywords:** *Biology, Goldfish, Retinotectal system, Tectum, Spontaneous activity, Regeneration, Visual system, Postsynaptic activity*

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2000 January,  
(Filipiniana Analytics)  
NP

0072

### **The lack of *Emx2* causes impairment of reelin signaling and defects of neuronal migration in the developing cerebral cortex**

**Gruss, Peter , Pardini, Celia Leonor , Cecchi, Chiara , Muzio, Luca , Mercurio, Sara , Mallamaci, Antonello, Boncinelli, Edo**

Neocorticalgenesis in mice homozygous for an *Emx2* null allele is the topic of this article. The development of both main components of neocortex, primordial plexiform layer derivatives and cortical plate, was analyzed, paying special attention to radial migration of neurons forming the cortical plate. The products of the *Reelin* gene, normally playing a key role in orchestrating radial migration of these neurons, display normal distribution at the beginning of the cortical neuronogenesis but are absent in the neocortical marginal zone of the mutant mice at the time when the cortical plate is laid down. As a consequence, the development of radial glia is impaired, and neurons making up the cortical plate display abnormal migration patterns. In addition, restricted defects along the rostrocaudal and the mediolateral axes are present in the subplate, suggesting an *Emx2*-specific role in priming the proper development of this layer. **(Author's abstract)**

**Keywords:** *Biology, Emx2, Cajal-Retzius cells, Reeler, Radial glia, Subplate*

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JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 3, 1109-1118  
2000 February,  
(Filipiniana Analytics)  
NP

0073

### **The M1 muscarinic agonist CI-1017 facilitates trace eyeblink conditioning in aging rabbits and increases the excitability of CA1 pyramidal neurons**

**Disterhoft, John F. , Welty, Devin , Schwarz, Roy D. , Oh, Matthew , Preston, Alison R. , Weiss,**

The M1 muscarinic agonist CI-1017 was administered intravenously to aging rabbits on a daily basis before and during hippocampally dependent trace eyeblink conditioning sessions. Circulating levels of CI-1017 were significantly related to the drug dose. The drug was found to significantly increase the rate and amount of learning in a dose-dependent manner with no significant effects on the amplitude, area, or latency of conditioned responses. There was no evidence of pseudoconditioning at the highest drug concentration, and the minimally effective dose



produced only mild and temporary hypersalivation as a side effect. CI-1017 (10  $\mu\text{m}$ ) was also found to increase the excitability of CA1 pyramidal neurons recorded from hippocampal slices from young and aging naive rabbits as measured by changes in spike-frequency adaptation and the postburst afterhyperpolarization. These biophysical changes were reversed with either atropine (1  $\mu\text{m}$ ) or pirenzepine (1  $\mu\text{m}$ ). These results suggest that M1 agonists ameliorate age-related learning and memory impairments at least in part by reducing the afterhyperpolarization and spike-frequency adaptation of hippocampal pyramidal neurons and that M1 agonists may be an effective therapy for reducing the cognitive deficits that accompany normal aging and/or Alzheimer's disease. **(Author's abstract)**

**Keywords:** *Biology, Acetylcholine, Afterhyperpolarization, Alzheimers disease, Cholinesterase, Hippocampus, Learning*

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JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 2, 783-790  
2000 January,  
(Filipiniana Analytics)  
NP

0074

### **Macroscopic and microscopic changes in the wound after intradermal closure using buried knot and pulley knot-free patterns following ovariectomy in cats**

*Chupeco, James Patrick M., Flores, Marianne Leila S. , Reyes, Marco*

Two methods of anchoring continuous intradermal suture (buried knot and pulley knot-free patterns) in abdominal skin incisions in cats were compared to determine which method is more cosmetically-acceptable. Nine female cats were subjected to routine ovariectomy with two ventral midline incisions 2 cm apart. The abdominal layer was closed routinely, while the cranial and caudal skin incisions were closed using the continuous intradermal suture pattern anchored alternately with the buried knot or pulley knot-free pattern. The wounds were observed daily and skin biopsy was done at 7, 14 and 21 days post-operation. Aesthetically, the pulley knot-free anchor showed a lesser degree of pus formation and less elevation than buried knot, while the buried knot had less dehiscence than pulley-free anchor. The two methods were found equal in degree of scab formation, hyperemia and scar formation. Microscopically, no differences between the two methods were observed with regards to the presence of hemorrhage, wound gap, inflammation and fibroblastic proliferation. Although there were no significant differences between the two anchor methods, the novel pulley knot-free anchor provides a more adequate wound apposition, especially at the end of the incision than the buried knot. **(Author's abstract)**

**Keywords:** *Biology, Buried knot, Cat, Intradermal suture pattern, pulley knot-free anchor*

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Philippine Journal of Veterinary and Animal Sciences, Volume No. 39 Issue No. 2, 277-286  
2013,  
(Filipiniana Analytics)  
NP

0075

### **Management practices of native chicken (*Gallus gallus domesticus* Linn.) production in Palawan, Philippines**

*Vega, Renato S.A. , De Guia, Anna Pauline O. , Lambio, Angel L. , Lopez, Jr., Roge*

A total of 108 raisers were randomly sampled and interviewed using a structured questionnaire to determine the management practices in the production of native chickens in Palawan. Correlation analysis showed that the number of chickens raised was not influenced by the respondent's socio-demographic profile. However, the number of chickens raised were positively correlated ( $P < 0.05$ ) with duration of raising, feed cost and number of chickens consumed. Results showed that most raised native chickens traditionally in the range and do not provide housing but feed them twice a day with farm products and by-products by broadcasting on the ground. Drinking water is provided once a day in improvised water trough without supplementation. Selection of breeder/replacement stocks and chickens for slaughter/sale is based on body size. Majority provided adequate nests and practice random mating, natural incubation and brooding. While record keeping and vaccination were never done, few respondents practice deworming, disease treatment, ethnoveterinary practices, disinfection and artificial insemination. The average number of eggs laid per clutch was  $10.44 \pm 1.97$  while hatchability was  $76.44\% \pm 13.48$ . The mean number of chicks weaned was  $5.68 \pm 2.06$  with a percent liveability of  $66.89\% \pm 20.20$ . Dead birds were disposed by burying. In addition, chickens produced were primarily for home consumption. **(Author's abstract)**

**Keywords:** *Biology, Native chickens, Palawan, Production practices, Gallus gallus domesticus Linn.*

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2014,  
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NP

0076

### **Mast cells migrate from blood to brain**

*Wilhelm, Marta , Sutherland, Anne K. , Silverman, Ann-Judith, Silver,*

It is well established that mast cells (MCs) occur within the CNS of many species. Furthermore, their numbers can increase rapidly in adults in response to altered physiological conditions. In this study we found that early postpartum rats had significantly more mast cells in the thalamus than virgin controls. Evidence from semithin sections from these females suggested that mast cells were transiting across the medium-sized blood vessels. We hypothesized that the increases in mast cell number were caused by their migration into the neural parenchyma. To this end, we purified rat peritoneal mast cells, labeled them with the vital dyes PKH26 or CellTracker Green, and injected them into host animals. One hour after injection, dye-filled cells, containing either histamine or serotonin (mediators stored in mast cells), were located close to thalamic blood vessels. Injected cells represented ~2–20% of the total mast cell population in this brain region. Scanning confocal microscopy confirmed that the biogenic amine and the vital dye occurred in the same cell. To determine whether the donor mast cells were within the blood–brain barrier, we studied the localization of dye-marked donor cells and either Factor VIII, a component of endothelial basal laminae, or glial fibrillary acidic protein, the intermediate filament found in astrocytes. Serial section reconstructions of confocal images demonstrated that the mast cells were deep to the basal lamina, in nests of glial processes. This is the first demonstration that mast cells can rapidly penetrate brain blood vessels, and this may account for the rapid increases in mast cell populations after physiological manipulations. **(Author's abstract)**

**Keywords:** *Biology, Mast cells, Blood–brain barrier, Hematopoietic system, Basal lamina, GFAP, Cell tracker green, Vital dye, Factor VIII, Cell trafficking*

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2000 January,  
(Filipiniana Analytics)  
NP

## Some medicinal bryophytes species, their ethnobotanical uses, and morphological adaptations in Bukidnon Natural Parks, Philippines: a literature review

*Pabualan, Melanie P. , Sariana, Lalaine G. , Azuelo, And*

Medicinal bryophytes and their morphology features and ethnic uses was examined and documented. Field collections of bryophytes were made through transect walks or floristic survey along the two mountain sites of Bukidnon, namely: Mt. Kalatungan and Mt. Kitanglad. The number of taxa currently determined with medicinal properties was based from the collected species. The species with medicinal uses was generated from a pool of resources, literature review and scientific journals. Description on their morphology characters was made using microscopy examinations. Taxonomic treatment include leaf orientation, stem structure, sporophyte characters and their habit were used to identify into families, genera and species. Species composition between study sites was also compared. Visual habitat as to substrate preference and identification for each species was employed.

Results of the study highlights the difference in the morphological features among species of medicinal bryophytes, their ethnic uses, and adaptations within the forested area. Results showed that Mt. Kitanglad exhibited a total of seventeen (17) species of medicinal bryophytes. Of these, eleven (11) are mosses belonging to seven (7) families in eleven (11) genera and six (6) liverworts belonging to five (5) families in six (6) genera; while Mt. Kalatungan exhibited a total of fourteen (14) species of medicinal bryophytes. Of these, eight (8) are mosses belonging to six (6) families in eight (8) genera and six (6) liverworts belonging to five (5) families in six (6) genera. The moss species with medicinal properties belongs to the genus *Sphagnum*, *Polytrichum*, *Rhodobryum*, *Fissidens*, *Bryum*, *Mnium*, *Dawsonia*, *Philonotis*, *Pogonatum*, *Barbula* and *Plagiomnium*. The liverworts species include *Marchantia*, *Pallavicinia*, *Herbertus*, *Riccardia*, *Dumortiera* and *Plagiochila*. The species under study exhibited antimicrobial activity, anti-tumor, anticancer, antileukemic activity and healing effects based from documented analysis. **(Authors' abstract)**

**Keywords:** *Biology, Ethnobotany, Morphology, Bryophytes, Taxonomic treatment, Floristic, Ethnic uses*

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2011,  
(Filipiniana Analytics)  
NP

## Methane and methanol steam reforming in a membrane reactor for efficient hydrogen production and continuous fuel cell operation

*Doda, Magda , Ziaka, Zoe , Vasileiadis,*

Our goal in this paper is the description and analysis of new findings and results on membrane reactors and catalytic reactors/heterogeneous processors for the steam reforming reactions of methane, natural gas, and methanol for use in power generation systems and fuel cells. The current communication continues this research by giving emphasis in the so-called "Improved Reaction" and "Reforming-Fuel Cell" systems. We examine the use of methane/methanol based gases (hydrogen generating feedstocks) as sources for Power/Electricity generation via Fuel Cell Technology (i.e., SOFCs). The work focuses on the analysis of methane steam reforming data from two types of reactors. The membrane based reformer and the conventional catalytic plug flow reformer. It was found that the membrane reformer offers higher yields of hydrogen than the plug flow reformer. The same is true for the methane conversions and the CO<sub>2</sub> yields. It is expected that the integration of the membrane reformer into the fuel cell network will offer an improved design for this process operation. **(Author's abstract)**

**Keywords:** *Biology, Methane steam reforming, Methanol steam reforming, Catalytic reactor, SOFC, Membrane reactor model, Hydrogen production, Environmental processes*

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NP

0079

**The myristoylated protein rapsyn is cotargeted with the nicotinic acetylcholine receptor to the postsynaptic membrane via the exocytic pathway**

*Stetzkowski-Marden, Françoise , Bignami, Fabrizia , Marchand, Sophie, Cartaud,*

Rapsyn, a 43 kDa protein required to cluster nicotinic acetylcholine receptors (AChRs) at the neuromuscular junction, is tightly associated with the postsynaptic membrane via an N-terminal myristoylated site. Recent studies have shown that some acylated proteins associate with the exocytic pathway to become targeted to their correct destination. In this work, we used Torpedo electrocyte to investigate the intracellular routing of rapsyn compared to those of AChR and Na,K-ATPase, the respective components of the innervated and noninnervated membranes. We previously demonstrated that these latter two proteins are sorted and targeted to plasma membrane via distinct populations of post-Golgi vesicles (Camus et al., 1998). Biochemical and immunoelectron microscopy analyses of various populations of post-Golgi vesicles immunopurified with magnetic beads led us to identify post-Golgi transport vesicles containing both rapsyn and AChR. These data suggest that rapsyn, as for AChR, specifically follows the exocytic pathway. Furthermore, immunogold-labeling experiments provided in situ evidence that AChR and rapsyn are cotransported in the same post-Golgi vesicles. Taken together, our observations suggest that rapsyn and AChR are cotargeted to the postsynaptic membrane. **(Author's abstract)**

**Keywords:** *Biology, Rapsyn, Myristoylation, Nicotinic acetylcholine receptor, Targeting, Synapse, Torpedo electrocyte*

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(Filipiniana Analytics)  
NP

0080

**Occurrence and diversity of Myxomycetes (*Plasmodial slime molds*) along the Northern Slope of Mt. Makulot, Cuenca, Batangas, Philippines**

*Pascua, Gerald Ceasar P. , Adora, Jaira Michelle V. , Campos, Monica L. , Yu, Kate Nicole T. , Cheng, Christian Bernard T., Pangilinan, Maria Victoria B. , Buaya, Anthony T. , Dela Cruz, Thomas Ediso*

Lowland forests in the Philippines are ideal study sites for myxomycetes due to its cool climate and rich vegetation. Thus, our research study aims to determine the myxomycete assemblages present in Mt. Makulot, Cuenca, Batangas. Aerial and ground leaf litter and twigs were collected and placed in moist chambers for 8 weeks under diffused light. Myxomycetes from the moist chambers and field collections were identified based on sporocarp and spore morphologies. A total of 21 species from 10 genera were collected from Mt. Makulot, with a high number of myxomycetes, i.e. 10-11 species, collected from aerial leaf litter and twigs. Only six species were

obtained from ground leaf litter. Species diversity was also observed to be high on twigs. The myxomycetes collected were identified as *Arcyria afroalpina*, *A. cinerea*, *A. denudata*, *Collaria sp.*, *Diachea bulbilosa*, *D. splendens*, *Diderma effusum*, *D. hemisphaericum*, *Didymium nigripes*, *D. squamulosum*, *Hemitrichia calyculata*, *Lycogala sp.*, *Perichaena chrysosperma*, *P. pedata*, *Physarum compressum*, *P. globuliferum*, *P. melleum*, *Physarum sp.*, *Stemonitis sp.*, *S. fusca*, and *S. herbatica*. Among the collected species, *A. cinerea* was recorded to be the most abundant. Ten species were noted as rare. This is the first report of myxomycetes in Mt. Makulot, Cuenca, Batangas.

**(Author's abstract)**

**Keywords:** *Biology, Lowland forests, Myxomycetes, Species abundance, Species distribution, Species diversity*

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NP

0081

### **Opioids suppress IPSCs in neurons of the rat medial septum/diagonal band of broca: involvement of $\mu$ -opioid receptors and septohippocampal GABAergic neurons**

*Liu, Weimin, Shanabrough, Marya, Alreja, Meenakshi, Leranath, C*

The medial septum/diagonal band region (MSDB), which provides a major cholinergic and GABAergic input to the hippocampus, expresses a high density of opioid receptors. Behaviorally, intraseptal injections of opioids produce deficits in spatial memory, however, little is known about the electrophysiological effects of opioids on MSDB neurons. Therefore, we investigated the electrophysiological effects of opioids on neurons of the MSDB using rat brain slices. In voltage-clamp recordings with patch electrodes, bath-applied met-enkephalin, a nonselective opioid receptor agonist, decreased the number of tetrodotoxin and bicuculline-sensitive inhibitory synaptic currents in cholinergic- and GABA-type MSDB neurons. A similar effect occurred in brain slices containing only the MSDB, suggesting that opioids decrease GABA release primarily by inhibiting spontaneously firing GABAergic neurons located within the MSDB. Accordingly, in extracellular recordings, opioid-sensitive, spontaneously firing neurons could be found within the MSDB. Additionally, in intracellular recordings a subpopulation of GABA-type neurons were directly inhibited by opioids. All effects of met-enkephalin were mimicked by a  $\mu$  receptor agonist, but not by  $\delta$  or  $\kappa$  agonists. In antidromic activation studies,  $\mu$ -opioids inhibited a subpopulation of septohippocampal neurons with high conduction velocity fibers, suggestive of thickly myelinated GABAergic fibers. Consistent with the electrophysiological findings, in double-immunolabeling studies, 20% of parvalbumin-containing septohippocampal GABA neurons colocalized the  $\mu$  receptor, which at the ultrastructural level, was found to be associated with the neuronal cell membrane. Thus, opioids, via  $\mu$  receptors, inhibit a subpopulation of MSDB GABAergic neurons that not only make local connections with both cholinergic and noncholinergic-type MSDB neurons, but also project to the hippocampus. **(Author's abstract)**

**Keywords:** *Biology, Septohippocampal, GABA, Opioids, Parvalbumin, Septum, Diagonal band of Broca*

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2000 February,  
(Filipiniana Analytics)  
NP

0082

## **Paradoxical actions of the serotonin precursor 5-hydroxytryptophan on the activity of identified serotonergic neurons in a simple motor circuit**

*Katz, Paul S. , Fickbohm, Da*

Neurotransmitter synthesis is regulated by a variety of factors, yet the effect of altering transmitter content on the operation of neuronal circuits has been relatively unexplored. We used electrophysiological, electrochemical, and immunohistochemical techniques to investigate the effects of augmenting the serotonin (5-HT) content of identified serotonergic neurons embedded in a simple motor circuit. The dorsal swim interneurons (DSIs) are serotonergic neurons intrinsic to the central pattern generator (CPG) for swimming in the mollusc *Tritonia diomedea*. As expected, treatment with the serotonin precursor 5-hydroxytryptophan (5-HTP) increased the intensity of serotonin immunolabeling and enhanced the potency of synaptic and modulatory actions elicited by the DSIs. It also greatly enhanced the ability of the DSIs to evoke rhythmic CPG activity. After 5-HTP treatment, microvoltammetric measurements indicated an increase in a putative 5-HT electrochemical signal during swim CPG activation. Paradoxically, the spiking activity of the serotonergic neurons decreased to a single burst at the onset of the rhythmic motor program, whereas the overall duration of the episode remained about the same. 5-HTP treatment gradually reduced the rhythmicity of the CPG output. Thus, more serotonin did not result in a more robust swim motor program, suggesting that serotonin synthesis must be kept within certain limits for the circuit to function correctly and indicating that altering neurotransmitter synthesis can have serious consequences for the output of neural networks. **(Author's abstract)**

**Keywords:** *Biology, Intrinsic neuromodulation, Central pattern generator, Neurotransmitter content, Serotonin immunoreactivity, Tritonia diomedea, Synaptic actions, Microvoltammetry, Confocal fluorescence microscopy*

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2000 February,  
(Filipiniana Analytics)  
NP

**0083**

## **Philippine-endemic and Mindanao-endemic bird communities on Canticol and Mt. Hilong-hilong, Philippines**

*Gale, George A. , Mallari, Neil Aldrin D. , Ngoprasert, Dusit , Nuñez, Olga M. , Paz, Sher*

The study assessed the Philippine-endemic and Mindanao-endemic bird communities of two mountains in Agusan del Norte – Canticol, Tubay and Mt. Hilong-hilong, Remedios T. Romualdes (RTR) from September to November, 2008 using eight-minute fixed-radius point counts. Habitat variables included vegetation structure, elevation, slope and incidence of anthropogenic disturbance. Non-linear regression analysis and AICc model selection were used to determine the habitat variables that influence the richness and abundance of endemics in the two sites. Canticol had lower mean density of large and medium trees and higher degree of anthropogenic disturbance than Mt. Hilong-hilong. There were 31 Philippine-endemic birds (four threatened) and three Mindanao-endemics (one threatened) on Canticol while there were 39 Philippine-endemics (seven threatened) and six Mindanao-endemics (three threatened) on Mt. Hilong-hilong. The diversity of endemics was significantly higher on Mt. Hilong-hilong ( $H' = 2.31$ ). The study suggests that the two sites need conservation attention to prevent forest loss and endangerment of the threatened endemics. Vegetation structure and elevation had the greatest influence on the endemic bird communities in the two sites. Adequate regeneration of the disturbed sites in the region must also be prioritized as part of a long-term management strategy. **(Author's abstract)**

**Keywords:** *Biology, Richness, Abundance, Habitat, Threatened, Avian communities*

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0084

### **Plankton diversity in ballast water of an inter-island passenger-cargo ship calling the Philippine Ports**

*Tirazona, Danny B. , Baria, Lovell O. , Gellada, Lorna D. , Magramo, Melchor M. , Sarinas, Brian Gil S., Sorio,  
Lynbelle Rose D. , Tornalejo, Jilla*

Numerous studies have been conducted on ballast water species composition and diversity in other countries but not in the Philippines. Thus, this study aimed to provide baseline information on the plankton diversity in ballast water of the inter-island passenger-cargo vessel calling the ports of Iloilo-Bacolod-Manila- Cagayan de Oro, Philippines and vice-versa. Specifically, this study aimed to determine the presence of phytoplankton and zooplankton diversity and species density of this plankton measured in cells/ml using the haemocytometer technique. Composite sampling was employed having one liter of ballast water used per ballast tank. A total number of 15 genera of phytoplankton (diatom) and one genus of zooplankton were recorded. *Chroococcus*, *Nannochloris* and *Protococcus* had the highest cells/ml while *Ankistrodesmus*, *Micromonas* and *Synedra* had the lowest cells/ml. The most common phytoplankton observed in ballast tanks were *Nannochloris* and *Protococcus*. *Neocalanus* (copepod) was present in all ballast tanks except in ballast tank 1 (fore-peak). The phytoplankton and zooplankton composition was found to be non-invasive in nature showing its ubiquity in the marine environment. This study provides an initial assessment or preliminary list of phytoplankton and zooplankton diversity from the ballast water of a passenger-cargo vessel calling the Philippine ports. **(Author's abstract)**

**Keywords:** *Biology, Phytoplankton, Zooplankton, Diatom, Ballast tanks, Ballast water, Iloilo-Bacolod-Manila-Cagayan de Oro, Philippine ports*

0085

### **A preliminary assessment of the Chiropteran fauna of the Oro River, Cagayan de Oro City, Philippines**

*Japos, Genaro V. , Lobite, Neil Jun S., Lubos, Lesley*

Bats are integral components of the environment serving an indispensable role in maintaining the health of different ecosystem ranging from forested areas up to riparian zones. Rivers and riparian areas provide an important habitat for bat fauna by providing direct valuable resources. The bat fauna along the Cagayan de Oro river had never been assessed and the current study was the first. Bat survey was conducted in different relevant locations along the river communities through mist netting designed to provide baseline ecological information and initial data on species composition and biometrics of bat species present in the Cagayan river zone. Eight bat species – five Pteropodids, two Vespertilionids and one Emballonurid – were recorded representing 15% of the bats of Mindanao faunal region and over 10% of the total Philippine bat fauna. Two species were Philippine endemics though with stable population status but are considered of conservation priority. Further studies along more complete portions of

Cagayan de Oro river would likely add essential information on bat species composition and distribution in the area and would give a clearer overview regarding the bat fauna along the Cagayan de Oro river. **(Author's abstract)**

**Keywords:** *Biology, Chiroptera, Bat diversity, Philippine bat fauna, Cagayan de Oro river, Riparian, Cagayan de Oro City, Philippines*

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2013,  
(Filipiniana Analytics)  
NP

0086

### **Preliminary study on the macrofungi of Bazal-Baubo Watershed, Aurora Province, Central Luzon, Philippines**

*Agbayani, Efren S. , Tadosa, Edwin R., Agustin, Nesto*

A preliminary study on the macroscopic fungi was conducted at the watershed of Aurora Province. Four transect lines were established from 50m to 1040 m asl with 20m x 50m quadrat sampling each transect line (TL) and with an interval of 200m between quadrats. The fungal species within the quadrats along the TL's were collected, identified and recorded. Opportunistic sampling method was also used during the survey. Field sampling of fungi resulted to the identification of 38 families, 68 genera, and 107 species with a total of 684 individuals. Of which 91 are basidiomycetes, 14 are ascomycetes, and two are myxomycetes. Among the significant findings include *Aseroe rubra* Labill., *Lycoperdon echinatum* Pers., *Macrolepiota rhacodes* (Vittadini) Singer, and *Cookeina tricholoma* (Mont.) Kuntze, as the new record fungal species in Aurora, and one possible new species of the genus *Hexagonia*. Further field surveys of the watershed is anticipated to uncover a rich and diverse fungal flora in the area. Although generally well protected, the watershed is currently experiencing some degree of anthropogenic disturbances such as carabao logging, minor forest products gathering, and *kaingin* making or slash-and-burn farming. Fungal diversity research efforts need to be encouraged to evaluate the effects of these human disruptions on the ecology of the watershed. **(Author's abstract)**

**Keywords:** *Biology, Macrofungi, Bazal-Baubo watershed, Field survey, Diversity, Ecology*

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2011,  
(Filipiniana Analytics)  
NP

0087

### **A role for nuclear PTEN in neuronal differentiation**

*Nabi, Roya , Miller, Susan J. , Recht, Lawrence D. , Litofsky, Scott , Quesenberry, Peter J. , Lambert, Stephen , Poluha, Wojciech , Mitra, Prasenjit , Schonhoff, Christopher M. , Sultana, Nazneen , Lachyankar, Mahesh B., Ohta, Shinji , Neel, Benjamin G. , Ross, Alonz*

Mutations of phosphatase and tensin homolog deleted on chromosome 10 (PTEN), a protein and lipid phosphatase, have been associated with gliomas, macrocephaly, and mental deficiencies. We have assessed PTEN's role in the nervous system and find that PTEN is expressed in mouse brain late in development, starting at approximately postnatal day 0. In adult brain, PTEN is preferentially expressed in neurons and is especially evident



in Purkinje neurons, olfactory mitral neurons, and large pyramidal neurons. To analyze the function of PTEN in neuronal differentiation, we used two well established model systems—pheochromocytoma cells and cultured CNS stem cells. PTEN is expressed during neurotrophin-induced differentiation and is detected in both the nucleus and cytoplasm. Suppression of PTEN levels with antisense oligonucleotides does not block initiation of neuronal differentiation. Instead, PTEN antisense leads to death of the resulting, immature neurons, probably during neurite extension. In contrast, PTEN is not required for astrocytic differentiation. These observations indicate that PTEN acts at multiple sites in the cell, regulating the transition of differentiating neuroblasts to postmitotic neurons. **(Author's abstract)**

**Keywords:** *Biology, Phosphatase, Phosphatidylinositol phosphate, Nerve growth factor, PC12 cells, Stem cells, Brain-derived neurotrophic factor, Neurite extension*

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NP

0088

**Role of tissue plasminogen activator receptor LRP in hippocampal long-term potentiation**  
*Jacquin, Mark , DeMaro, Joe , Osaka, Hiroshi , Li, Yonghe , Holtzman, David M. , Zhuo, Min, Bu, Gu*

The low-density lipoprotein (LDL) receptor-related protein (LRP) is a multifunctional endocytic receptor that is expressed abundantly in neurons of the CNS. Both LRP and several of its ligands, including tissue plasminogen activator (tPA), apolipoprotein E/lipoproteins,  $\alpha_2$ -macroglobulin, and the  $\beta$ -amyloid precursor protein, have been implicated in various neuronal functions and in the pathogenesis of Alzheimer's disease. It has been reported that induction of tPA expression may contribute to activity-dependent synaptic plasticity in the hippocampus and cerebellum. In addition, long-term potentiation (LTP) is significantly decreased in mice lacking tPA. Here we demonstrate that tPA receptor LRP is abundantly expressed in hippocampal neurons and participates in hippocampal LTP. Perfusion of hippocampal slices with receptor-associated protein (RAP), an antagonist for ligand interactions with LRP, significantly reduced late-phase LTP (L-LTP). In addition, RAP also blocked the enhancing effect of synaptic potentiation by exogenous tPA in hippocampal slices prepared from tPA knock-out mice. Metabolic labeling and ligand binding analyses showed that both tPA and LRP are synthesized by hippocampal neurons and that LRP is the major cell surface receptor that binds tPA. Finally, we found that tPA binding to LRP in hippocampal neurons enhances the activity of cyclic AMP-dependent protein kinase, a key molecule that is known to be involved in L-LTP. Taken together, our results demonstrate that interactions between tPA and cell surface LRP are important for hippocampal L-LTP. **(Author's abstract)**

**Keywords:** *Biology, LRP, tPA, LTP, PKA, Alzheimer's disease, Hippocampus*

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2000 January,  
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NP

0089

**Sea turtles of Macajalar and Gingoog Bays Mindanao, Philippines**  
*Quimpo, Fra-And T*

There are 4 species of sea turtles recorded in Macajalar and Gingoog Bays in Northern Mindanao. The hawksbill and the green turtle have the highest occurrence while casual and accidental occurrences are recorded for the olive ridley and leatherback turtle. Sea turtles are recorded in 22 barangays (the smallest geopolitical unit in the Philippines) of 11 municipalities in both bays, but only the hawksbill and green turtles are observed in in-water and boat surveys. Only the hawksbill turtle is confirmed to nest in 9 barangays of 5 municipalities. Nesting is all year round with peaks during the 1st quarter of the year. 22% of the nests have not reached hatching due to poaching (14%) and natural causes (8%). Nesting activity is within the range recorded for the species. Sea turtle-human interactions are generally positive with majority of accidental captured turtles released although poaching of eggs and deaths of sea turtles directly or indirectly manmade are still documented. **(Author's abstract)**

**Keywords:** *Biology, Sea turtles, Hawksbill turtle, Green sea turtle, Olive ridley turtle, Leatherback turtle, Conservation*

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2013,  
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NP

0090

### **Separate proliferation kinetics of fibroblast growth factor-responsive and epidermal growth factor-responsive neural stem cells within the embryonic forebrain germinal zone**

*Van Der Kooy, Derek , Tropepe, Vincent , Martens, Da*

The embryonic forebrain germinal zone contains two separate and additive populations of epidermal growth factor (EGF)- and fibroblast growth factor (FGF)-responsive stem cells that both exhibit self-renewal and multipotentiality. Although cumulative S phase labeling studies have investigated the proliferation kinetics of the overall population of precursor cells within the forebrain germinal zone through brain development, little is known about when and how (symmetrically or asymmetrically) the small subpopulations of stem cells are proliferating *in vivo*. This has been determined by injecting timed-pregnant mice with high doses of tritiated thymidine ( $^3\text{H}$ -thy) to kill any stem cells proliferating within the striatal germinal zone *in vivo* and then by assaying for neurosphere formation *in vitro*. Injections of 0.8 mCi of  $^3\text{H}$ -thy given every 2 hr for 12 hr to timed-pregnant mice at E11, E14, and E17 resulted in significant depletions in the number of neurospheres generated by FGF-responsive stem cells at E11 and by EGF-responsive and FGF-responsive stem cells at E14 and E17. With increasing embryonic age, the depletions observed in the number of neurospheres generated *in vitro* in response to FGF2 after exposure to  $^3\text{H}$ -thy *in vivo* decreased, suggesting there is an increase in the length of the cell cycle of FGF-responsive neural stem cells through embryonic development. The results suggest that the FGF-responsive stem cell population expands between E11 and E14 by dividing symmetrically, but switches to primarily asymmetric division between E14 and E17. The EGF-responsive stem cells arise after E11, and their population expands through symmetric divisions and through asymmetric divisions of FGF-responsive stem cells. **(Author's abstract)**

**Keywords:** *Biology, Stem cells, Cell cycle, Symmetric divisions, Asymmetric divisions, 3H-thymidine, Embryonic forebrain*

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2000 February,  
(Filipiniana Analytics)  
NP

## Seroprevalence of *Toxoplasma gondii* antibodies in domestic short-haired cats (*Felis catus*) in a wildlife facility in Manila

*Lastica, Emilia A. , San Roque, Dianne Grace DG. , Flores, Marianne Leila S. , Guevara, Verman G. , Reyes, Ma*

Thirty apparently healthy domestic short-haired cats (*Felis catus*) of both sexes, 3-48 months old, living in a wildlife facility in Manila were used in the study. The animals had no record of deworming or vaccination. Cats with owners were excluded in the study. Blood sera were tested for *Toxoplasma gondii* antibodies using an Enzyme-Linked Immunosorbent Assay Test kit. It was observed that 46.67% of all the animals tested had serologic evidence of exposure to *T. gondii*. Males (66.67%) were found to be more prone to the infection than females (26.67%). All animals that tested positive were adults. This study showed that male, adult domestic short-haired cats were more prone to exposure to the parasite than females and young animals. **(Author's abstract)**

**Keywords:** *Biology, Cat, Domestic, Toxoplasmosis, Felis catus*

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2013,  
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NP

## Specificity of projections from wide-field and local motion-processing regions within the middle temporal visual area of the owl monkey

*Born, Richard T. , Berezovskii, Vladi*

The middle temporal visual area (MT) of the owl monkey is anatomically organized with respect to both preferred direction of motion and different types of center-surround interaction. The latter organization consists of clusters of neurons whose receptive fields have antagonistic surrounds that render them unresponsive to wide-field motion (local motion columns) interdigitated with groups of neurons whose receptive fields have additive surrounds and thus respond best to wide-field motion (wide-field motion columns).

To learn whether the information in these regions remained segregated further along the visual pathways, we made injections of retrograde tracers into two visual areas to which MT projects [the medial superior temporal area (MST) and fundus of the superior temporal sulcus (FST)] and then labeled the wide-field and local organization using 2-deoxyglucose. In complementary experiments, we injected anterograde tracers into regions of MT that we had mapped using microelectrode recordings.

Injections into both dorsal FST and ventral MST labeled clusters of cell bodies in MT that were concentrated within wide-field motion columns, whereas injections into dorsal MST labeled neurons predominantly within local motion columns. Results from the anterograde tracer experiments corroborated these findings. The high degree of specificity in the connections reinforces a model of functional organization for wide-field versus local motion processing within MT. Our data support the previously reported division of FST into separate dorsal and ventral areas, and they also suggest that MST of the owl monkey is, like MST of the macaque, functionally organized with respect to local versus wide-field motion processing. **(Author's abstract)**

**Keywords:** *Biology, Functional neuroanatomy, Functional organization, Parallel processing, Modularity, Center-surround, Figure ground*

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**Status of plant biodiversity in Mt. Malarayat**  
*Arcega, Christie Victoria S. , Lunar, Berna*

The study determined the vegetative structure, assessed the current status of plant biodiversity in Mt. Malepunyo, one of its peaks. Herbarium of its floristic composition served as the baseline for future monitoring and scientific undertakings in the area. The quadrat technique was used to determine the vegetative structure and ecological dynamics of the forest of Mt. Malarayat- Malepunyo. The size of the quadrat was 100 square meters each (10x10 m). A total of 20 quadrats used were situated more or less along the trail to the peak. The study recorded a total of at least 104 species under 60 families; of which 46 species are indigenous or native to the Philippines; 27 species are introduced; 23 species endemic to Mt. Malarayat; while 9 species were unclassified. Eleven (11) were threatened species included in the conservation priority areas. The flora is composed of 67% trees, mostly from families Moraceae, Euphorbiaceae, Lauraceae, Meliaceae and Rubiaceae. The undergrowth layer includes shrubs (13%), vines (11%) herbs (5%) and ferns (4%). Its potential threats and anthropogenic disturbances include presence of invasive species, impacts of unregulated tourism activities, small scale timber poaching, hunting and land conversion. **(Author's abstract)**

**Keywords:** *Biology, Status, Plant biodiversity, Mt. Malarayat , Species richness*

**Synaptic depression and the kinetics of exocytosis in retinal bipolar cells**  
*Lagnado, Leon , Burrone*

The capacitance technique was used to investigate exocytosis at the ribbon synapse of depolarizing bipolar cells from the goldfish retina. When the  $\text{Ca}^{2+}$  current was activated strongly, the rapidly releasable pool of vesicles (RRP) was released with a single rate-constant of  $\sim 300\text{--}500 \text{ sec}^{-1}$ . However, when the  $\text{Ca}^{2+}$  current was activated weakly by depolarization in the physiological range ( $-45$  to  $-25$  mV), exocytosis from the RRP occurred in two phases. After the release of 20% or more of the RRP, the rate-constant of exocytosis fell by a factor of 4–10. Thus, synaptic depression was caused by a reduced sensitivity to  $\text{Ca}^{2+}$  influx, as well as simple depletion of the RRP. In the resting state, the rate of exocytosis varied with the amplitude of the  $\text{Ca}^{2+}$  current raised to the power of 2. In the depressed state, the sensitivity to  $\text{Ca}^{2+}$  influx was reduced approximately fourfold. The initial phase of exocytosis accelerated e-fold for every 2.1 mV depolarization over the physiological range and averaged  $120 \text{ sec}^{-1}$  at  $-25$  mV.

The synapse of depolarizing bipolar cells therefore responds to a step depolarization in a manner similar to a high-pass filter. This transformation appears to be determined by the presence of rapidly releasable vesicles with differing sensitivities to  $\text{Ca}^{2+}$  influx. This might occur if vesicles were docked to the plasma membrane at different distances

from Ca<sup>2+</sup> channels. These results suggest that the ribbon synapse of depolarizing bipolar cells may be a site of adaptation in the retina. **(Authors' abstract)**

**Keywords:** *Biology, Synapse, Vesicle, Exocytosis, Depression, Retina, Depolarizing bipolar cell*

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JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 2, 568-578  
2000 January,  
(Filipiniana Analytics)  
NP

0095

### **Taxonomic description and some morphometric characters of the gastropod, *Terebralia sulcata* born, 1778 (Potamididae: Prosobranchia)**

*Eustaquio, Maristel D. , Masagca, Ji*

This study described the taxonomic status of *Daru-daru*<sup>TM</sup>, *T. sulcata* and some morphometric characters of samples obtained from Toytoy, Caramoran and Palnab, Virac, Catanduanes. It was known that the samples from the said localities are just the same as the types described by previous taxonomists. Although there were some variations as to coloration, spire and whorl characteristics having flattened or pointed shell structures these were not significant enough to suspect possible ecotype that could exist in these collection areas. Moreover, as to some of the morphometric characters determined, the gastropod *T. sulcata* possesses variable sizes in total length and body width as well as live weights of the shells examined. The range of shell length was known to be within the range as described in extant literatures. (Author's abstract)

**Keywords:** *Biology, Terebralia sulcata, Daru-daru, Gastropod*

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CAS Journal of Research, Volume No. 6 Issue No. 1, 16-29  
2012,  
(Filipiniana Analytics)  
NP

0096

### **A taxonomic study of wood-rotting basidiomycetes at the Molave forest of San Fernando City, La Union Province, Philippines**

*Arsenio, Jethro S. , Tadiosa, Ed*

A taxonomic study of the wood-rotting basidiomycetes was conducted at the Molave Forest of San Fernando City, La Union, Northern Luzon, Philippines. This mountainous forest located in the eastern boundaries of the City is being considered as one of the most important forest ecosystems in Ilocos Region, thereby indicating the need for conservation and protection. This paper attempts to document all the macroscopic fungal basidiomycetous species in the area by preparing taxonomic accounts based on an extensive systematic collection and by facilitating the identification or recognition of each fungal species. As there has been no comprehensive work done on the diversity of macroscopic fungi in this area, hence this study was conducted. Using transect line (TL) method, four transect lines were established from the baseline (100m asl) toward the peak (300m asl) with 10m x 25m quadrat sampling each transect line and an interval of 50 meters between quadrats. All in all 20 quadrats were laid out. The fungal species within the quadrats along the TLs were identified and recorded. This study of wood-rotting basidiomycetes

in the molave forest of La Union documented fifty one species. Each species is described including substrata/hosts, synonymies, and habitat. Some of these species, being the most destructive fungi are largely responsible for the decay of living trees. We found out that fungal species richness decreased if the condition of the area is relatively dry. **(Author's abstract)**

**Keywords:** *Biology, Basidiomycetes, Molave forest, Field survey, Microfungi, Taxonomic study, Species richness, Wood-rotting, Fernando City, Philippines*

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Asian Journal of Biodiversity, Volume No. 5 Issue No. 1, 92-108  
2014,  
(Filipiniana Analytics)  
NP

0097

### **Ultrafast inactivation causes inward rectification in a voltage-gated K<sup>+</sup> channel from *Caenorhabditis elegans***

*Avery, Leon , Neely, Alan , Davis, Wayne , Dzhura, Igor , Fleischhauer, Richard, Joho, Rolf*

The *exp-2* gene in the nematode *Caenorhabditis elegans* influences the shape and duration of the action potential of pharyngeal muscle cells. Several loss-of-function mutations in *exp-2* lead to broadening of the action potential and to a concomitant slowing of the pumping action of the pharynx. In contrast, a gain-of-function mutation leads to narrow action potentials and shallow pumping. We cloned and functionally characterized the *exp-2* gene. The *exp-2* gene is homologous to genes of the family of voltage-gated K<sup>+</sup> channels (Kv type). The *Xenopus* oocyte-expressed EXP-2 channel, although structurally closely related to Kv-type channels, is functionally distinct and very similar to the human ether-à-gogo-related gene (HERG) K<sup>+</sup> channel. In response to depolarization, EXP-2 activates slowly and inactivates very rapidly. On repolarization, recovery from inactivation is also rapid and strongly voltage-dependent. These kinetic properties make the Kv-type EXP-2 channel an inward rectifier that resembles the structurally unrelated HERG channel. Apart from many similarities to HERG, however, the molecular mechanism of fast inactivation appears to be different. Moreover, the single-channel conductance is 5- to 10-fold larger than that of HERG and most Kv-type K<sup>+</sup> channels. It appears that the inward rectification mechanism by rapid inactivation has evolved independently in two distinct classes of structurally unrelated, voltage-gated K<sup>+</sup> channels. **(Author's abstract)**

**Keywords:** *Biology, Potassium channels, Kv channel, Inward rectifier, C. elegans, Pharyngeal muscle, Xenopus oocyte*

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JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 2, 511-520  
2000 January,  
(Filipiniana Analytics)  
NP

0098

### **Vascular flora of the tropical montane forests in Balbalasang-Balbalan National Park, Kalinga Province, Northern Luzon, Philippines**

*Malabrigo, Jr., Pas*

This paper provides a preliminary report on the different types of habitats including ecology and species diversity of Balbalasang-Balbalan National Park (BBNP) based on the Rapid Site Assessment (RSA) conducted along various microhabitat gradients in 2009. A total of 84 families, 206 genera and 319 taxa were recorded, including a new species of *Rafflesia*, a very rare parasitic plant. There are 106 Philippine endemics reported, 38 of which are Luzon endemics. 18 taxa were listed under either the Philippine Red List (Fernando et al., 2008) or on the IUCN Red List of Threatened Species (IUCN 2010). Result of the RSA conforms with previous studies revealing high, yet poorly understood biological diversity in this part of Cordillera. It further implies that BBNP support a large percentage of the country's threatened, endemic, and unknown flora. A more comprehensive biodiversity assessment is therefore necessary to better account for the floral diversity of BBNP. **(Author's abstract)**

**Keywords:** *Biology, Balbalasang-Balbalan National Park, Rapid site assessment, Rafflesia, Philippine endemics*

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Asian Journal of Biodiversity, Volume No. 4 Issue No. 1, 1-22  
2013,  
(Filipiniana Analytics)  
NP

## **BOTANY**

**0099**

### **Ethnobotanical inventory and assessment of medically-important plant roots in Cebu Island, Philippines**

*Alonso, Charly Ann G. , Picardal, Jay P. , Miano, Rommel S., Reuyan, Deral*

An ethnobotanical study on medically important plant roots was conducted in Argao, Naga, San Fernando, San Remigio of Cebu Island, Philippines. A total of 25 informants from each study sites were interviewed (*bisaya'ng mananambal*). The study recorded 18, 22, 16, 21 different species of plants claimed to have medicinal uses. The most common ailment cited by the *traditional healers* is 'relapse', which has the highest number of cited plants used for treatment. The modes of preparation are either concoction or decoction. The common mode of administration is oral intake, by drinking the wine or the water from concocted or decocted root/s as needed and until the ailments get well. The effectiveness of the medicinal plants used by the traditional healers vary from each study site according to perceived effectiveness of each plant used. The medically-important plant roots cited by the traditional healers from the four municipalities reported to be very effective in treating ailments/diseases are the mandalusangputi [*Justiciasp*] in Argao, mangagaw [*Euphorbia hirta* Linn] in Naga, kapayas nga laki [male *Carica papaya*] in San Fernando), and wachichao [*Orthosiphonaristatus*] in San Remigio. **(Author's abstract)**

**Keywords:** *Botany, Medicinal plants, Cebu Island, Herbal medicine, Ethnobotany, Plant roots, Plants*

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Asian Journal of Biodiversity, Volume No. 2 Issue No. 1, 83-104  
2011,  
(Filipiniana Analytics)  
NP

**0100**

## Hybridization and genetic improvement of mulberry varieties

Gapuz, Cristeta F. , Supsup, Roel D. , Tabafunda, Menirva J. , Ancheta, Lilia A. , Dacayanan, Merlita A. ,  
Damasco, Cresti

This research focused on the evaluation of Open Pollinated Varieties (OPVs) for sprouting and rooting characters growth, yield and quality for effective utilization in crop improvement for sustained mulberry biodiversity. The OPVs Alf-004, Alf018, Alf- 028, S61-019, S54-019 and the Batac variety were set up in Randomized Complete Block Design with three replications. The four year pooled data were analyzed using the Analysis of Variance across season and DMRT for further test of significance. Correlation Analysis was used to determine the association among yield related characters. Number of branches per plant (NoB), length of longest shoot (LLS), plant height (PH), moisture content (MC) and moisture retention capacity (MRC). Propagation characters as to sprouting percentage (s), rooting percent ®, fresh weight of roots (FWR), fresh weight of shoots (FWS), length of roots (LR), length of shoots (LS), root to shoot ratio by weight (RSR wt), root to shoot ratio by length (RSR L) and number of root (NoR) were considered. Results revealed that the best performing mulberry OPVs based on growth, yield, quality and propagation traits are Alf-004, S61- 019, S54-019, S61-011 and Alf-025. These varieties are expected to contribute towards a sustained quality mulberry leaf production and biodiversity for the silk industry's growth and development. **(Author's abstract)**

**Keywords:** Botany, Hybridization, Genetic improvement, Mulberry

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Asian Journal of Biodiversity, Volume No. 2 Issue No. 1, 184-209  
2011,  
(Filipiniana Analytics)  
NP

0101

## Plant species diversity and endemism at Dihang Dibang Biosphere Reserve and its surroundings, Eastern Himalaya biodiversity hotspot

Singh, Sarnam , Singh, Ta

An attempt has been made to give assessment of plant species diversity of primary and secondary forest vegetation types in Dihang Dibang Biosphere Reserve (DDBR), a single biosphere reserve in Eastern Himalaya. It is excellent example of continuous unbroken forest of the Himalaya from subtropics to mountain tundra while surrounding area of southern part cover tropics. In the present study we have analysed seventy three sample plots in different forest types and species diversity indices were calculated, Shannon-Wiener's H' species richness, evenness, dominant species, dominant versus species richness, and important value index of Biosphere. The species richness in Subtropical evergreen II forest was found highest 7.21 with 350 numbers of species. Owing to the variation of microenvironment, Asian Journal of Biodiversity 2 diversity values within the same vegetation type vary between the samples from different patches. The study would be a great assistance for biodiversity conservation and planning of newly constructed DDBR and its surroundings. The study would be a great assistance for biodiversity conservation and planning of newly constructed DDBR and its surroundings. **(Author's abstract)**

**Keywords:** Botany, Species diversity, Endemism, Biosphere reserve, Eastern Himalaya

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Asian Journal of Biodiversity, Volume No. 3 Issue No. 1, 1-22  
2012,  
(Filipiniana Analytics)  
NP



**Species richness, distribution, and status of mosses in selected mountains in Mindanao, Philippines**  
*Lubos, Les*

The paper determined the species richness, distribution, and status of mosses in selected mountains in Mindanao, Philippines. Field collections of mosses were conducted in Mt. Kalatungan, Bukidnon Province, Mt. Matutum, South Cotabato Province, and Mt. Malambo, Davao Province at 10 meters on each side of the trails using alpha taxonomy method. The mosses were collected, classified, and identified. Its status were also assessed. The study revealed 137 species, 87 genera and 33 families of mosses. Of the 137 species, 109 were found in Mt. Kalatungan, 59 in Mt. Matutum, and 20 in Mt. Malambo. Assessment of status of the species revealed 7 species as Philippine record, 37 new to Mindanao, 1 collected only twice, 29 widespread, 12 rare species, and all species collected were new record in terms of locality. Mt. Kalatungan had the highest species richness, followed by Mt. Matutum, and Mt. Malambo had the least number of species. Based on the findings, with the alarming rate of degradation of the mountains which is basically caused by human activities such as land clearing, slash and burn method for expanding crop plantation, urbanization, firewood consumption, over collection of moss plant materials of horticulture, landscaping and other commercial purposes. Some species are epiphytes on tree trunks or branches of live trees while others are on rotten logs, rock surfaces, moist stones along the stream banks and some grow well on soil. Hence, the identified habitats of new records in the Philippines, new to Mindanao, new in terms of locality, widespread, and rare species of mosses should be protected through a strict implementation of the forest laws by concerned authorities. **(Author's abstract)**

**Keywords:** Botany, Mosses, Species richness, Distribution, Status, Mindanao Island, Philippines

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Asian Journal of Biodiversity, Volume No. 1 Issue No. 1, 72-90  
2010,  
(Filipiniana Analytics)  
NP

**Subcellular localization, isolation, and partial purification of mercury-binding biomolecules in *Chromolaena odorata* (L.f.) R.M. King et H. Robinson**  
*Rivero, Gilda C., Alcantara, Hannah Joy P.*

*Chromolaena odorata* (L.f.) R.M. King et H. Robinson plants were grown in Hoagland's solution modified with 1.00 ppm  $\text{Hg}(\text{NO}_3)_2$ . Cold Vapor-Atomic Absorption Spectrophotometry (CY-AAS) analyses for  $\text{Hg}^{2+}$  contents established the presence of  $\text{Hg}^{2+}$  in 3 out of 4 of the subcellular components obtained from the leaves of the Hg-treated *C. odorata* plants. Inductively Coupled Plasma Atomic Emission Spectrometry (ICP-AES) analyses of the isolated protoplasts and vacuoles revealed that the ultimate localization of  $\text{Hg}^{2+}$  was in the vacuoles.

The Hg-binding, SH-containing biomolecules, which were initially detected through the 5,5'-dithiobis(2-nitrobenzoic acid) (DTNB) assay, manifested as a predominant peak in the chromatographs of both the control and Hg-treated plants, obtained through Reverse Phase- High Performance Liquid Chromatography (RP-HPLC), with their retention times falling within the ranges of reduced glutathione, metallothionein, and cysteine standards. However, the concentrations of the glutathione- and/or metallothionein- like, cysteine-containing biomolecules detected in the leaves of Hg-treated *C. odorata* plants were ten-fold higher than those detected in the control.

The findings of this study provided evidence that the enhanced production of Hg-binding biomolecules and the localization of  $\text{Hg}^{2+}$  ions are ultimately in the vacuoles of the leaves and that these are the mechanisms which bring

about Hg<sup>2+</sup> tolerance and homeostasis in *C. odorata* plants exposed to mercury. These results indicate that *C. odorata* is a hyperaccumulator and hence, a potentially effective phytoremediator for Hg<sup>2+</sup> ions. **(Authors' abstract)**

**Keywords:** Botany, *Chromolaena odorata*, Mercury, Phytoremediation, Phytochelatin, Glutathione, Metallothionein, Cysteine, Subcellular localization, DTNB assay, RP-HPLC

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NRCP Research Journal, Volume No. 10 Issue No. 1, 16 pages  
(Filipiniana Analytics)  
Fil(S) SB615.C45 R58 2009

## CHEMISTRY

0104

### **Animated green vitriol can transmute copper (Cu) into special copper** *Madhusoodanan, Ramakr*

Animated green vitriol is one of an intriguing research subjects in modern sciences. A study was performed by artificially bonded 3 gram of an alchemical green copper sulfate had collision with the 300 grams of pure copper (Cu, 96.95 per cent purity) could be transmuted into special copper after the normal fusion process at >1083 °C. The study was conducted on January -2011, at the material research lab, Traditional Alternative Medicine Research Center TAMRC-INDIA, Alleppey- District, Kerala, India. The study was evaluated that, the characteristic qualities related to the ordinary copper (cu) before used in this experiment could be changed into special copper. **(Author's abstract)**

**Keywords:** Chemistry, Animated, Alchemy, Bonded, Copper, Collision, Fusion

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International Journal of Science and Technology, Volume No. 1 Issue No. 2, 105-108  
2012 February,  
(Filipiniana Analytics)  
NP

0105

### **Anti-inflammatory effect of the formulated tablet of dalangita (*Citrus nobilis*) peel extract in Albino rats**

*Palarisan, Janson Jesson B. , Gargoles, Hazel M. , Canete, Rochell V. , Loquellano, Ma. Corazon S., Pelaez, Joyc*

Plants with its medicinal property alleviate the suffering of many people, in as much as they are used to treat many diseases like, rheumatoid arthritis. With this study, it aimed to determine the inhibitory effect of the formulated tablet from dalangita peel extract (*Citrus nobilis*) in the paw edema of carrageenan-induced albino rat. Experimentation utilized three Swiss mice administered with the dose level of 2000 mg/ kg body weight following the Acute Single Toxicity Test. Likewise, six healthy male albino rats were with these doses starting at 10mg/kg to 630.96 mg/kg body weight for Approximate Effective Dose (AED). Formulated tablet for bioassay contained 40 mg/kg dose of dalangita peel extract. Bioassay results show that the percentage inhibition in formulated ointment is 32%, Etoricoxib (positive control) is 45.32% while negative control (placebo) is 0.73%. This reveals that at 0.05% level of significance, the test group animal treated with formulated tablet show decrease in paw edema, which only

developed for 4 hours after treatment, and similar result was observed with Etoricoxib. However, test animals that received placebo drug manifested a minimal decreased in paw edema. Analysis of variance and Tukey's multiple comparison test proved that both positive control and dalangita peel extract did not differ significantly with each other. This implies that the peel extract tablet has an equal effect with Etoricoxib in lowering the formation of paw edema on the albino rats. (**Author's abstract**)

**Keywords:** *Chemistry, Pharmacology, Dalangita, Anti-inflammatory, Approximate effective dose, Acute single toxicity, Eterocoxib, Philippines*

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Root Gatherers, Volume No. 3 Issue No. 1, 46-59  
2012,  
(Filipiniana Analytics)  
NP

0106

**The antitussive effect of formulated syrup from Trompang elepante (*Heliotropium indicum* linn.) leaf extract in citric acid cough-induced guinea pigs**  
*Santiago, Jennifer Gwen L. , Obra, Rocel Joy C. , Nahial, Donnah D., Vasquez, Emil*

The study endeavored to validate the antitussive activity of Trompang Elepante (*Heliotropium indicum* Linn.) leaf extract. It contains alkaloidal principle, specifically heliotrine, a pyrrolizidine alkaloid that inhibits the cough reflex by the inhibition of acetylcholine to bind at M3 receptors, thus smooth muscle contraction is suppressed. The study shows that Trompang elepante leaf extract does not contain toxic substances and free for further exploration of therapeutic effect based from the result of the Acute Oral Toxicity Testing. In the determination of Approximate Effective Dose, ten healthy Guinea pigs (5 males and 5 females) previously weighed and acclimatized inside the cough chamber was used in the experimentation. After acclimatizing, the guinea pigs were exposed to citric acid by enclosing the animals in cough chamber, nebulized to saturation with citric acid for them to inhale for 5 minutes. The number of coughs within 10 minutes was recorded. After recording the number of cough of each male and female guinea pigs, test animals received orally the determined dose in mg/kg body weight of Trompang elepante (*Heliotropium indicum*) leaf extract and then increased the dose logarithmically by 0.6 intervals (Bernas, 2004). After administration it was enclosed again in cough chamber and the number of coughs for 10 minutes was recorded. The results showed that the cough induction of citric acid was inhibited after the administration of Trompang Elepante leaf extract. From the experimental results, the Approximate Effective Dose is found to be between 158.49 to 2511.90 mg/kg dose level. (Author's abstract)

**Keywords:** *Chemistry, Antitussive activity, Approximate effective dose, Acute oral toxicity test, Trompang elepante*

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Root Gatherers, Volume No. 3 Issue No. 1, 177-195  
2012,  
(Filipiniana Analytics)  
NP

0107

**Chemical constituents antibacterial properties, and cytotoxic activities of *Pycnoporus coccineus***  
*Abad, Maril*

The study aimed to analyze the chemical constituents, antibacterial properties, and cytotoxic activities of *Pycnopus coccineus*. Fresh thalli of *P. coccineus* were prepared as sample for the proximate chemical composition analysis which was performed by gravimetric methods. Ethanolic extract of the comminuted and pulverized thalli of *P. coccineus* was prepared by maceration technique and the crude extract was used for phytochemical screening through thin layer chromatography in order to determine the secondary metabolites. More crude extract was used for the detection of antibacterial property through the minimum inhibitory concentration (MIC) assay against three different species of bacteria, *Escherichia coli*, *Salmonella typhi* and *Staphylococcus aureus*, and for the detection of cytotoxic activity through the brine shrimp lethality (BSLA) assay against brine shrimp. The thallus of *P. coccineus* was found to have high protein content and total ash which would indicate mineral contents. The secondary metabolites detected were of steroids, sugars, anthraquinones, coumarines, anthrones, tannins, phenol, flavonoids, and alkaloids. The toxicity level was found out to be relatively active with  $LC_{50}$  of 488.28 $\mu$ g/mL but the antibacterial activity is only partially active against *S. typhi*. (Author's abstract)

**Keywords:** Chemistry, Antibacterial assay, Cytotoxicity, Phytochemicals, *Pycnopus coccineus*

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QSU Research Journal, Volume No. 3 Issue No. 1, 1-10  
2014,  
(Filipiniana Analytics)  
NP

0108

**Cholesterol lowering activity of formulated Green caviar (*Caulerpa lentillifera* j. Agardh., caulerpaceae) seaweed extract tablet in hypercholesterolemia-induced rabbits**  
*Bermudez, Lovely Edchelle, Inting, Danmarie, Bat-ao, Melanie, Rafael, Dune Vienis Karen N., Loquellano, Ma. Cora*

This study was designed to investigate the effects of the formulated Green Caviar (*Caulerpa lentillifera* J. Agardh) seaweed extract in lowering total cholesterol, triglyceride and low density lipoprotein levels in 15 rabbits fed on high-cholesterol/high-fat diets. Ethanolic extract was determined on its Acute Oral Toxicity using female albino rabbits and Approximate Effective Dose (AED) using male rabbits. Meanwhile, Effective Dose (ED90) was determined within AED range using Algebraic Probit analysis using hypercholesterolemia-induced rabbits. Bioassay for formulated tablet was obtained through dividing 3 groups of rabbits. Group 1 was administered with the formulated Green caviar tablet, group 2 with placebo and 5 mg/kg dose of Simvastatin (positive control) for group 3. Rabbits on the high cholesterol fat diet had significantly increased plasma total cholesterol (TC), plasma low-density lipoprotein cholesterol (LDL-C), plasma triglycerides (TG) in 30 days. Animals treated with Simvastatin showed decrease in total cholesterol, triglycerides and LDL level at  $1.1475 \pm 0.7030$ ,  $1.0775 \pm 0.1224$  and  $0.76 \pm 0.7109$  respectively. Those that received the formulated test drug have shown positive response towards the treatment as indicated in the decreased of values in these parameters. Total cholesterol, triglycerides and LDL lowered by the experimental group was found to be at  $1.36 \pm 0.1627$ ,  $1.1725 \pm 0.7444$  and  $0.13 \pm 0.4567$ . Statistical analysis showed that there is no significant difference in the total cholesterol, triglyceride and low-density lipoprotein lowered by the formulated Green Caviar tablet and Simvastatin. (Author's abstract)

**Keywords:** Chemistry, Pharmacology, Green caviar, Lipid profile, Rabbit, Hypercholesterolemia, Simvastatin

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Root Gatherers, Volume No. 3 Issue No. 1, 82-99  
2012,  
(Filipiniana Analytics)  
NP

### **A comparative study on the percentage content of synthetic and herbal supplements of Vitamin C available in Davao City**

*Tomimbang, Liza A. , Radaza, Arie Mae E. , Alinsasaguin, Chresyl C. , Edulan, Jenny R. , Nahial, Don*

Vitamin plays in the normal functioning of the body. One of the vitamins that the human body significantly need is ascorbic acid, commonly known by its biologically active form, as Vitamin C. This study sought to obtain the percentage content analysis of Vitamin C supplements available in the market today. This included the range of synthetic and herbal Vitamin C supplements. In so doing, the researchers proposed to broaden the knowledge on informed use of Vitamin C supplements. The researchers employed the alkaline cupric tartrate test to collect the Vitamin C and the iodimetric titration to further determine the percentage content of ascorbic acid (Vitamin C) based on the United States of Pharmacopeia/National Formulary method. Essentially, the percentage content analyses obtained from the sampled synthetic and herbal Vitamin C supplements do not conform with the United States Pharmacopoeia standards. Most of the obtained results for percentage content of Vitamin C supplement both for synthetic (Class X) and herbal (Class Y) fall below the USP reference standard for Vitamin C (99-100.5). Necessary recommendations were then formulated after the findings of this study. (Author's abstract)

**Keywords:** *Chemistry, Pharmacology, Percentage content, Iodimetric titration, Synthetic ascorbic acid, Herbal ascorbic acid*

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Root Gatherers, Volume No. 3 Issue No. 1, 137-150  
2012,  
(Filipiniana Analytics)  
NP

### **Cost-effective analysis of the extracted mucilagenous substance of okra (*Hibiscus esculentus*) and corn starch as tablet binders**

*Supangan, Clair J. , Cañal, Rhea A. , Pascua, Julmarie Claire C. , Gasendo, Che*

Cost-effective pharmaceutical excipients are always desirable and economical because they are coming from the natural resources. Thus, this study aimed to isolate mucilage from okra (*Hibiscus esculentus*) fruits and to explore its utility as a pharmaceutical excipient such as binding agent. Acetaminophen tablets containing cornstarch as a binding agent was used as standard for comparison with the Acetaminophen tablets containing okra mucilage. On the other hand, okra mucilage and cornstarch were compared as individual binders in Paracetamol tablet formulations. Formulated tablets were prepared following the Paracetamol tablet of USP-NF (1995) protocol. Results revealed no significant difference between the okra mucilage and cornstarch in post-compression analysis of the formulated tablet in terms of the weight variation test, hardness, thickness and friability test. Meanwhile, disintegration time was less than 10 minutes. These test results conformed to the specification and standard of USP/NF. However, moisture content test of both formulated tablets failed to conform to the 10% specification of USP/NF since the result exhibited 2.80% of okra mucilage and 3.00% of cornstarch. Test for solubility revealed that both sources were insoluble in cold water; however, okra mucilage was slightly soluble while cornstarch was readily soluble in hot water. Study found that the price per tablet of the formulation had a P0.000012 difference. Formulated Paracetamol tablet with okra mucilage was cheaper than the cornstarch. Okra mucilage had the same efficacy yet was less expensive as tablet binder than cornstarch. (Author's abstract)

**Keywords:** *Chemistry, Pharmacoeconomics, Excipient, Okra mucilage, Friability test, Disintegration time, Weight variation test, Table thickness*

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**Determination of mercury level in three selected canned tuna in the Philippines**  
*Cabrero, Patrizia Marie R. , Roces, Ritzmer Jay C. , Aya-Ay, Adorico M., Go, Karra*

One of the most widely eaten fishes worldwide is tuna. While it is rich in protein, low in fat and calories and is an excellent source of the essential omega-3 fatty acids which help to lower blood pressure and cholesterol, the mercury content of canned tuna can pose great health risk for those who consume them often. In this study, mercury was determined after digestion by the standard methods of Association of Official Analytical Chemists. Mercury contents of canned tuna were determined by cold vapor atomic absorption spectrophotometer. The metal content, expressed in  $\mu\text{g/g}$  wet weight for mercury varied with an average of  $<0.0003$ ,  $0.0421$  and  $<0.0003$  in canned tuna A, B and C, respectively. The values were comparable and in the range of the literature values. The results of this study indicate that canned tuna fish manufactured and sold in Philippines have concentrations below the standards of WHO for this toxic metal. (Author's abstract)

**Keywords:** *Chemistry, Canned tuna, Mercury, Philippines*

**Determination of the nitrite contents as a food preservative in three tuna products from the selected branded and homemade producers in General Santos City**  
*Manliguis, Judy S. , Gualvez, Lloyd Jason H. , Badong, Venc*

This study was conducted to determine the level of nitrites in selected commercial and homemade tuna products such as chorizo, embutido and nuggets from General Santos City; to assess the levels of nitrites based on the tolerable limit of 10 ppm under FDA standard; and to evaluate levels of nitrite content in terms of types of tuna products. Determination of nitrites in the predetermined samples was done using Spectroquant Pharo 300 Photometer. Analyses conducted to three types of tuna products of two different brands. Findings show that branded tuna products (brand A) have lower concentration of nitrites than Homemade (brand B). Of the three types of tuna tested in Brand A, chorizo showed the highest concentration of nitrite. Whereas, Embutido in brand B showed almost 10 times higher nitrite concentration. Moreover, Brand A conformed to the allowable limit while brand B have exceeded the allowable concentration. There is no significant difference in the levels of nitrite concentration on the three types of tuna products in Brand A. This indicates that nitrite concentrations do not differ significantly with each other. However, an existing significant difference on the nitrite concentration of Brand B products. This showed higher concentrations of nitrites. Higher than 10 ppm may pose risk on the health of the consumer since this likely produces carcinogenic N-nitrosamines by the reaction of sodium nitrite with amino acids in heat and acidic environments. Therefore, Government authorities must monitor standard specification of nitrites. (Author's abstract)

**Keywords:** *Chemistry, Environmental chemistry, Toxicology, Tuna products, Nitrites concentration, FDA standard*

### **ERKI/II regulation by the muscarinic acetylcholine receptors in neurons**

*Bliss, T. V. P. , Hulme, E. C. , Jones, Matthew , Futter, Marie , Rosenblum*

Muscarinic acetylcholine receptors (mAChRs) are known to be involved in learning and memory, but the molecular basis of their involvement is not well understood. The availability of new and specific biochemical tools has revealed a crucial role for the mitogen-activated protein kinase (MAPK) family in learning and memory. Here, we examine the link between mAChRs and MAPK in neurons. Using the MAPK kinase (MEK)-specific inhibitor PD98059, we first demonstrate a necessary role for active ERKI/II in long-term potentiation *in vivo*. Using phospho-specific antibodies that recognize the activated form of ERKI/II, we find that the level of ERKI/II activation in brain is regulated by mAChRs. Carbachol, a muscarinic agonist, induces prolonged activation of ERKI/II, without effect on the related kinase SAPK/JNK (stress-activated protein kinase/c-Jun N-terminal protein kinase) in primary cortical cultures. ERKI/II activation is Src-dependent and partially phosphoinositide-3 kinase- and Ca<sup>2+</sup>-dependent but is PKC-independent. M1–M4 mAChR subtypes expressed in COS-7 cells can all induce ERKI/II activation using a signal transduction pathway similar to that operating in neurons. The nature of the signal transduction suggests that ERKI/II can serve as a convergence site for mAChR activation and other neurotransmitter receptors. **(Author's abstract)**

**Keywords:** *Chemistry, mAChR, Extracellular regulated kinase, MAPK, Neurons, COS-7, LTP, Signal transduction*

### **Flavonoid screening and evaluation of formulated syrup of ripe jackfruit (*Artocarpus heterophyllus*) fruit extract**

*Ubalde, Rose Anne V. , Ceniza, Sydney Paole Anne G. , Montañño, Sheana Marie M. , Bacayo, May Flore*

Flavonoids or bioflavonoids are basically polyphenols that have antioxidant, anti-inflammatory, anti-viral, anti-cancer, anti-tumor and anti-diarrheal properties. The study focused on the formulation and characterization of syrup dosage form prepared with the extracted flavonoids from ripe jackfruit (*Artocarpus heterophyllus*) fruit. The fruit extract was obtained by maceration using 95% ethanol as solvent and separated from solvent by rotary evaporation. The gathered extract was tested for the presence of flavonoids. All three trials showed yellow solution when the extract was reacted with diluted NaOH and turned to colorless solution when reacted with diluted HCl, which implies the presence of flavonoids in the extract. The extract was formulated into a syrup and characterized by determining its color, odor, taste, pH and viscosity. The formulated syrup has a dark yellowish- brown color, sweet taste and odor, which resemble the physical properties of a medicated syrup. The pH of three syrups conforms to the specified range which is greater than 5.4 but not less than 6.9. The researchers determined the viscosities of syrups in three trials. The viscosity of plain syrup was also determined for comparison. The formulated syrup 1, 2 and 3

took an average of 60.51 centipoise, 67.48 centipoise and 65.06 centipoise to flow respectively, while the plain syrup took only an average of 37.98 centipoise to flow. It shows that formulated syrup containing ripe jackfruit (*Artocarpus heterophyllus*) fruit crude extract is more viscous than the plain syrup. The statistical test proved that there is an existing significant difference on the viscosity values of prepared syrup, which means that the four types of syrup significantly differ in viscosity. Post Hoc using Tukey's HSD Multiple Comparison Test was conducted and results revealed that of the four types of syrup, syrup 2 showed the highest viscosity value compared with syrup 1, 3 and plain syrup. This suggests that syrup 2 may have higher soluble matters of the extract present than syrups 1 and 3. (Author's abstract)

**Keywords:** *Chemistry, Pharmacology, Phytochemical screening, Flavonoid, Formulated syrup, Artocarpus heterophyllus*

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2012,  
(Filipiniana Analytics)  
NP

0115

### **Metabotropic glutamate receptors trigger homosynaptic protein synthesis to prolong long-term potentiation**

*Abraham, Wickliffe C. , Tate, Warren P. , Thompson, Vida L. , Raymond, Cla*

We investigated the mechanisms by which previous "priming" activation of group I metabotropic glutamate receptors (mGluRs) facilitates the persistence of long-term potentiation (LTP) in area CA1 of rat hippocampal slices. Priming of LTP was elicited by either pharmacological or synaptic activation of mGluRs before a weak tetanic stimulus that normally produced only a rapidly decaying phase of LTP that did not involve protein synthesis or mGluRs. Pharmacological priming of LTP persistence by a selective group I mGluR agonist was blocked by an inhibitor of group I mGluRs and by inhibitors of translation, but not by a transcriptional inhibitor. The same mGluR agonist increased <sup>35</sup>S-methionine incorporation into slice proteins. LTP could also be facilitated using a synaptic stimulation priming protocol, and this effect was similarly blocked by group I mGluR and protein synthesis inhibitors. Furthermore, using a two-pathway protocol, the synaptic priming of LTP was found to be input-specific. To test for the contribution of group I mGluRs and protein synthesis to LTP in nonprimed slices, a longer duration control tetanization protocol was used to elicit a more slowly decaying form of LTP than did the weak tetanus used in the previous experiments. The persistence of the LTP induced by this stronger tetanus was dependent on mGluR activation and protein synthesis but not on transcription. Together, these results suggest that mGluRs couple to nearby protein synthesis machinery to homosynaptically regulate an intermediate phase of LTP dependent on new proteins made from pre-existing mRNA. (Author's abstract)

**Keywords:** *Chemistry, LTP, mGluRs, Metaplasticity, Protein synthesis, Synaptic plasticity, Hippocampus*

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2000 February,  
(Filipiniana Analytics)  
NP

0116



**Pesticide residue analysis of the isolated and formulated ascorbic acid (vitamin C) from Overripe Mango (*Mangifera indica*, linn. Anacardiceae)**

*Selgas, Camille F. , Hao, Maribelle C. , Flores, Mariz Kay M. , Ribo, Annabe*

This study focused on pesticide residue analysis of isolated ascorbic acid from overripe mango (*Mangifera indica*), to evaluate the amount of Vitamin C and assess the significant difference in the Vitamin C content of formulated syrup and commercial product. Overripe mangoes were collected from Bankerohan public market, Davao City. These were subjected to extraction and isolation. Resulting isolate was utilized for formulation of Vitamin C syrup and granular powder. Lastly, assay via 0.1 N iodine solution was used to evaluate percent (%) Vitamin C present in the isolate, formulated syrup and granular powder. Pesticide residue analysis was performed at National Pesticide Analytical Laboratory of the Bureau of Plant Industry, Davao City. The isolate has an amount of 23 to 24 milligrams Vitamin C per milliliter. Analysis revealed no pesticide residues present per sample of Vitamin C via GLC method. Assay of formulated syrup were 99.47% and granular powder were 100.21% content Vitamin C, passing USP limit of 99.5 to 100.5%. Comparison of Vitamin C content between commercial and formulated vitamin C syrup showed a significant difference of 2.439 as subjected to t-test analysis. This affirms that the utilization of overripe mangoes as safe Vitamin C product preparations. Furthermore, quantitative analysis shows compliance with USP standard and assures possibility of preparing quality product from trash material. (Author's abstract)

**Keywords:** *Chemistry, Ascorbic acid, Gas liquid chromatography, Pesticide residue analysis, Mangifera indica*

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2012,  
(Filipiniana Analytics)  
NP

0117

**Physical properties of formulated semisolid dosage forms (ointment, gel and cream) of Hauli (*Ficus septica*, Moraceae) leaf crude extract**

*Penl̄afiel, Michelle A. , Paccial, Ma. Lady Dianne A. , Lusak, Joseph Pet F. , Egarr, Romma Ninnah O. , Casalan, Flo*

The study investigated if Hauli (*Ficus septica*, Moraceae) leaf crude extract can be suitably formulated into gel, cream, and ointment semi- solid dosage forms. Researchers formulated semisolid dosage forms and determined the following: conformation of the product formulations to the USP guideline in terms of the minimum fill test, physical properties of the three formulated semisolid dosage forms and skin sensitivity effect to human subjects. Minimum fill test was performed to compare the weight or volume of the product filled into each container with their labeled weight or volume. This helps in assessing the content uniformity of the products. Results showed that 73% of the formulations passed the USP guidelines in relation to the minimum fill test. Identification of the Physical Properties such as texture, melting point, and consistency of the three formulations was also conducted. Results showed that the three formulations conformed to the ideal physical properties of semi- solid dosage forms, in terms of texture, melting point, and consistency. Determination of seven-day cumulative irritancy patch test of the three formulations was also conducted. Results demonstrated that all of the respondents showed no visible reaction towards the three formulated dosage forms within seven days. Therefore, the three formulated semisolid dosage forms when used on human skin for seven days, was proven to be gentle and non-irritating. (Author's abstract)

**Keywords:** *Chemistry, Ficus septica, Semisolid preparations, Minimum fill test*

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2012,  
(Filipiniana Analytics)

### **Physical stability of commercially available Lagundi (*Vitex negundo*) syrup at varied storage temperatures**

*Aquino, Beberlie D. , Cotiangco, Jocelyn R. , Demavivas, Windel Jane T. , Casalan, Flo*

Quality of crude drug material, plant preparations and finished products depend upon the content variation and stability during storage. The physical and chemical stability of a pharmaceutical product in the container in which it is to be marketed should be tested under defined storage conditions and the shelf-life should be established. This study was intended to determine the physical stability of three commercially available Lagundi (*Vitex negundo*) syrup products by exposing the different brands into various temperatures, level of pH. In order to determine the changes, which occurred in the product, positive control syrup was used. The viscosity, density, its color and microbial load of the product were also tested. Results show there that there was an existing significant difference ( $p < 0.05$ ) on the level of pH at 5° C, 15° C and 25° C. This means that three brands have different pH level and dependent on temperature. However, there was no significant difference on the density and color of the drug at specified temperatures but an existing significant difference on the viscosity of the syrup. Lastly, the microbial growth does not affect with the temperature during the storage condition. This study further suggests investigate at the 35° C storage temperature and sensitivity testing of the new commercially available lagundi product. **(Author's abstract)**

**Keywords:** *Chemistry, Pharmacology, Vitex negundo, Physical stability, Storage temperatures*

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Root Gatherers, Volume No. 3 Issue No. 1, 18-26  
2012,  
(Filipiniana Analytics)  
NP

### **Phytochemical, antibacterial and mutagenic analyses of commercially available kalamansi (*Citrofortunella microcarpa*) fruit extract**

*Padernal, Karen Mae B. , Palaca, Cleo P. , Langreo, Nathalie Grace C. , Nogodula, Ju*

With the emerging diseases and the economic turmoil in the society, people tend to take herbal plants instead of synthetic drugs. Majority of the Filipinos regularly drink kalamansi juice, in different preparations, for boosting the immune system. This scenario had encouraged the researchers to conduct phytochemical and antimicrobial screening of Kalamansi juice since commercial products have evolved in the market. A commercially prepared Kalamansi fruit extract had evaluated the presence of Alkaloid, Tannins and Saponin while Kirby-Bauer disk diffusion method and Minimum inhibitory Concentration (MIC) and Minimum Bactericidal Concentration (MBC) and Potency tests were performed for the antimicrobial evaluation. Likewise, Ames test was utilized for the mutagenic analysis. Results reveal that none of the secondary metabolite is detected. A zone of inhibition of 10.63mm  $\pm$  0.6844 is measured against *Escherichia coli*, while 11.94mm  $\pm$  1.1480 of *Staphylococcus aureus* and 10.25 mm  $\pm$  0.4945 for the *Pseudomonas aeruginosa*. Antimicrobial analysis shows that the fruit extract has a lesser strength to have an antibacterial property. Furthermore, MIC value is identified at 31.25 mg/ml (*P. aeruginosa*), 15.63 mg/ml for *E. coli*, and 500 mg/ml towards *S. aureus*. MBC test reveals that at 31.23 mg/mL concentration can effectively inhibit the growth of *P. aeruginosa* only. Kalamansi extract has a comparable strength with Azithromycin using *E. coli* and *P. aeruginosa*. However, it is not equipotent with Oxacillin in *S. aureus*. Ames test shows that the

extract and/or other ingredients of the product have mutagenic property using Salmonella typhimurium TA98. **(Author's abstract)**

**Keywords:** Chemistry, Pharmacognosy, Microbiology, *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Escherichia coli*, *Citrofortunella microcarpa*

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2012,  
(Filipiniana Analytics)  
NP

0120

**Phytochemical screening and determination of the antioxidant levels of Cabbage (*Brassica oleracea*) and Kangkong (*Ipomoea aquatica*) leaf extracts**  
*Mato, Kay Maieze B. , Lunio, Lewey Joy G. , Dequito, Angelica Mae L. , Ribo, Annabe*

The highly significant correlation between consumption of fats and oils and death rates from leukemia and malignant neoplasia of the breast, ovaries and rectum among persons of 55 years may be a reflection of greater lipid peroxidation. To reduce the possible effect of lipid peroxidation, this study focused on the phytochemical screening and determination of the antioxidant level of cabbage (*Brassica oleracea*) and kangkong (*Ipomoea aquatica*) leaf extract. The two plants were selected based on their antioxidant property. The phytochemical tests include the Wagner's test for Alkaloid; Wilstater Cyanidin Bate- Smith and Shinoda Tests for Flavonoid; and Froth test for Saponin. On the other hand, the reducing power method for antioxidant level was performed using UV-VIS spectrophotometer and Vitamin C was used as the standard. Results reveal that cabbage and kangkong leaf extracts are both positive for flavonoid and saponin however no detection for alkaloid. The level of Vitamin C in kangkong is  $0.34 \pm 0.0525$  while cabbage is at  $0.30 \pm 0.0453$ . Independent t-test analysis shows that there is no significant difference ( $p > 0.5$ ) between the level of vitamin C and the two plant extracts. This indicates that both plant extracts showed potential amount of Vitamin C and may exhibit antioxidant property. **(Author's abstract)**

**Keywords:** Chemistry, Pharmacognosy, Phytochemical screening, *Brassica oleracea*, *Ipomoea aquatica*, Reducing power method, Antioxidant level, Philippines

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2012,  
(Filipiniana Analytics)  
NP

0121

**Role of circadian activation of mitogen-activated protein kinase in chick pineal clock oscillation**

*Okano, Toshiyuki , Harada, Yuko , Hayashi, Yuichiro , Sanada, Kamon, Fukada Yoshi*

A circadian pacemaker generates a rhythm with a period of ~24 hr even in the absence of environmental time cues. Several photosensitive neuronal tissues such as the retina and pineal gland contain the autonomous circadian pacemaker together with the photic-input pathway responsible for entrainment of the pacemaker to the daily light/dark cycle. We show here that, in constant darkness, chick pineal mitogen-activated protein kinase (MAPK)

exhibited an in vivo circadian rhythm in tyrosine phosphorylation and in enzymatic activity with a peak during subjective night. Phosphorylated and hence activated MAPK was rapidly dephosphorylated after light illumination during the nighttime when light induces a phase-shift of the pacemaker. The circadian rhythmicity in MAPK phosphorylation was also observed in the cultured pineal gland, and importantly, MAPK kinase inhibitor treatment during subjective night not only shifted the time-of-peak of MAPK phosphorylation but also induced a remarkable phase-delay of the circadian pacemaker. These results indicate an important role of MAPK for time keeping in circadian clock systems. **(Author's abstract)**

**Keywords:** Chemistry, Circadian rhythms, Pineal gland, Tyrosine phosphorylation, Mitogen-activated protein kinase, Chick

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2000 February,  
(Filipiniana Analytics)  
NP

## ECOLOGY

0122

### **Diversity and ecological status of bryophytes in Mt. Kitanglad, Bukidnon** *Sariana, Lalaine G. , Azuelo, Andrea G., Pabualan, Melanie*

The study inventoried and assessed the diversity and ecological status of bryophytes in Mt. Kitanglad Natural Park. Results of the study revealed 428 species of bryophytes. Of these, 70 genera and 29 families are for mosses, while 98 species, 16 genera and 11 families for liverworts. There are 4 species, 2 genera and 1 family for hornworts. The lower montane forest exhibited high diversity and species richness followed by mossy and upper montane forest. However, the mossy forest exhibited the highest bryophyte cover. The species were confined in specific habitats either as epiphytic on tree trunks, soils, thick litters and on rock surfaces. Local assessment revealed 9 endemic species, 8 for mosses and 1 for liverworts; 2 species, *Ectropothecium ferrugenum* (C. Mull.) Jaeg. and *Thuidium benguetense* Broth ex. Bartr. were found endemic to the Philippines. Some 46 species might be possibly new. Of these, 43 are for mosses and 3 for liverworts; and 4 possibly endangered belonging to the genus of *Dawsonia sp.* and *Breutelia sp.*, 141 species were found to be rare and others are widespread. Some 11 medicinal species for mosses and 6 species for the liverworts were recorded. Field guides, checklist and IEC materials were produced as a result of the research investigation. The bryophyte status showed that the variation in structural forms and the niche preferences attributed to their specific and extreme micro habitats such as those dominated by mosses as epiphytic on trunks, decayed logs, and various substrates indicate high in terms of species richness, as such, has provided a taxonomic, ecological and economic importance. **(Author's abstract)**

**Keywords:** Ecology, Diversity, Ecological, Bryophytes, Mt. Kitanglad, Hornworts, Liverworts, Mosses

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2010,  
(Filipiniana Analytics)  
NP

0123

## Diversity and status of plants in three mountain ecosystems in Southern Mindanao, Philippines

*Coritico Fulgent P. , Amoroso, Cecilia B. , Amoroso, Vic*

This paper presents the diversity and status of plants conservation initiatives in the three mountain ecosystems in Mindanao, Philippines. Representative specimens were pressed, dried, poisoned and mounted as herbarium vouchers. To determine the index of general diversity for trees, 20x20 m sampling plots were established per vegetation type, and in each sampling plot, a 5x5 m sub-plot was laid to determine the species diversity for pteridophytes. Transect walk and sampling plots in 3 mountain ecosystems revealed several vegetation types with Mt. Malindang having 9 types, Mt. Hamiguitan with 5 types and Mt. Kitanglad with 3 types. Species richness was highest in Mt. Malindang (1,164 spp.), followed by Mt. Hamiguitan (878 spp.) and the lowest in Mt. Kitanglad (661 spp.) Regardless of the mountain ecosystem and plant groups, the montane vegetation had high species richness and diversity values than the dipterocarp and mossy forests. Mt. Kitanglad had the highest number of threatened species (92 spp.) while Mt. Malindang and Mt. Hamiguitan had 34 and 35 threatened species each, respectively. As to endemism, it showed that Mt. Hamiguitan had high endemism (34 %) than Mt. Kitanglad (21%) and Mt. Malindang (16%). Furthermore, the three mountain ecosystems showed 64 species as new record in Mindanao and 21 species in the Philippines while two species of *Nepenthes* are new to science. **(Author's abstract)**

**Keywords:** Ecology, Diversity, Species richness, Assessment, Plants, Conservation, Protected areas, Mindanao

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2012,  
(Filipiniana Analytics)  
NP

0124

## Gender analysis of livelihoods, capabilities and shocks in a marine protected area (MPA) of Catanduanes island in Luzon, Philippines

*Masagca, Jimmy T., Morales, Minerva I. Araojo, Aurora E. Tribiana, Estrella T. Vargas, Sonia R. Brillante, Socorro T. Tolentino, Perla A. Prolles, Victoriano*

The political ecology and social representations perspectives were used to understand gender, equity and poverty issues by using Worldfish Centre's matrix and tools for analyzing livelihoods, assets, capabilities and shocks (LACAS) in a marine protected area (MPA) in Luzon, Philippines. We note that, extreme weather disturbances, government's inability to address the real needs and landlessness (or lack of adequate space for farming for diversified livelihoods) are the main reasons why poverty is still unsolved in the study area within the 3km radius of the MPA under study. Several pro-poor programs have been implemented but there were conflicts that evolved from the divergent perceptions and with the use of top-bottom and bottom-up approaches in the MPA governance. After many years of the most highly likely diminished co-participation in governance, the people's organization (PO) for mangroves was re-organized and now at the forefront of maintaining the vibrancy of co-managing the said MPA with the local barangay council headed by a woman barangay captain and more women members of the mangrove association are involved with the "genderized" membership rule. A woman-led market-based approach in a different context to govern MPA adding to the two-other approaches is presented here with the intervening institution of the Gender and Development (GAD) center of the Catanduanes State College (CSC) in the typhoon-prone island east of the Philippine archipelago. **(Author's abstract)**

**Keywords:** Ecology, Marine protected area (MPA), GAD, Poverty, Equity, Catanduanes, Marine space, Coastal areas, Mangroves

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## **Practices, behaviors, and action on climate change and environmental protection and conservation of settlers along the Banks of Oro River, Northern Mindanao, Philippines**

*Lubos, Lesley C. , Japos, Gen*

Rivers are considered to be one of the ecosystems which are sensitive to climate change. It also experiences warming of the earth's atmosphere like any other ecosystems. This study aims to (1). determine the Cagayan de Oro residents' socio-economic activities on the Cagayan de Oro river; (2). determine the values, attitude and beliefs on climate change and environmental protection and conservation; (3). describe the practices, behaviors and action on climate change and environmental protection/conservation. The study used the descriptive survey design involving a purposive sample for 300 household heads living at least 5 years and staying within 100 meters from the river banks and located in the downstream, midstream, upstream sections of the Cagayan de Oro river. The settlers along the river banks have taken permanent residence in the area. They have limited access to social services like light and safe drinking water, disposal of household and human wastes. Due to their proximity to the river and their lack of access to social services they have contributed to the rivers' contamination through their unhygienic behaviors. A formal River Conservation Education Program should be designed in response to the need for a formal structure to train community residents and further enhance their awareness, and a policy review is needed to evaluate the implementation of national and local policies on river conservation. **(Author's abstract)**

*Keywords: Ecology, Climate change, River conservation, Purposive sampling, Cagayan de Oro River, Philippines*

## **The use of a Kernel ecological system in a multi species predator-prey model and climate change impact on biodiversity**

*Padua, Roberto N. , Ontoy, Dex*

The interaction of multiple species of animals in an ecological system is modeled by first reducing the ecological system to a kernel ecological system consisting of keystone species and top predators in the environment through Graph Theory. From the reduced kernel ecological system of keystone species, a system of Lotka-Volterra differential equations is used to describe the predator-prey relationships that exist. The equations for the number of organism per species were derived and additive environmental stochasticity or noise is added to each equation. The noise is assumed to come from an extreme value distribution or Gumbel distribution to reflect the impact of extreme weather conditions on the population dynamics of the entire ecological system. Results reveal a rich dynamical behavior for the system which otherwise would not have been revealed by straight application of deterministic predator-prey models. **(Author's abstract)**

*Keywords: Ecology, Predator, Prey, Graph theory, Lotka-volterra, Multi species model, Stochastic model*

### **Wing ecomorphology and flight performance of bats in Pisan Caves, Kabacan, North Cotabato, Philippines**

*Breta Aza, Bryan Lloyd P. , Casim, Lothy F. , Tanalgo, Krizler C., Achondo, Marion John Michael M. , Tabora, Arie*

This research was conducted to study the functional morphology of the wings and flight performance of bats from Pisan caves, Kabacan, Cotabato, Philippines. This was carried out using mist netting method and measurements of mass (M) and basic wing components that include wing span (B), wing area (S). Flight parameters such as aspect ratio and wing loading were computed from the values of wing component and predictions were made using aerodynamic principles. A total of 48 individuals representing eight species were studied. Results showed that *Emballonura alecto*, *Myotis horsfieldii*, and *Pipistrellus javanicus* have an average wing loading and low aspect ratio that indicate an intermediate speed in flight and exceptional maneuverability that is appropriate for catching moving prey in a cluttered environment. High wing loading and low aspect ratio were noted in *Cynopterus brachyotis*, *Eonycteris pelaea*, *Hipposideros diadema*, *Rhinolophu sarcuatus* and *Rousettus amplexicaudatus*. Asian Journal of Biodiversity 114 These values indicate that these bats though fast flyers, have poor maneuverability in terms of flight performance. The study suggests that wing morphology of bats affects flight performance and habitat selection which implies that maintenance of the habitat leads to the stability of the species population. **(Authors' abstract)**

**Keywords:** *Ecology, Bats, Pisan Caves, Wing morphology, Flight parameters, Habitat selection*

## **EDUCATION**

### **Determinants of performance of graduates in the medical technologist licensure examination**

*Pasia, Jasmen S., Garzon, Marilyn U. , Bauyot, Marleonie*

The public gauges the quality of academic programs of a school from the results of licensure examinations. School leaders use the examination basis for intervention programs to upgrade quality. This study aims to find the factors of performance of San Pedro College graduates in the Medical Technologist Licensure Examination (MTLE). Mixed – methods research design was utilized in describing the predictors of the graduates' performance in the MTLE. A total of 304 graduates distributed according to the year of graduation from 2005-2009 who took the MTLE on September of the same year they graduated were subjects of this investigation. Results of this study

demonstrated that all independent variables were correlated with the performance of the graduates in the MTLE, with clinical internship WPA having the highest coefficient of correlation of .540. Further analysis using stepwise regression model revealed that clinical internship WPA is the best predictor for passing the MTLE. This may suggest that a strengthened internship program would help improve the graduates' performance in the MTLE. Thus, it is recommended that consultations from students, alumni, and faculty be done to draw out suggestions on how to improve the existing practices of the internship program. The results also demonstrated that there is a low negative correlation between DAT and MTLE. This may mean that higher DAT is not a guarantee that the graduate will perform in the MTLE. (Author's abstract)

**Keywords:** Education, Board examination, Internship program, Clinical internship, Medical technology

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NP

0129

### **Learning styles and academic performance among radiologic technology students of Liceo de Cagayan University**

*Arcadio, Mark Leonard R. , Ambat, Charlie L. , Amandoron, Raquel Lea M. , Orong, Denise O., Argayoso, Jed Aliso*

Each student has a preference in learning. The success of every student is not on how high the grades they are getting but on how much they have learned. Determining the learning styles of the student is important in order for the teacher to know if their teaching style matches with how students learn. The study was conducted to determine the learning styles and the level of academic performance among first year, second year, and third year students of Radiologic Technology students of Liceo de Cagayan University, S.Y. 2009-2010. A descriptive correlational method of research was used in this study. The researchers used the stratified random sampling by grouping the students by year level. The data were computed and analyzed using weighted mean, frequency and percentage, and multiple regression analysis as their statistical treatment. The study revealed the following findings: Among the learning styles, students are more on visual/verbal. Among the teaching styles, the faculty members are more on verbal. In the level of academic performance, students fall in the below average level. There is no significant relationship between the learning styles and academic performance of the Radiologic Technology students. It is also concluded that the teaching style does not affect the learning styles and academic performance of the student except for their kinesthetic. (Author's abstract)

**Keywords:** Education

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2013,  
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NP

0130

### **Performance of the teacher education students in chemistry**

*Gutierrez, Ruby*



This study investigated the factors that affects the performance of students in chemistry. Factors in the study are students' backgrounds, interests, fears, and teachers' teaching – learning strategies in theory and in laboratory rooms, management, and functions. Findings showed that chemistry was interesting and enjoyable but a much feared subject. Excellent personality and motivation, lecture or laboratory room management, and frequent use of the traditional methods of teaching affected the performance. Student-respondents performed fairly when they were not handling the materials correctly because of the fear of spilling substances and breaking parts of the materials. Furthermore, students' ethnicity and teacher's deep concern and encouragement showed a significant effect on the performance. **(Author's abstract)**

**Keywords:** Education, Chemistry performance, Fears, Interest, Laboratory management, Students

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2014,  
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NP

## **ENGINEERING**

**0131**

### **Adaptive channel linear equalization using simulink** *Sybingco,*

This paper will help DLSU-ECE students taking-up COMLAB2 visualize the concept of adaptive filter of Simulink applied to digital communication specifically in the area of channel equalization. The results of the simulation similar to the convergence of adaptive filter coefficients and constellation diagram of the received signal with and without the adaptive filter are presented in this paper, as well as the frequency response of adaptive filter, channel, and the resulting frequency response of combined channel and adaptive filter. The results of the simulation proved that the adaptive filter coefficients converged to the desired response. (Author's abstract)

**Keywords:** Engineering

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2006,  
(Filipiniana Analytics)  
NP

**0132**

### **Alternative technology options for the chemical treatment of Polychlorinated biphenyls** *Abella, Leonila C. , Gallardo, Susan M. , Centeno, Carm*

Although high temperature incineration technology is a standard method of destruction of bulk polychlorinated biphenyls (PCBs), any high-temperature burning is prohibited under the Clean Air Act of the Philippines. The formation and subsequent release of toxic gases is also a constant issue in the application of incineration for toxic and hazardous wastes. This paper presents several viable non-incineration technologies for their applicability to and limitations for treating PCB-contaminated materials. The following alternative technologies are presented: chemical dechlorination, chemical reduction, solvent extraction, soil washing and soil flushing, including emerging alternative

technologies, such as supercritical water oxidation, solvated electron technology and advanced oxidation processes. The paper covers a description of each technology, matrix-applicability, and advantages and limitations of some technology options. From the discussion, it is apparent that the selection of applicable technology depends mainly on site- and matrix-specific characteristics. It may also be noted that no single non-incineration chemical technology is applicable to all PCB-contaminated materials. Combining two or more technologies in series may offer advantages over the use of a single technology in achieving the required degree of treatment. (Author's abstract)

**Keywords:** *Engineering, Polychlorinated biphenyls (PCBs), Chemical treatment, Alternative technologies, Emerging technologies*

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Inhenyeriya, Volume No. 3 Issue No. 1,  
2003,  
(Filipiniana Analytics)  
NP

0133

### **Analytic Hierarchy Process (AHP) for environmental impact analysis and decision-making in industry**

*Pineda-Henson, Ruby, Culaba, A*

A structured and comprehensive methodology for environmental decision-making in industry was developed based on the Life Cycle Assessment (LCA) approach, where the impacts on the environment at various stages of the manufacturing process were evaluated. To account for any interplay between quantitative and qualitative factors, the LCA was combined with the Analytic Hierarchy Process (AHP). The latter was used to provide a quantitative tool for the design of a set of weighting factors for impact and improvement analyses. In order to demonstrate the developed methodology, the AHP was applied to pulp and paper manufacture and was found to be a valuable tool for evaluating the environmental impacts and for prioritizing the process improvement options relative to these impacts. (Author's abstract)

**Keywords:** *Engineering*

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Inhenyeriya, Volume No. 1 Issue No. 2,  
2000,  
(Filipiniana Analytics)  
NP

0134

### **Application of a knowledge-based expert system for intersection improvement**

*Sigua, Ricardo G., De Guzman, M*

The KBES developed is a menu-driven type using open source programs with three very important web development tools: The Apache for web server, MySQL for database management, and PHP (Hypertext Preprocessor) for scripting "C" program language. The system guides the user in selecting exact location of congestion or road crash prone areas through an interface. The user deals with series of questions in identifying the cause of the problem which leads to potential traffic control alternative solutions. The KBES was tested at two local isolated intersections in Quezon City, Philippines for validation. The intersections validated are signalized and unsignalized three-legged intersections. The KBES recommendation for the signalized intersection is to increase

right turning radius of the corner pavement for trucks to avoid conflict and delay with other vehicles. For the unsignalized intersection, KBES recommended a left turn prohibition at major approach to avoid delay and collisions at such approach. **(Author's abstract)**

**Keywords:** *Engineering, Knowledge-based expert system, Traffic congestion, Traffic accident, Intersection*

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Philippine Engineering Journal, Volume No. 37 Issue No. 1, 1-22  
2016,  
(Filipiniana Analytics)  
NP

0135

### **Artificial Neural Network (ANN) for modeling ternary distillation in a packed column**

*Lacar, Honorina L., Olano, Jr., Servillano Sb. , Dadios, Elmer*

Artificial Neural Network (ANN) was used as an alternative in predicting the separation performance of a ternary distillation process in a packed column with structured packing of a wire-gauze type. In the absence of an actual prototype, the neural network model predicted the effects of reflux ratio, external heat flux through the wall of the distillation column, and feed location with respect to the concentrations of the products. The liquid stream concentration profile within the column was also predicted. Results showed that the ANN approach was capable of modeling complex distillation operations with acceptable accuracy. **(Author's abstract)**

**Keywords:** *Engineering, Packed column distillation, Simulation, Artificial neural network modeling*

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Inhenyeriya, Volume No. 2 Issue No. 2, 27-39  
2001,  
(Filipiniana Analytics)  
NP

0136

### **Assessing the sensitivity of wastewater reuse networks to noisy loads using possibility theory**

*Tan, Raymon*

For many water-intensive industrial washing operations, wastewater reuse networks (WWRNs) are effective means of simultaneously minimizing both water utility consumption and process effluent generation. A dual process integration approach based on pinch technology for targeting and mathematical programming for WWRN synthesis is often employed. The success of the WWRN design is highly sensitive to the availability of reliable process data. The assumptions employed in the network design process, however, are typically deterministic, whereas actual operating conditions may involve varying mass loads. Under such conditions the maximum tolerable concentrations of some process streams may be exceeded, leading to product quality problems. This work demonstrates the use of possibility theory in assessing the vulnerability of WWRNs to uncertain load conditions. **(Author's abstract)**

**Keywords:** *Engineering*

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**Assessment of chemical and biological contaminants and improvement of air quality in air-conditioned urban buses**

*Azarcon, J.T. , Austria, M.S. , Belino, Manuel C., Caguioa, R.C. , Reyes,*

The study assessed the quality of air in-airconditioned urban buses in Metro Manila and recommended interventions on how to improve it. Specifically, the study assessed the concentration of air contaminants in air-conditioned urban buses. The air contaminants assessed included airborne bacteria, carbon monoxide, sulfur dioxide, nitrogen dioxide and total volatile organic compounds. A survey of frequently contracted sicknesses and illnesses due to exposure to poor air quality in urban air-conditioned buses. It was found that measured contaminants are within acceptable limits of ASHRAE indoor air quality standards and DOLE standards. (Author's abstract)

**Keywords:** *Engineering*

**Assessment of life-cycle greenhouse gas emissions of compressed and liquefied natural gas with possibilistic uncertainty analysis**

*Culaba, Alvin B. , Tan, Raym*

Compressed and liquefied natural gas (CNG and LNG, respectively) were subjected to life-cycle inventory analysis (LCI), focusing on carbon dioxide and methane emissions. The resulting inventory values represented the cumulative emissions from the extraction, processing, transportation, and storage of CNG and LNG as alternative automotive fuels. The analysis also included the effects of secondary energy inputs, such as electricity, into the natural gas life cycle. However, the assessment departed from the standard LCI methodology by the incorporation of data uncertainty propagation modeling using fuzzy possibility theory. This procedure addressed the data quality issues recognized as major factors in determining the validity of inventory models. The possibilistic simulation was carried out using a modified version of Argonne National Laboratory's GREET 1.5a fuel-cycle inventory model. The results of the possibilistic uncertainty propagation were comparable to those of conventional sensitivity analysis and probabilistic modeling. (Author's abstract)

**Keywords:** *Engineering, Life-cycle assessment, Data uncertainty, Possibility theory*

## **Benchmarking of productivity performance across Cebu-based costume jewelry companies using data envelopment analysis (DEA)**

*Kabilig, Wilfrido D. , Beng Hui, Den*

The costume jewelry industry in the Philippines is made up of small and medium size enterprises (SMEs) according to the Department of Trade and Industry (DTI) and the Canadian-funded Private Enterprise Accelerated Resource Linkage program (PEARL2). Each of these companies, mostly having started as small family enterprises, evolved into major exporters of Philippine products through their own unique manufacturing set-up engaging in various indigenous designs. Benchmarking analysis on manufacturing performances across these companies is difficult to perform because of the lack and/or non-standard manufacturing measures being used among the industry players and because of the differences in manufacturing practices, organization, product types, and labor, to name a few. **(Author's abstract)**

**Keywords:** *Engineering, Benchmarking, Data envelopment analysis (DEA), Costume jewelry*

DLSU Engineering Journal, Volume No. 18 Issue No. 1,  
2006,  
(Filipiniana Analytics)  
NP

## **Buffered mainflush formulation for sandstone acidizing**

*Aquino, Cristina G. , Cabigon, N*

New non-hazardous mainflush mixtures for sandstone acidizing had been formulated. These formulations consisted of hydrofluoric acid or ammonium bifluoride and halogenated monocarboxylic acids, which served as buffering agents. The effectiveness of these formulations depended on buffering to enhance HF-silica reaction by controlling the pH and the available fluoride ions. Non-use of HCL eliminated the need for additives that were conventionally added to prevent casing damage. The solubility data indicated that the new formulations were comparable in terms of dissolving power to the formulation currently used by the geothermal industry. However, the new formulations were found to be more effective in controlling available fluoride ion concentration in solution, a property that enabled the mixtures to penetrate deep into the formation. The buffering ability of the new formulations to sustain the desired pH could be utilized to adjust the mixture to suit a particular acid job. **(Author's abstract)**

**Keywords:** *Engineering, Acid stimulation, Buffering, Silica solubility, Available fluoride*

Inhenyeriya, Volume No. 1 Issue No. 1, 11-21  
2000,  
(Filipiniana Analytics)  
NP

## **Bus passenger demand models for Metropolitan Manila**

*Fillone, Ale*

ultiple regression models were developed to make separate estimates of the number of bus passengers embarking during the morning and those during the afternoon peak periods along specified bus-route segments in Metropolitan Manila. The dependent variable in the models was log-transformed to achieve normality of data. Since limited bus volume surveys were performed, the distribution of time spent by buses along a particular segment was used to describe the distribution of bus volume along it. To estimate the volume of embarking passengers along the particular bus-route segment, the average bus volume along the segment was multiplied by the on board survey results of the number of embarking passengers per bus along the segment. Thirteen proposed new bus routes were identified using the Equilibre Multimodal, Multimodal Equilibrium (EMME/2) transport modeling software. The developed models were then applied to the proposed new bus routes to predict bus passenger embarking on a per-route segment basis. The models were able to satisfactorily determine the number of embarking passengers. (Author's abstract)

**Keywords:** *Engineering, Bus passenger demand, Urban public transport, Bus service characteristics, Multiple regression analysis, Log transformation*

Inhenyeriya, Volume No. 1 Issue No. 2, 23-40  
2000,  
(Filipiniana Analytics)  
NP

## **The challenges and opportunities of environmental catalysis in the natural GAS-based industry and in Academe**

*Gallardo, Susan M. , Abella, Leoni*

A rich deposit of natural gas was discovered in 1992 in the Malampaya Deep, offshore Palawan, in the South China Sea. The Malampaya Deep Water-Gas-to-Power project could provide big opportunities to utilize the natural gas and expand the gas- based industries, including power, transport and chemicals. The Philippine Energy Plan (1996-2025) of the Department of Energy (DOE) is a formal challenge addressed to the power industry, transport, and household sectors to accomplish the plan in due time. The utilization of natural gas creates greater opportunities for collaboration among these sectors, the government and the academe. The Department of Science & Technology (DOST), through the Philippine Council for Industry, Energy Research & Development (PCIERD), is working closely with the DOE. In answer to PCIERD's call for the development of natural-gas technologies, the Environmental Engineering Laboratory of the College of Engineering, Research, Training & Consultancy (CERTC) of De La Salle University-Manila has started a research programme on the application of Catalysis in the area of methane utilization to produce synthesis gas. This paper discusses the strengths and weaknesses of this programme, the chemistry of steam reforming, carbon dioxide reforming and partial oxidation. The review of literature includes current and promising industrial options to indirectly convert natural gas (via synthesis gas) to easily transportable chemicals (on-site processing). (Auhor's abstract)

**Keywords:** *Engineering, Malampaya gas field, Environmental catalysis, Synthesis gas, Methane reforming*

Inhenyeriya, Volume No. 2 Issue No. 1,  
2001,  
(Filipiniana Analytics)

## Comparative Study of Various Models of a Fixed Bed Hydrogen Sulfide Biofilter

*Shoda, Makoto , Uy, Marylou M. , Tengkiat, Andrew Be*

Four models of a fixed-bed hydrogen sulfide (H<sub>2</sub>S) biofilter with immobilized *Thiobacillus thioparus* DW44 were studied and tested: pseudo-homogeneous model, shell balanced model, deep biofilm model and dispersion model. Modification of the reaction rate kinetics from 0th or 1st order kinetics to purely Monod kinetics were done. For the first time, the pseudo-homogeneous and dispersion models were applied to biological systems; these models were commonly used to model chemical reaction systems only. The deep biofilm model could be suitable for biofilters but the validity of its use should be investigated further by establishing the effective biofilm surface area. The test results showed that the model was solvable when effective biofilm surface area was between 4 and 7 %. This area was assumed to be 5% of the actual surface area of the packings. Of the four models tested, the pseudo-homogeneous model was found to be the best model for the system based on the analysis of residuals and PRESS (Predicted Sum of Squared) values. (Author's abstract)

**Keywords:** *Engineering, Modeling, Biofilm, Biofilter, Pseudo-homogeneous model, Dispersion model*

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Inhenyeriya, Volume No. 1 Issue No. 1, 54-67  
2000,  
(Filipiniana Analytics)  
NP

## Continuous extraction process of chitin from discarded shells of Philippine blue swimming crab (*Portunus pelagicus*)

*Ongkiko, Aileen Grace M., Fernando, Lawrence Anthony T. , Diaz, Leslie Joy*

Crab shells are often found discarded from local seafood processing plants that end up as waste hauled to landfills. However, high purity chitin has been extracted by chemical methods from this material which is useful in various applications like sutures and scaffolding in medical applications. The viable sources of chitin were selected among the shells of blue swimming crab (*Portunus pelagicus*), mud crab (*Scylla serrata*) and tiger prawn (*Penaeus monodon*). Tiger prawn was shown to have the highest yield of chitin at around 24% while the two varieties of crab yielded only about 10%. However, considering the accessibility and availability of high volume of blue swimming crab shells from crab processing plants, this was chosen as the raw material for subsequent investigations. Moreover, the process that will be established can still be suitable for both sources. Extraction process includes demineralization and deproteinization stages and factors affecting them have been studied. These include acid concentration and shell size for the demineralization stage and alkaline concentration and shell size for the deproteinization stage. Retained inorganic component after demineralization and protein content removed from deproteinization were determined using compositional analysis via Energy Dispersive X-ray Fluorescence technique and Lowry assay, respectively, to understand the effects of these factors on their respective processes. It was found that high acid concentration (greater than 1 N) at room temperature could sufficiently remove the inorganic components of the carapace while high alkaline concentration (greater than 1 N) applied to fine-sized demineralized shells produces high purity chitin similar to commercially-available technical grade chitin.

A refinement of the chitin extraction process was subsequently performed through the development of the bench-scale extraction process. It was found out that some of the stages in the laboratory-scale extraction can be eliminated performing an uninterrupted two-stage chemical extraction process and still be able to produce similar quality of chitin with doubled product recovery. **(Author's abstract)**

**Keywords:** *Engineering, Chitin extraction, Chitin, Biodegradable polymers, Portunus pelagicus, Scylla serrata, Penaeus monodon*

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Philippine Engineering Journal, Volume No. 37 Issue No. 2, 37-52  
2016,  
(Filipiniana Analytics)  
NP

0145

### **Degradation of trichloroethylene by zero-valent iron**

*Baraoidan, Wilheliza A., Gaspillo, Pag-asa D. Shim, Hojae Yang, Shang-T*

The contamination of groundwater by trichloroethylene (TCE), generally used as a cleaning solvent, is still a major environmental concern. The degradation of TCE by using zero-valent metal has emerged to be a promising technology. Zero-valent iron is cheap, nontoxic, and works well in the degradation of a wide range of chlorinated compounds. Tests on the degradation of TCE by zero-valent iron were conducted to determine the effect of initial pH, TCE concentration and amount of iron on the degradation rate of TCE. Different concentrations of simulated TCE solution were mixed with iron powder, finer than 100 mesh, in 120-mL serum bottles. The ratio of iron powder (in mg) to initial TCE solution (in ml) was varied at 10, 12.5 and 15, initial concentrations of TCE, at 5, 10, 20, 60, 80 and 100 mg/L; and initial pH at 5, 7 and 9. Analyses of results showed that as the initial concentration of TCE increased, the initial degradation rate of TCE also increased. The degradation of TCE was found to be pseudo-first order with respect to the organic compound itself. The dechlorination processed worked well when the solution was initially acidic (pH=5) to almost neutral (pH=7); dechlorination was not observed when the solution was initially basic (pH=9). For a constant initial TCE concentration of 5 mg/L, rate constant (k) was related to the iron to initial TCE ratio (r) by a quadratic equation. On the other hand, when the ratio (r) was fixed at 12.5 mg Fe<sub>0</sub> per mL of 5 mg/L TCE solution, the rate constant varied linearly with the initial TCE concentration. **(Author's abstract)**

**Keywords:** *Engineering, Trichloroethylene, Zero-valent iron, Dechlorination*

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Inhenyeriya, Volume No. 1 Issue No. 1, 1-10  
2000,  
(Filipiniana Analytics)  
NP

0146

### **Design and development of a power-driven stripper harvester with rethresher and cleaner**

*Salazar, Godofredo C. , Gopez, Alfred K. , Bayona, Rich*

Planted on 147 million hectares globally, rice is the only cereal crop consumed almost entirely by humans, providing 35 to 60 percent of calories on 3.0 billion dinner tables in asia alone. To be at par with the continuing population growth, the flow of improved rice technology should be channeled to the farmers at a more rapid rate and harvest



mechanization needs to be given much attention. In the Philippines, stripper harvesting technology is in the process of development. This is potentially a more energy-efficient method of mechanical harvesting whereby the grain from the straw is combed or stripped away, leaving most of the rice straw anchored in the field. A team of researchers from the Mechanical Engineering department of De La Salle University developed a stripper harvester with rethresher and cleaner based on the Stripper Gatherer (SGBOO) design at the International Rice Research Institute (IRRI) with the advantage of cost, efficiency and degree of portability. The cleaning mechanism of developed unit is currently being improve and the design is being optimized. (Author's abstract)

**Keywords:** *Engineering, Stripper harvester, Rethresher, IRRI stripper gatherer*

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Inhenyeriya, Volume No. 2 Issue No. 2, 49-54  
2001,  
(Filipiniana Analytics)  
NP

0147

### **Design, fabrication, and test of a prototype automated tiling machine for granite and marble**

*Su, Charles Tyrone J. , Palomares, Henzi Chester M. , Manalili, Mark Wilson D. , Go, Jasmin Lizette G. , Bernardino, Cado Felicito B. , Chua, Al*

This study presents the implementation of a prototype automated tiling machine for granite and marble geared towards providing a tiling equipment with increased efficiency for the local marble and granite industry. The design of the system consists of the mechanical, electronic and software components. The mechanical set-up utilizes a gear-rack assembly for the positioning of the cutting line, screw-type assembly coupled with a typical marble cutter for the cutting axis, a rack-screw type for up and down motion of the cutter and clamping, and a gear reduction rotating bed design for rotation of the material. The electronic component consists of stepper and DC motors, together with their corresponding interfacing devices, are connected to the mechanical parts and to the software component via the parallel port. The software component includes manipulation of AutoCAD drawings to G-code text files with a manipulation program that controls the movement of the automated machine. The results showed that combining the different components led to a workable automated tiling machine. (Author's abstract)

**Keywords:** *Engineering*

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DLSU Engineering Journal, Volume No. 18 Issue No. 1,  
2006,  
(Filipiniana Analytics)  
NP

0148

### **Design, fabrication, and testing of flexible noodle separator in pouch noodle packaging**

*Garcia, Karlo Roman C. , Chua, Al*

The project was to create a Flexible Noodle Separator (FNS) that could transform into a position to equally separate and distribute the noodles from noodle making to the packaging process during normal operation (four packaging lines are running) and when one of the four lines is down. The designed mechanical linkages have the ability to be managed on a desired position depending on which packaging line is down. It can change to a position that will

block the way of the noodles on the non-running line and make the noodles flow on IV the operating lines. The effectiveness of FNS was tested in the Pouch Line Packaging process, which revealed a potential cost savings and showed that it could help improve the process.1.0. (Author's abstract)

**Keywords:** *Engineering*

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DLSU Engineering Journal, Volume No. 18 Issue No. 1,  
2006,  
(Filipiniana Analytics)  
NP

0149

### **Design for variable-geometry rotor of vertical-axis wind turbine using CATIA software**

*Bugtai, Nilo T., Jungao, E.*

A ten-year plan of Philippine Energy which started in 1999 projected a wind energy contribution of 410 mega watts. The action is a part of its commitment to United Nations Framework Convention on Climate Change and is also to utilize the country's wind resource potential. However, the country is situated in a typhoon-belt Wind gust over 250km/h during typhoon is one of the key problems that may hinder the wind turbine development in the country. In the search for an alternative solution, a variable-geometry vertical axis wind turbine rotor (3.6meter) as a test model with straight and symmetrical airfoil blades was designed. The rotor was so designed that the blades can be reefed to reduce the size of its projected area to limit both power and blade loads by self-acting control. The reduction in load was estimated based on blade element-theory; and used in the calculation of stress reduction using CATIA Version 5 design software. In the experiment, the test model was subjected to air velocities generated by industrial fans. Rotor torques for corresponding rotational speeds were calculated by inertia-acceleration method. An omni-directional cup anemometer and a non contact speed meter were used in wind speed and rotor's rotational speed measurements, respectively. A maximum power of 2.5watts (1.4%Cp) was generated by the rotor at 10.7 m/s free-air velocity and at 70 rotor rpm with blades not reefed. At the maximum reef of 60° (from vertical position) with a relative rotor area of 41 %, the torque load reduces up to 86%. The data can be used as a guide in the design of a 3-meter prototype rotor. (Author's abstract)

**Keywords:** *Engineering, Rotor, Vertical-axis, Wind turbine, CATIA software*

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2006,  
(Filipiniana Analytics)  
NP

0150

### **Determination of injection parameters using line pressure and solenoid signals from a common rail direct injection diesel engine**

*Santos, Ervin S., Quiros, Edwin*

The determination of fuel injection parameters is very important in studying diesel engines. Knowing what happens to the fuel as it is being injected onto the engine cylinders may help in understanding the outcome of different engine operations. Fuel injector behavior affects what happens inside the engine cylinders and may help explain fuel consumption, torque

and power produced, emission characteristics, and other engine performance metrics. Much attention is given to the operation of diesel engines nowadays brought about by the interest in alternative fuel sources. This study describes a method of estimating actual main injection (excluding pilot injection) parameters: start, end, and duration of injection for a Common-Rail Direct Injection (CRDI) engine based on the information given by the fuel supply line pressure sensor mounted on the tubing that connects the fuel injector to the common rail. The timing of the fuel supply line pressure signal was compared to that of the associated Electronic Control Unit (ECU) injection command signal to validate a sensible phase relationship. Distinct shape characteristics of the line pressure signal were identified and considered as start and end of actual main fuel injection. The estimation method was used to determine fuel injection behavior of a CRDI engine running at full load from 800 to 4000 rpm. The study also showed that increasing RPM increases the injection duration, average line pressure and advances the injection timing. **(Author's abstract)**

**Keywords:** *Engineering, CRDI, Line pressure, Solenoid signal, Injection duration*

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Philippine Engineering Journal, Volume No. 37 Issue No. 1, 79-90  
2016,  
(Filipiniana Analytics)  
NP

0151

**Developing learning modules for a computer-aided structural engineering subject at De La Salle University**  
*Oreta, Andres Wins*

Civil Engineering schools may integrate the use of commercial computer software in the civil engineering curriculum to enhance the teaching and learning process. A one-unit (three-hour laboratory) computer oriented course on "Computer Methods in Structural Engineering" is introduced in the undergraduate civil engineering curriculum at De LaSalle University, Manila. This computer laboratory course aims to introduce the students on the use of state-of-the-art civil engineering software in solving both routine and complicated problems in the analysis and design of structures. One of the software that will be used is GRASP, a user friendly software for two-dimensional analysis of framed structures. This paper describes the development of learning and instructional materials using a commercial software to deepen the students' understanding of the modeling, analysis and behavior of structures in 2D. (Author's abstract)

**Keywords:** *Engineering*

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DLSU Engineering Journal, Volume No. 18 Issue No. 1,  
2006,  
(Filipiniana Analytics)  
NP

0152

**Development of a large-scale bioreactor system for plant cell culture of *Hyoscamus muticus***  
*Roces, Susan A. , Bacani, Florinda T. , Curtis, Way*

The development of large-scale systems for the cultivation of plant cell suspensions could enable the growth of biomass for the production of secondary metabolites. The only suitable instrument to cultivate large masses of plant

cells would be a large aseptic bioreactor, which design could profoundly alter the biological response of a plant tissue culture. An airlift bioreactor system, lined with polyethylene polymer plastic. sterilized with 10% ethylene oxide in 90% carbon dioxide gaseous phase mixture was devised for the mass cultivation of *Hyoscyamus muticus* cell-suspension culture. The growth of this plant cell culture was demonstrated in a large plastic-lined airlift bioreactor. After 13 days of batch culture, the 40-liter gas-sparged airlift bioreactor (28.5~1 working volume, w.v.) contained cells with a biomass density of 2.9~kg. fresh weight (FW), equivalent to 199~g dry weight (DW). The growth of the culture achieved a sustained specific growth rate of 0.26 day<sup>-1</sup>. The growth performance of cell culture in this reactor was found to be comparable to that in a modified stirred-tank bioreactor, also sterilized with EtG. (Author's abstract)

**Keywords:** *Engineering*

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Inhenyeriya, Volume No. 1 Issue No. 2,  
2000,  
(Filipiniana Analytics)  
NP

0153

### **Development of a MATLAB-based controller for the CRS robotics A255 robot arm**

*Santiago, Arthur P*

This study focuses on the development of a Windows-based controller for the CRS Robotics A255 Robot Arm. Previously, the controller interface for the robot arm is DOS based making it difficult to use. The result of this study is a user-friendly controller which utilizes a graphical user interface (GUI) generated by MATLAB with the use of the Robot Toolbox by Peter Corke. Movements modeled on the host computer are then mimicked by the robot arm. In driving the robot arm's motors, an external circuit was built using LM628 motion controller ICs. All data exchange between the host computer and the external circuitry is done through serial communications. Comparison between simulated movement and actual robot movement and behavior were used to gauge the effectiveness of the robot arm controller. (Author's abstract)

**Keywords:** *Engineering*

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DLSU Engineering Journal, Volume No. 18 Issue No. 1,  
2006,  
(Filipiniana Analytics)  
NP

0154

### **Development of pollution prevention strategies using swarm intelligence**

*Tan, Raym*

Particle swarm optimization (PSO) is a metaheuristic algorithm based on the behavior of social animals. Its key advantages are its computational efficiency and ability to locate global optima by incorporating "stochastic kicks." Use of a discretized PSO in selecting an optimal array of pollution prevention techniques for day brick production is described. Statistically significant improvement in the rate of successful convergence was achieved by modifying the basic PSO algorithm. (Author's abstract)

**Keywords:** Engineering, Particle swarm optimization (PSO, Metaheuristic algorithm, Stochastic kicks, Optimal array

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DLSU Engineering Journal, Volume No. 18 Issue No. 1,  
2006,  
(Filipiniana Analytics)  
NP

0155

**Disk and box dimensions: selected case studies of fractals with IFS codes**  
*Salau, T. A.O., Ajide, O*

Disk and box count methods enjoyed higher popularity among known methods for estimating the fractal dimension of computable fractals in dimensional Euclidean space for their relative ease of implementation among others. The present study investigated the suitability of disk and box count methods using Monte Carlo approach for the estimation of fractal dimension of some selected fractals with IFS.

Six (6) fractals with IFS were identified from literature. Algorithms (coded in FORTRAN) based on Monte Carlo approach was developed for disk and box count methods. Common factors to all studied fractals are seed value for random number generation (9876), start coordinates (1,0.5), transient solutions (1000), steady solutions (5000), total number of corresponding scale of examinations (20) and ten (10) trial times. The FORTRAN programme computes both transient and steady solutions of fractals with IFS, Estimated dimension and other relevant quantities of this study while graphs were plotted using Microsoft office Excel 2003.

Programming for the disk overlay is less skill demanding than box overlay as experienced from this study. Estimated dimensions vary from transient to steady for cases. Dimension variation transient from lower dimension value to higher steady dimension value except for some cases investigated with box method. Estimated disk dimension was consistently on the lower side of actual dimension with absolute relative error (%) range of 0.5 to 19.6 for cases. Similarly 66.7 percent of estimated box dimensions were on the lower side of actual dimension with absolute relative error (%) range of 0.9 to 17.2 for cases. The average absolute error (%) for disk and box methods was 6.7 and 6.8 respectively. Actual dimension was sandwiched between estimated disk dimensions and box dimensions in 33.3% for cases.

Preference can be given to use of disk count method for solving fractal dimension problems for its capability to estimate fractal dimension consistently and the fact that the method is averagely less error prone compared with box method. **(Author's abstract)**

**Keywords:** Engineering, Fractal Dimension, Fractal, IFS Codes, Monte Carlo

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, Volume No. 1 Issue No. 5, 234-247  
2012 May,  
(Filipiniana Analytics)  
NP

0156

**Dynamic space allocation and layout model for the semiconductor industry**  
*Seva, Rosem*

A goal-programming model was developed that considered assignment of product lines to sites at different periods and allocation of space to these product lines. The assignment of product lines was based on handling cost; the allocation of space to different product lines, on the contribution margin of the latter. This model could be applied in a semiconductor company where the problem of allocating space to different product lines always constituted a problem, especially during the phase-out of old and introduction of new products into the market. The model could also be used to allocate more space to product lines on periods of increasing market share. (Author's abstract)

**Keywords:** *Engineering, Plant layout, Space allocation, Semiconductor*

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Inhenyeriya, Volume No. 1 Issue No. 2, 51-56  
2000,  
(Filipiniana Analytics)  
NP

0157

**Eco-mapping the tanning process**  
*Puzon Nacu, Debb*

This paper looks at the major stages of the tanning process with the aim of identifying the various inputs and wastes generated in each stage through the use of eco mapping. Understanding the inputs and outputs of the various tanning processes is the starting point to identify options to make improvements related to material use, waste reduction and other actions to protect the environment. (Author's abstract)

**Keywords:** *Engineering*

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2006,  
(Filipiniana Analytics)  
NP

0158

**Educating ethical engineers: the De la Salle University-College of Engineering Initiatives**  
*Belino, Man*

The increasing emphasis given to engineering ethics in engineering education is a significant move to strike a balance between technology and human value. Factors which result in poor quality of instruction of engineering ethics: Lack of instructional materials in school libraries, outdated textbooks and references prescribed by the faculty, traditional types of teaching methodologies, poorly designed course syllabus, very limited topics covered in lectures and examinations, and lack of qualified faculty to handle the course must be seriously addressed. The College of Engineering of De La Salle University-Manila is addressing these concerns through inclusion of ethical concerns in the social action committee of the College and through individual faculty initiatives. (Author's abstract)

**Keywords:** *Engineering, Engineering ethics, Engineering ethics education*

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Inhenyeriya, Volume No. 1 Issue No. 1, 80-93  
2000,  
(Filipiniana Analytics)  
NP

0159

### **Electrochemical migration of silver in electronics applications**

*Mena, Marie Stephanie S. , Mena, Man*

Silver (Ag) filler is the most attractive choice among all the conductive fillers. However, silver electrochemically migrates in the presence of moisture and applied bias. In microelectronic devices, silver migration usually occurs between adjacent conductors/electrodes, which leads to the formation of dendrites and eventually results in short-circuit failure. An investigation for two types of fillers was done using the water drop test and a 1000-hour temperature-humidity-bias (THB) test. Four different bias voltages and six different distance spacings were used for each of the two fillers. The higher voltage requirement for Ag migration to occur for epoxy A than for epoxy C was attributed to the high volume resistivity of epoxy A. It was discovered that an electric field value of more than 1 volt/mm will start Ag migration. (Author's abstract)

**Keywords:** *Engineering, Electrochemical migration, Silver migration, Temperature-humidity-bias (THB)*

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Philippine Engineering Journal, Volume No. 37 Issue No. 2, 23-36  
2016,  
(Filipiniana Analytics)  
NP

0160

### **Ergonomically designed walker for the Filipino elderly as an assistive device**

*Gador, Charmelaine , Estrella, Rogelio , Gutierrez, Alma Maria Jennifer, Salomon, Patri*

Assistive devices available in the market are designed to give stability to the user by increasing the base of support. They are expected to increase lateral stability and support the weight of the user. Analysis of the different available walker in the market namely: regular walker, swiveling walker and rollator walker paved the way in establishing the need of developing a new design of the walker. Quality function deployment (QFD) was used to systematically identify the needs of the disabled elderly population. The house of quality revealed the needs of customers that were not tackled by current walker designs. Some primary functions not addressed include ease of moving the walker both horizontally and vertically, lack of stability to support the elderly when walking, difficulty

of holding the walker and not being anthropometrically fit to the users. Secondary needs identified from the use of QFD involve affordability of the walker, durability, aesthetics, and adequate clearance. A new design was conceptualized that considered these needs and a working prototype was manufactured. The design was evaluated through user testing and obtaining the feedback of doctors and physical therapists. Questionnaires were used during user testing and interview was used to get the feedback of experts. Results of product testing suggest that all primary functions identified by the users were satisfied by the new design. However, the weight of the prototype needs to be improved because the heaviness of the material used hindered the mobility of the users. A lighter material needs to be used to make the product lighter. **(Author's abstract)**

**Keywords:** *Engineering, Quality function deployment (QFD), Anthropometrically, Regular walker, Swiveling walker, Rollator walker*

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DLSU Engineering Journal, Volume No. 18 Issue No. 1,  
2006,  
(Filipiniana Analytics)  
NP

**0161**

### **An explicitly dynamic multi-period competitive facilities location model with demand sharing**

*Li, Richard C. , Gobaco,*

Competitive facility location analysis has gained considerable attention in the past years, perhaps due to the increasing presence and significant effects of competition on business profitability. Since the latter half of the 20<sup>th</sup> century, competitive facilities location models have been continuously studied, explored and extended by many researchers. With the belief that competition will continue to play a significant role in strategic business management and development, this research will therefore deal with a competitive location problem. This study also aims to resolve the limiting and unrealistic novelty assumption of past researches by considering demand sharing. In order to achieve these goals, a multi-period competitive facilities model was formulated that allows opening, dosing, and upgrading of a company's facilities in response to competitor actions or decisions. The model also incorporated the more realistic occurrence of demand sharing whenever customers deem competing facilities equally attractive. Demand sharing was also modeled to occur even if a facility is more attractive than another. **(Author's abstract)**

**Keywords:** *Engineering*

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DLSU Engineering Journal, Volume No. 18 Issue No. 1,  
2006,  
(Filipiniana Analytics)  
NP

**0162**

### **Field performance of Ceria-Alumina Catalysts for automotive exhaust treatment in Metro Manila**

*Niiyama, Hiroo , Aida, Takashi , Gallardo, Su*



The performance of ceria-alumina as an oxidation catalyst for exhaust treatment of an experimental car in actual running condition was verified in Metro Manila. It was compared to the "Johnson Matthey Automotive Catalyst", a standard oxidation catalyst of monolithic structure. The carbon monoxide and hydrocarbon levels of the exhaust gases were measured using non-dispersive infra-red analyzer in the idling condition following standard procedures. Energy dispersive X-ray (EDX) and X-ray diffraction (XRD) analyses were both performed to check the elements deposited on the catalysts, as well as the compounds formed on the surface. The results showed that in leaded gasoline, ceria-alumina performed better than the standard oxidation catalyst, while in the unleaded fuel, the reverse was true. Elemental analysis showed that lead and sulfur were present on the surface. Cerium sulfate was also detected which confirmed that deactivation by sulfur was reversible. The ceria-alumina catalyst was demonstrated to be a practical catalyst to use for old cars without engine modification, although a secondary air source should be provided. (Author's abstract)

**Keywords:** *Engineering*

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Inhenyeriya, Volume No. 1 Issue No. 2,  
2000,  
(Filipiniana Analytics)  
NP

0163

**Field programmable gate array-based power factor controller**  
*Pavia, Carlo Mar M. , Moralina, Don O. , Cuartero, Francisco C. , Yap, Ro*

Power factor is defined as the ratio of the real power and the apparent power. A power factor value of 1 reflects a very efficient loading of supply. On the other hand, a low power factor value can lead to huge losses in the supply system. When power factor is poor due to effect of inductive loading, corrections can be applied using capacitors to improve its value. This paper focuses on the study and implementation of a power factor controller with the use of Field Programmable Gate Array as the main controller. (Author's abstract)

**Keywords:** *Engineering*

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DLSU Engineering Journal, Volume No. 18 Issue No. 1,  
2006,  
(Filipiniana Analytics)  
NP

0164

**Field programmable gate array based remote home control using dual tone multi frequency**  
*Mallonga, Raymund William M. , Carpio, Ryan M. , Yap, Ro*

Humans have increasingly been mobile in the recent years. Mobility has brought about rapid changes in a person's lifestyle. A person may worry about his/her property every time he/she makes a travels. This has introduced a need for a person to remotely access certain devices in his house. This paper presents a design of a Field Programmable Gate Array(FPGA) based remote home control system. The user controls selected devices of his home from a remote location using the telephone line. After execution, the system sends a message back to the user through Short Message Service (SMS) to confirm a successful operation. (Author's abstract)

*Keywords: Engineering*

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DLSU Engineering Journal, Volume No. 18 Issue No. 1,  
2006,  
(Filipiniana Analytics)  
NP

0165

### **A finite element model for optimum design of plain concrete pressure tunnels under high internal pressure**

*Olumide, Busari Afis, Marence, Miros*

Plain concrete lining of pressure tunnels are not absolutely tight and water can seep out of the tunnel. Seeped water is lost of energy in hydropower system, but can also cause serious stability problems in the surrounding rock mass. If the rock mass around the tunnel is tight (originally or tighten by grouting) seeped water, however, stays in the vicinity of the tunnel and increases the external (ground) water pressure. Such increased external water pressure decreases the gradients between internal and external pressure and reduce the seepage and losses. For simulation of hydraulic mechanical interaction in the process of cracking, a coupled seepage-stress method based on the 2D elasto-plastic finite element method (FEM) is proposed. The coupling has been carried out by superimposing results of consolidation and water flow analyses. The coupling principle produces the change of stress field and leads to change of permeability coefficient and the redistribution of the seepage field. The calculation results are compared with results of existing tunnel and with the analytical solutions. A design criterion based on this study can be suggested for pressure tunnel design procedure in stable rock conditions. (Author's abstract)

*Keywords: Engineering, Plain concrete, Pressure tunnel, Permeable lining, Stress-seepage analysis, Numerical simulation*

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International Journal of Science and Technology, Volume No. 1 Issue No. 5, 216-223  
2012 May,  
(Filipiniana Analytics)  
NP

0166

### **Formulating a multi-attribute diagnostic model for total quality management for large manufacturing companies in the Philippines**

*Sriban-Manalang, Anna*

As part of an on-going research on the development of a norming general diagnostic tool for Total Quality Management, a mathematical assessment model was developed to measure the dynamic and multi-attribute characteristics of TQM for large manufacturing companies in the Philippines. From a synthesis of the various quality management approaches in the past, identified current practices and expert opinions, the level of TQM adoption at the organizational level was perceived to be anchored on a systems structure composed of top leadership involvement, customer focus, human resource empowerment, continuous improvement and process vitality as the characterizing attributes. Using quantitative indicators measured from 30 large manufacturing companies with progressive, on-going TQM implementation, relevant indicators were derived through Principal Component Analysis and the sample companies were clustered on the basis of scores on retained factors. Findings demonstrated

that the level of TQM adoption by large Philippine manufacturing companies could be grouped into four distinct stages. The stage where a particular company was classified could be predicted using a functional relationship between categorical clusters and a linear parametric equation based on selected relevant quantitative indicators. This study would provide TQM practitioners and consultants a starting diagnostic tool that could help them determine the status of their organization's TQM implementation and enable them to determine the various possible areas of improvement in their organization. (Author's abstract)

**Keywords:** *Engineering, Change strategies, Multi-attribute diagnostic model, Quantitative indicators, Total quality management*

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Inhenyeriya, Volume No. 2 Issue No. 1, 14-28  
2001,  
(Filipiniana Analytics)  
NP

0167

### **FPGA - based turbo encoder/decoder using soft output viterbi decoding algorithm**

*Selda, Edison A. , Yap, Rod*

Turbo Codes have gained prominence because of its near channel capacity error correcting capability. Bit streams are encoded by concatenating two parallel convolutional encoders, separated by an interleaver. This results to a code, which when transmitted, achieves a very low (almost zero) bit error rate, when observed at the receiver. A more significant characteristic of this encoding/decoding scheme is how these error stricken codes are recovered by the decoder. By utilizing soft decision decoding and an iterative decoding structure, transmitted sequences are recovered with better efficiency. Given these outstanding features, this study presents how a turbo encoder/decoder implemented on a Field Programmable Gate Array (FPGA) using the Soft Output Viterbi Decoding Algorithm (SOVA). Several models were synthesized and implemented but only two were chosen, one with the fastest speed and the other with the smallest number of gate utilization. A VHDL model was also created for the 25 and 50 bits frame. The designs' performance was verified by comparing it with the results obtained from the MATLAB simulation. The decoder's performance was further evaluated by measuring and comparing the Bit Error Rate (BER) with published results. (Author's abstract)

**Keywords:** *Engineering*

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DLSU Engineering Journal, Volume No. 18 Issue No. 1,  
2006,  
(Filipiniana Analytics)  
NP

0168

### **Geopolymerization of industrial by-products and study of their stability upon firing treatment**

*Zedane, Sayieda.R. , Khater*

There is a growing interest in the development of new cementitious binders which enhance optimal utilization of industrial by-products such as phosphogypsum, fly ash and cement dust. Among all the industrial by-products, fly ash predominates as an alternative building material for building construction activities. Cement kiln dust (CKD) with

its high alkali content in the activation of geopolymer specimens to create nonconventional cementitious binders was investigated. Relatively high alkaline content of CKD is predominant factor preventing its recycling in cement manufacture. However, it was observed that depending on the water-soluble alkalis and sulfate compounds, CKD could provide the necessary environment to activate geopolymer materials. Phosphogypsum that is rich in sulfate will enhance geopolymerization process when added in a lower dose. Materials used in this investigation are fly ash (FA), phosphogypsum (PG) and cement kiln dust (CKD) calcined. Phosphogypsum was partially replaced fly ash in the ratio from 0 up to 50%, while the remaining ratio is for cement dust. Alkaline activation by 2 % NaOH along with the added cement dust was studied and the used water to binder ratio is 0.55. Curing was performed under 100 % relative humidity at 60°C. Results showed that 10% PG is the optimum ratio for geopolymer formation and results in best enhancement in mechanical as well as microstructural characteristics. Firing treatment for both 10 and 20% PG mixes possess a lower strength values up to 800°C, while strength exposed to strength gain up to 1200°C. (Author's abstract)

**Keywords:** *Engineering, Cement dust, Phosphogypsum, Fly ash, Alkali, Firing.*

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International Journal of Science and Technology, Volume No. 1 Issue No. 2, 109-117  
2012 February,  
(Filipiniana Analytics)  
NP

0169

### **A heuristic for minimizing total weighted tardiness in the two-machine flowshop problem when jobs have processing times $\text{MIN}(P1) > \text{MAX}(P2)$**

*Siy, E*

Minimizing the NP-hard problem of total weighted tardiness for the two machine flowshop(F2//WjTj) requires a computationally less difficult approach than complete enumeration. This paper presents a heuristic for the case of the two-machine flowshop where the largest processing times for all job in the 2nd machine (P2) is smaller than the minimum processing times the first (P1). In this case of the flowshop, all jobs are initially available for processing and have to be processed in the same sequence of machines; jobs also have associated due dates and weights. The heuristic performance is compared against the currently accepted Rachamadugu and Morton (1981) heuristic on numerical examples on 4-and 5 jobs flowshop with completely enumerated permutation schedules. It is shown that the presented heuristic would be able to find a sequence of jobs that surpasses the performance of R&M heuristic in finding the minimum total weighted tardiness. (Author's abstract)

**Keywords:** *Engineering*

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DLSU Engineering Journal, Volume No. 18 Issue No. 1,  
2006,  
(Filipiniana Analytics)  
NP

0170

### **Image watermarkings with self-healing capabilities**

*Lee, Andrew Powell K. , King, Kelvin Mackenzie D. , dela Cruz, Charisse C. , Co, Stephanie Joy C., Manalang, Kenneth Josef L. , Lapira, Edze*

The modern world is rapidly becoming more "digitized" and thus the need for more improved and robust security mechanisms against forgery and piracy of digital contents increases in urgency. This paper describes a watermarking scheme with self-correcting features that would spur new developments in the field of information security protection, since it would provide improved protection of the intellectual property right of the owner for their digital creations. The system employs a hybrid watermark such that both qualities of a robust and a fragile watermark were integrated into a single system. The restoration capability of the system depends on the fragile watermark. Also, the encrypting algorithm used, aliased linear topology was specially designed to appear as if the sequence of the image blocks are scattered as a result of a pseudorandom scrambling when in truth a series of linear scrambling with different patterns were done. (Author's abstract)

**Keywords:** *Engineering*

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DLSU Engineering Journal, Volume No. 18 Issue No. 1,  
2006,  
(Filipiniana Analytics)  
NP

0171

### **The implications of left or dominance for engineering right brain education** *Montanano, Rosema*

he brain dominance theory states that learners use different sides of their brain to process different kinds of information. The right brainers can handle elusive, uncertain information and form intuitive problem-solving; the left brainers prefer established, certain information and favor multiple-choice type of tests and logical problem-solving. In terms of brain preferences, a study was made at De La Salle University to compare first-year student's from the College of Engineering with those from the College of Computer Studies and the College of Science. These students are assumed to be more left brained than right brained. Based on the results of the investigation, the Engineering group showed 25% left dominance-21% right dominance-54% bilateral; Computer group, 15%-3%-82%; and Science group, 24%-32%-44%, respectively. Since there are more bilaterals than left or right brain among the Freshmen, the recognition of wholeness is crucial for teachers or educators. The whole brain approach uses active learning techniques to coax the whole brain into communicating between the two hemispheres, resulting in wholly integrated brain Function. (Author's abstract)

**Keywords:** *Engineering, Brain dominance, Left/right brain lateralization, Whole brain approach*

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Inhenyeriya, Volume No. 2 Issue No. 2, 55-69  
2001,  
(Filipiniana Analytics)  
NP

0172

### **Improvement modal testing in dynamics revolves structures to investigate the gyroscope effect performance** *Al-Khazali, Hisham A. H., Askari, Mohamad*

Revolve dynamic systems require careful consideration in their dynamic models as they include localized non-proportional damping and frequency-dependent gyroscopic effects. Devices such as engines, motors, disc drives and

turbines all develop characteristic inertia effects that can be analyzed to improve the design and decrease the possibility of failure. At higher speeds, the inertia effects of the rotating parts must be represented in order to predict the rotor behavior. The natural frequency versus the spin-speed diagram or the interference diagram, often known as the Campbell diagram, is one of the important design tools to obtain critical speeds of rotating machineries. It is basically the graphical representation of the speed-dependent frequency equation. This variation is important when the effect of the gyroscopic couple is considered, which causes coupling of the rotor motion in two orthogonal planes. Campbell diagrams are commonly plotted either through numerical analyses or through modal testing methods and whirl orbital motion can be detected in this research. It is important to identify all the critical speeds within the range of operation and analyse the damping effects, stiffness and other phenomena also their effects in the safe operation. There are several phenomena need to be detected such as gyroscopic effect which would create complexity in the mathematical procedures in modal analysis which need to be addressed and interpreted appropriately before they could be used in modal testing of rotating machinery. The experimental technique used thus far is called Modal Testing. The technique has recently been applied to rotating structures and some research papers been published, however the full implementation of Modal Testing in active structures and the implications are not fully understood and are therefore in need of much further and more in depth investigations. Mathematical model of the system from the test data can be assembled. The raw data obtained from experiment was used in finite element (FE) model for comparison. It has good capability for Eigen analysis and also good graphical facility and obtained good result. (Author's abstract)

**Keywords:** *Engineering, Campbell diagram, Whirl motion, Modal test, Gyroscopic effect, Finite element method*

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International Journal of Science and Technology, Volume No. 1 Issue No. 3, 151-163  
2012 March,  
(Filipiniana Analytics)  
NP

0173

### **The improvement of melting characteristics of Capric-Lauric Acid Mixture employing prospective additives for the cooling application of thermal energy storage**

*Watanabe, Takayuki , Roxas-Dimaano, Maria N*

A melting point of 18.0 °C for a 65 mol % capric acid - 35 mol % lauric acid (C-L) mixture is considered high for low-temperature thermal energy storage. Chemical additives with low melting points are considered to improve the melting characteristic of the C-L acid. By differential scanning calorimetry (DSC). In this study the effects of chemical additives on the C-L acid in different concentrations have been analyzed. A cryoscopic constant of 10.7 K·kg·mol<sup>-1</sup> for the C-L acid is obtained. The desired melting depression values of 8 to 11 °C are not met with 0.61 mol each of methyl salicylate, cineole, and eugenol per kg of C-L acid. However, the melting characteristics obtained for the same concentrations of the above-mentioned additives in the C-L acid are applicable for industrial process cooling. (Author's abstract)

**Keywords:** *Engineering, Capric-Lauric Acid , Phase change materials, Latent heat storage, Chemical additives*

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Inhenyeriya, Volume No. 3 Issue No. 1, 15-24  
2003,  
(Filipiniana Analytics)  
NP

0174

## **Improving the minahang bayan declaration process: a first step towards achieving sustainability in Philippine small-scale gold mining industry**

*Tamayao, Mili-Ann M. , Soriano, Virginia J. , Llaguno, Erick*

Small-scale gold mining contributes significantly to the total value of gold mined in the country surpassing even that of large-scale mining in recent years. With the attendant adverse environmental and social problems that this predominantly illegal operation also generates, the quest for sustainable small-scale mining has long been a concern for the government and other industry stakeholders. The introduction of Minahang Bayan or sites onshore, which is a regulatory mechanism that determines where small-scale mining operations are allowed, is viewed as a means to address this sustainability concern. It is the first step towards legalizing small-scale mining operations as mandated in Republic Act No. 7076, otherwise known as the “People’s Small Scale Mining Act of 1991”. As of December 2015 however, only three (3) Minahang Bayan have been declared since the law took effect in 1991.

This study shows that the Minahang Bayan policy and implementation is fraught with several fundamental problems: 1) there are no commitments on processing times for several major steps; 2) policy is silent on actions to be taken in case of process delays; 3) the application process is open to a lot of delays; 4) petitioners and process owners are not very knowledgeable of the process; 5) lack of access to monitoring application status; and 6) quality checks in upstream process steps (i.e., at the city/provincial and regional local government units) are lacking as manifested by deficient applications forwarded to the national office.

It is recommended that the government takes a proactive approach in assisting the miners in their Minahang Bayan petitions through 1) identification of processing and response times for major steps in accordance with the Citizen’s Charter of concerned government offices; 2) identification of next steps if processing and response commitments are not met; 3) widespread and effective education and information campaign utilizing video presentations, petition template containing the appropriate documents (correct both in form and content) as example; 4) designation of a government personnel to actively coordinate with the miners; 5) provision of an online monitoring facility to enable petitioners to track status of applications; 6) provision of instructional materials aimed at government offices performing different steps in the process to minimize or totally eliminate occurrences of deficiencies; and 7) identification of potential Minahang Bayan areas to be initiated by the Mines and Geosciences Bureau, with the assistance of local government units, academe and other partners, to lessen external factors affecting the process (e.g. politics).

Indeed, improving the Minahang Bayan declaration process is the crucial first step to realizing and achieving a responsible and sustainable small-scale gold mining. It is the first step that the government really has to take.  
**(Authors' abstract)**

**Keywords:** *Engineering, Minahang bayan, Sustainability, Proactive approach*

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Philippine Engineering Journal, Volume No. 37 Issue No. 1, 45-62  
2016,  
(Filipiniana Analytics)  
NP

**0175**

## **Influence of Hydro-Meteorological Variables on Sustainable Resource Planning and Management**

*Terante, Dan*

The effect of hydro-meteorological variable on rice production was analyzed. The direct impact of these factors on rice yield was ascertained through inferential statistic rather than through biotechnology. Specifically, the study aimed to establish statistically the effect of solar radiation and temperatures on rice grain yield in provinces serviced by the National Irrigation Administration. The weather data of the Province of Nueva Ecija, Philippines were used to represent the prevailing conditions in the region. The statistical study strongly suggested that natural factors were most influential in the sustainability of the natural resource and could serve as a framework for regional planning, management and decision-making. Polynomial regression models were derived using forward selection procedure and were subsequently tested. The model  $Y = 7.19 - 0.0077*SR + 0.0365*TMIN + 0.002429*TMAX$  adequately and significantly provided quantitative trends on the effect of the amount of solar radiation and the maximum and minimum temperature on the rice grain yield. Although the validity of the regression equation was limited to the region studied, the model could be used as a management tool for the sustainable development of an irrigation system. (Author's abstract)

**Keywords:** *Engineering, Regional planning, Sustainable resource planning, Planning model, Policy analysis, Multiple linear regression, Polynomial regression, Rice yield, Hydro-meteorological variables*

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Inhenyeriya, Volume No. 1 Issue No. 1, 68-79  
2000,  
(Filipiniana Analytics)  
NP

0176

### **Intelligent machine vision for fish size classifier**

*Dadios, El*

An automated fish size classifier with machine vision was developed. The knowledge base used by the system was obtained from experiments involving the actual physical measurement of tuna fish using camera-based image processing. The classification of the images of the fish into small, medium, and large was done according to a rule-base. The fish size classification used a look-up table that stored the size-image equivalence (pixels) and converted the size of fish into weights. The sorted fish were transferred into bins by using a flipper and stored according to size. A controller detected the presence of the fish on top of the conveyor and automatically stopped the latter's motion when no more fish were available. The results of the physical experiments showed that the controller developed in the laboratory was efficient, robust and adaptive. (Author's abstract)

**Keywords:** *Engineering, Fish size classifier, Machine vision system, Image processing, Knowledge base controller, Image thresholding*

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Inhenyeriya, Volume No. 2 Issue No. 2, 17-26  
2001,  
(Filipiniana Analytics)  
NP

0177

### **Investigating corrosion performance of MCS and KS7 SS in different fluid environments**

*Adegbola, A.A., Agara, K.W., Ajide*



The objective of this paper is to investigate and compare the corrosion resistance of medium Carbon steel (MCS) and KS7 stainless steel in cassava fluid, natural orange fluid and distilled water environments. The MCS and KS7 SS were exposed to 200ml each of these fluids for a period of 36 days. The weight loss was taken at a 3-day interval in order to assess CPR. The experimental results revealed that KS7 SS generally offers a superior corrosion resistance compared to the MCS in the selected fluids media. While MCS is established to be inapt alloy in cassava, orange and distilled water fluids, KS7 SS is a more reliable alternative material for fabrication of machineries for processing cassava, orange and distilled water. However, MCS exhibited fairly satisfactory corrosion resistance behaviour in distilled water when compared to in natural orange and cassava fluids media where corrosion degradation was very highly significant. **(Author's abstract)**

**Keywords:** *Engineering, MCS, KS7 SS, CPR, Cassava fluid, Orange fluid, Distilled water*

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International Journal of Science and Technology, Volume No. 1 Issue No. 5, 286-291  
2012 May,  
(Filipiniana Analytics)  
NP

0178

### **Kinetic equation for simultaneous oxidation of total organic carbon and ammonium-nitrogen in three-phase fluidized bed biofilm reactor**

*Tsuneda, Satoshi , Hibiya, Kazuaki , Aurenesia, Joseph, Hirata, A*

Batch experiments with varying initial substrate concentrations and bio-particle volumes were performed on a three-phase fluidized bed biofilm reactor treating simulated domestic waste. The objective was to study the simultaneous oxidation of total organic carbon (TOC) and ammonium nitrogen (NH<sub>4</sub><sup>+</sup>-N) by biofilm process. The presence of autotrophic nitrifying bacteria in the biofilm, together with the heterotrophic microbes, made possible the simultaneous removal of the nutrients NH<sub>4</sub><sup>+</sup>-N and TOC. A simplified mass balance equation for the biofilm was proposed and five different kinetic rate equations were used to establish the degree of correspondence of theoretical to actual data curves. The kinetic parameters were obtained by using nonlinear regression analysis on the set of two differential equations representing the simultaneous TOC and NH<sub>4</sub><sup>+</sup>-N oxidations. The competitive inhibition model, which described the effect of TOC on NH<sub>4</sub><sup>+</sup>-N oxidation rate, was the best-fit model based on average r<sup>2</sup> and on the fit of the theoretical curve obtained from numerical simulation using the average of the best fit parameters from individual runs. The study showed that the simplified modeling method provided a fit of the actual data. This study also illustrated that the kinetic model For the biofilm process and its parameters could be easily obtained from batch-experiment results. (Author's abstract)

**Keywords:** *Engineering, Biofilm, Kinetic equation, Simultaneous TOC and NH<sub>4</sub>-N oxidation, Nonlinear regression analysis*

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Inhenyeriya, Volume No. 2 Issue No. 2, 1-16  
2001,  
(Filipiniana Analytics)  
NP

0179

## **Landslide modeling and susceptibility mapping of Giri River Watershed, Himachal Pradesh (India)**

*Pareta, Upasana , Pareta, K*

Landslides are one of the critical geological processes, which cause not only enormous damage to civil engineering structures i.e. roads, railways, bridges, dams, bio-engineering structures, and houses but also lead to loss of life. Hence, there is a need for landslide susceptibility mapping for identification of potential landslide areas. The present study is an attempt towards development of a landslide model/methodology by using GIS and remote sensing techniques for landslide susceptibility mapping. This involves the generation of thematic data layers and their spatial analysis within the Giri river watershed in Himachal Pradesh, India.

Giri river watershed of Yamuna basin was selected for the model implementation. WorldView-02 MS and ResourceSAT-2 LISS-4 Mx satellite imageries, Survey of India topographical maps (1:50,000 scale), field data, and other informative maps were used as inputs to the study. Important terrain factors, contributing to landslide occurrences in the region, were identified and corresponding thematic data layers were generated. These data layers represent the soil, land use, geological, topographical, and hydrological conditions of the terrain. A numerical rating scheme for the factors was developed for spatial data analysis in a GIS. The resulting landslide susceptibility map delineates the area into different zones of four relative susceptibility classes: very high, high, moderate, and low. The very high susceptibility class has located in the Rawana, Jabyana, Gusan, Chandesh and Parar villages. The susceptibility map was corroborated by correlating the landslide frequencies of different classes. This has shown a close agreement with the existing field variability condition. **(Authors' abstract)**

**Keywords:** *Engineering, Landslide model, Vulnerability mapping, Susceptibility mapping, Remote sensing*

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International Journal of Science and Technology, Volume No. 1 Issue No. 2, 91-104  
2012 February,  
(Filipiniana Analytics)  
NP

**0180**

## **Markov models of telephone speech dialogues**

*Iruemi, J.O. , Atayero, A.A. , Eyinagho, M.O. , Sheluhin*

Analogue speech signals are the most natural form of communication among humans. The contemporary methods adopted for the analysis of voice transmission by packet switching were designed mainly with respect to a Poisson stream of input packets, for which the probability of an active packet on each input port of the router is a constant value in time. An assumption that is not always valid, since the formation of speech packets during a dialogue is a non-stationary process, in which case mathematical modeling becomes an effective method of analysis, through which necessary estimates of a network node being designed for packet transmission of speech may be obtained. This paper presents the result of analysis of mathematical models of Markov chain based speech packet sources vis-à-vis the peculiarities of telephone dialogue models. The derived models can be employed in the design and development of methods of statistical multiplexing of packet switching network nodes. **(Author's abstract)**

**Keywords:** *Engineering, Markov models, Statistical multiplexing, Speech processing, Packet switching, QoS*

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International Journal of Science and Technology, Volume No. 1 Issue No. 3, 126-131  
2012 March,  
(Filipiniana Analytics)  
NP

### **Microcontroller-based safety spotter for body building bench press exercise**

*Ticzon, Jason Ron M. , Ignacio, Cristina Coreen B. , Dulay, Ann E., De Leon, Marco Alejandro D. , Uy, Claire*

The ultrasonic sensor and QTERM were used to acquire input data such as the arm's length of the person using the system, the number of repetitions, and the value of the weights. The signal from the sensor and QTERM is sent to the micro controller. The micro controller activates the actuator and solenoid when spotting is needed. Spotting will be done once the output from the sensor indicates that the speed of the lifting is slow, stalled for 3 seconds going up and 2 seconds going down, or when the displacement from the chest to the sensor is at its minimum point, which is set in this study to 3 inches [Hermano, 2003], [De Larrazabal, 2003, Temida, 2003]. (Author's abstract)

**Keywords:** *Engineering*

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DLSU Engineering Journal, Volume No. 18 Issue No. 1,  
2006,  
(Filipiniana Analytics)  
NP

### **Model subset selection using Variance Inflation Factor (VIF) in wavelet Part I · multiple regression**

*Bakshi, Bhavik R. , Olano, Jr., Servillano Sb. , Cabigon, N*

This criterion variance inflation factor (VIF) in wavelet domain is used to identify the model subsets that provide an efficient procedure for discriminating variables. The discrimination method is based on two principles: first, the collinear variables' VIF increases with scale while the independent variables do not show significant changes; and second, the variance of the collinear variables VIF is very large compared to that of the independent variables. The procedure is applied to a model that has twenty explanatory variables but with single response variable. The algorithm can be applied to any family of linear models that form a lattice of multiple linear models. (Author's abstract)

**Keywords:** *Engineering, Variance Inflation Factor (VIF), Wavelet, Multiple regression , Model subset selection*

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Inhenyeriya, Volume No. 2 Issue No. 1, 1-13  
2001,  
(Filipiniana Analytics)  
NP

### **Modeling of secondary coating line for fiber optic cable production**

*Abrasado, Ryan C. , Nasara, Meredith Y. , Cabigon, N*

A fast and qualitatively robust non-parametric modeling method was employed in the modeling of the secondary coating line for the production of fiber optic cable. The system had 24 explanatory variables and one response variable. Variable discrimination in wavelet domain was used in discriminating variables while stepwise regression was used in the determination of model coefficients. The remarkable results showed that in spite of the crudeness of the data (very noisy), de-noising in wavelet proved very effective. Nine key parameters significantly affected the excess length; while two other parameters likely did so, but not within the natural variations of the system. (Author's abstract)

**Keywords:** *Engineering, Variance Inflation Factor (VIF), Stepwise regression, Secondary coating line, Wavelet*

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Inhenyeriya, Volume No. 3 Issue No. 1, 1-14  
2003,  
(Filipiniana Analytics)  
NP

0184

### **Neural network controller for pH Neutralization Process** *Dadios, Elmer P. , Olano, Jr., Servillano Sb. , Lacar, Honor*

A method of pH control for a neutralization process made use of Artificial Neural Network (ANN) to enhance a PID control. This Neuro-PID controller trained ANN based on control errors. The performance of the Neuro-PID controller was studied and evaluated by simulation, and its performance was compared with that of the conventional PID controller during actual experimentation. The simulation results showed that the Neuro-PID controller controlled the pH at a desired setpoint with a better performance than the conventional PID controller. Thus, the Neuro-PID controller could be used as an effective alternative to conventional process control techniques in the nonlinear, rapidly changing pH system. (Author's abstract)

**Keywords:** *Engineering, pH control, Artificial neural network (ANN), PID controller, Neuro-PID controller, Simulation*

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Inhenyeriya, Volume No. 3 Issue No. 1, 25-33  
2003,  
(Filipiniana Analytics)  
NP

0185

### **Nominal bending strength using a parabolic concrete stress distribution** *Estanero, Ro*

A parabolic compressive stress distribution, equivalent to a rectangular stress distribution, was used to study the equivalence of the coefficients provided by NSCP Vol. 1 and those by ACI 318-95 for the analysis and design of reinforced concrete sections in bending. Assuming a parabolic stress distribution in the concrete compression zone, the analysis and design equations differed only slightly from those provided by the NSCP and ACI 318 and were equally user-friendly. Based on the ACI rectangular stress block approach, the equivalent rectangular stress block in this study employed coefficients obtained from the parabolic stress distribution. (Author's abstract)

**Keywords:** *Engineering, Nominal bending strength, Balanced steel ratio, Parabolic stress distribution, Rectangular stress distribution*

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Inhenyeriya, Volume No. 2 Issue No. 1, 52-59  
2001,  
(Filipiniana Analytics)  
NP

0186

### **Nonlinear dynamic data reconciliation and bias estimation of process measurements in an adiabatic stirred-tank reactor**

*Munoz, Jose Co , Pilario, Kar*

When process data is taken from the sensors of a plant, errors of varying degrees are inherent. Measured variables will most likely violate dynamic process models. Because of this, large volumes of data may be unreliable for process control, monitoring, and optimization. This paper describes a new method for simultaneous Nonlinear Dynamic Data Reconciliation and Gross Error Detection (NDDR-GED) which conditions raw sensor measurements and estimates bias in faulty sensors. The problem is formulated as a dynamic NLP, solved using a hybrid Nelder-Mead Simplex Particle Swarm Optimization (NM-PSO) algorithm and a moving horizon approach. The use of NM-PSO warrants the transfer of solutions, embedded in each elite particle, from one horizon NLP to the next, thereby promoting smoother profiles and faster convergence. This new feature is seen to be a learning mechanism of the method across time. Discretization of ODEs was done using orthogonal collocation on finite elements. Using simulated data from the nonlinear process model of an adiabatic CSTR, the resulting profiles were both smooth (with a percent standard deviation reduction in measurement error of 80-90%) and accurate to the process model within 10<sup>-7</sup>. Also, large biases were corrected accordingly, if the faulty sensor was known a priori. **(Author's abstract)**

**Keywords:** *Engineering, Data reconciliation, Bias estimation, Adiabatic, Stirred tank reactor, Error detection*

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Philippine Engineering Journal, Volume No. 37 Issue No. 1, 1-22  
2016,  
(Filipiniana Analytics)  
NP

0187

### **pH buffering for acidic geothermal wells utilization**

*Puertollano, Azucena A. , Brondial, Yolanda*

The current practice of plugging corrosive wells (low-pH or acidic) and, consequently, abandoning them could incur huge financial losses to the geothermal industry in terms of costs of drilling and of well tests. A potential method for commercializing high-enthalpy acidic geothermal wells was explored by raising the pH of geofluids to 2-3.5, pH levels considered by geothermal reservoir engineers to be non-corrosive to low-carbon steel. ALBER and YODIN, two new buffer solutions of chlorinated carboxylic acids and their sodium salts, were used for the laboratory tests. A predetermined volume of each buffer was mixed with a large amount of acidic geothermal brine. A geofluid to buffer volume ratio of as high as 200 at 100°C using an initial geofluid pH of as low as 1.94 could raise the brine pH to the desired value 3.5 or greater. The amount of buffer was observed to depend on its pH and

concentration before addition to the brine and on the stability of the geofluid pH. The higher the temperature of operation, the higher was the geofluid buffer volume ratio attained due to the low solubility of the acid-forming gases (CO<sub>2</sub> and H<sub>2</sub>S) present in the geofluid. (Author's abstract)

**Keywords:** *Engineering*

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Inhenyeriya, Volume No. 1 Issue No. 2,  
2000,  
(Filipiniana Analytics)  
NP

0188

### **The pre-gelation state of an aluminium based inorganic polymer**

*Wiley, Dianne E. , Maridable, Jul*

The synthesis of an aluminium-based, inorganic polymer was anchored on the hydrolysis of aluminium tri-sec-butoxide in sec-butyl alcohol and the condensation of the partially hydrolysed products to form the polymeric network. By skillfully manipulating the preparation technique, the precipitation of aluminium oxy-hydroxides and the formation of colloidal particulates were avoided. In this study, the pre-gelation stage of the aluminium based inorganic polymer was investigated using four techniques: potentiometry, infrared spectroscopy (FTIR), nuclear magnetic resonance (NMR) and small angle x-ray scattering (SAXS). For acid catalysed reactions, the optimum acid and water concentrations for the reduction of gelation time were between 1.0 and 2.0 mole acid per mole alkoxide and between 2.0 and 3.0 mole water per mole alkoxide. The sols produced were highly acidic and viscous. Potentiometric results showed that pH values which successfully prevented precipitation of Al(OH)<sub>3</sub> during the early stages of the reaction were between 6 and 9. FTIR revealed a narrowing of the Al-OH stretching band at 3500 cm<sup>-1</sup> and the appearance of an Al-O band at 820 cm<sup>-1</sup> as the reaction progressed. SAXS measurements of the sols gave an average radius of gyration of 89Å, indicative of large swollen molecules. Solution <sup>27</sup>Al NMR demonstrated that species with tetrahedrally coordinated aluminium dominated the early stages of the reaction. (Author's abstract)

**Keywords:** *Engineering, Sol-gel process, Polymeric alumina gels, Spectral bands, Radius of gyration, Tridecameric aluminum*

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Inhenyeriya, Volume No. 2 Issue No. 1, 29-42  
2001,  
(Filipiniana Analytics)  
NP

0189

### **Production of peptone from chicken feathers**

*Sablan, Khризelle Angelique D. , Capinpin, Geordan Gerald L. , Velasquez, Allan Paolo V. , Alamar, Vera Loise Q. , Miranda, Jevie S. , Subosa, Bemboy NiÃ±o F., de Leon, Rizalind*

Peptones are the product of a protein hydrolysis, which serve as the main nutrient source for bacteria in a culture media. This study aimed to provide a locally feasible process for peptone production. Optimization results for Phase I showed that a temperature of 90°C, a digestion time of 4 hours, and a ratio of 0.06 g feathers/mL produced a yield of 50.6%.

Statistical analysis showed that *E. coli* growth on the laboratory-produced peptone is significantly greater than the growth realized on commercial peptone and plate count agar. *B. cereus* growth on laboratory-produced peptone, however, was significantly lower than the growth on commercial peptone and plate count agar. Purification, drying, and characterization techniques were integrated into the existing process for Phase 2 to obtain peptones with better commercial quality. The maximum yield obtained was 30 g peptone per 100 g feathers. Freeze-dried powders from the purified hydrolysates had reduced odor and moisture as compared to the vacuum dried peptone. The vacuum-filtered batch also approximated the physical characteristics of the standard peptone hydrolysate. Performance testing for Phase 2 showed increased support for bacterial growth. **(Author's abstract)**

**Keywords:** *Engineering, Chicken feathers, Peptone production, Nutrient media*

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Philippine Engineering Journal, Volume No. 37 Issue No. 1, 63-78  
2016,  
(Filipiniana Analytics)  
NP

0190

### **A public transportation stop location and scheduling model with stochastic demand**

*Uy, Darlene Joy, Ruiz, Reginald, Lim, Tanya, Beng Hui, Dennis T., Li, Richar*

This study presents a mathematical model that simultaneously locates transport stations and formulates a schedule for transport systems given stochastic demand for different time periods. These are important decisions to make because of the conflicting objectives of the different groups involved in transport operations. Previous studies have considered only location or scheduling and sought the optimisation of performance measures desired by one group of decision-makers only. **(Author's abstract)**

**Keywords:** *Engineering*

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DLSU Engineering Journal, Volume No. 18 Issue No. 1,  
2006,  
(Filipiniana Analytics)  
NP

0191

### **Refinery hydrogen integration with symmetric fuzzy linear programming**

*Tan, Raymond R., Cruz, Den*

Optimal utilization of hydrogen streams in refineries using process integration techniques is necessary as the rising cost of high grade crude oil forces companies to use feed stocks of lower grade. Lower grades of crude oil can be used to make petroleum products of the desired quality level through a variety of thermochemical conversions such as hydrocracking and hydrotreating. Optimal allocation of hydrogen streams of required flowrates and concentrations can be done using different integration techniques, including mathematical programming. In practice accurate stream data is not always available. Synthesis of hydrogen allocation networks under such conditions of uncertainty can be done using symmetric fuzzy linear programming. This approach, which was originally applied to water allocation problems, is demonstrated using a hydrogen integration problem from literature. **(Author's abstract)**

**Keywords:** *Engineering, Hydrocracking, Hydrotreating, Thermochemical conversion, Hydrogen integration*

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DLSU Engineering Journal, Volume No. 18 Issue No. 1,  
2006,  
(Filipiniana Analytics)  
NP

0192

## **Second low analysis of annular sector ducts in fully developed laminar flow under constant wall heat flux**

*Falahat, A*

In this paper, the entropy generation of a fully developed laminar flow in annular sector ducts with constant wall heat flux is investigated. Entropy generation is obtained for various aspect ratio ( $\epsilon$ ), various sector angles ( $2\phi$ ), various wall heat flux and various Reynolds number. It is found that with the increasing aspect ratio ( $\epsilon$ ) and sector angles ( $2\phi$ ) values, total entropy generation and pumping power at fixed Reynolds number increases and with increasing wall heat flux values, total entropy generation increases, however, pumping power decreases. **(Author's abstract)**

**Keywords:** *Engineering, Entropy, Annular sector duct, Laminar flow, Pumping power*

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International Journal of Science and Technology, Volume No. 1 Issue No. 2, 85-90  
2012 February,  
(Filipiniana Analytics)  
NP

0193

## **Shielding effectiveness of nickel-coated polycarbonate film**

*de Guzman, Eric M. , Culaba, Ivan B. , Caluyo, Felic*

Nickel coated polycarbonate film has been investigated to determine its shielding effectiveness (SE). A method to measure the SE is to place the coated film in an open side of a metal square box (3"x3"x3") and then expose to RF Source. Using the U.S. Military Standard 285 [1] and revised version of ASTM-D4935 [2] as reference and at 100 Mhz to 3 Ghz frequency range, the SE of nickel coated on polycarbonate film can be experimentally determined by taking the difference between the RF Signal with and without the shield as measured using Advantest R3131A Spectrum Analyzer. (Author's abstract)

**Keywords:** *Engineering*

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DLSU Engineering Journal, Volume No. 18 Issue No. 1,  
2006,  
(Filipiniana Analytics)  
NP



### **Solving for uncertainties in robotic part mating and the KALMAN filter observability**

*Chua, Alvin Y., Katupitiya, Jayantha Calilung, E*

The uncertainty problem present in robotic part-mating situation deals with the identification and compensation of misalignments or errors (uncertainties) that may lead to unsuccessful assembly. Studies have been done employing special equipment throughout the years to try and solve the problem. A novel method of solving for the uncertainties was implemented which used the Kalman Filter with force-moment sensor. A state estimation set-up tested the Kalman Filter implementation. Then, a pre-analysis of the uncertainty identification situation was done to test the effectiveness of the Kalman Filter with force moment sensor strategy. Finally, the observability problem was introduced and solved by using a random contact strategy which decoupled the unobservable uncertainties. The results proved that the Kalman filter with force sensor strategy could solve the grasping and contact uncertainties even in the presence of the observability problem. **(Author's abstract)**

**Keywords:** *Engineering, KALMAN filter, Force-moment sensor, Observability, Uncertainties, Part mating*

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Inhenyeriya, Volume No. 1 Issue No. 1,  
2000,  
(Filipiniana Analytics)  
NP

### **A study on the effects of workstation design on fatigue in computer tasks**

*Seva, Rosem*

The effects of computer encoding on fatigue were analyzed by conducting a controlled experiment. Three independent variables were considered, namely; two screen viewing angles, two types of chair used and the presence/absence of wrist support. A full factorial design was used and counterbalanced using Latin Square 8x8 design. The experiment was conducted in a real work environment where the encoders do their usual tasks. The type of chair used turned out to be a significant factor on fatigue symptoms such as feeling of tiredness, desire to lie down, low back pain and shoulder stiffness. There were no significant factors identified in the responses: critical fusion frequency (CFF), eyestrain, "accept to commit mistakes" and productivity. Viewing angle and the presence of wrist support were not significant factors in any of the responses considered in the experiment. There were no statistically significant interactions identified in the experiment. **(Author's abstract)**

**Keywords:** *Engineering, Fatigue in computer tasks, Workstation design, Effect of viewing angle, Anthropometric data, Productivity*

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i, Volume No. 3 Issue No. 1,  
2003,  
(Filipiniana Analytics)  
NP

## **A survey on the use of statistical process control tools in Philippine-based companies**

*Zalatar, Wi*

The main concern of this study is to ascertain the extent and magnitude of the use of SPC tools in Philippine-based companies. A survey was conducted in order to determine which of the major SPC tools are being utilized by the various companies and their reasons for doing so, what types of data are inputted into and the persons in-charge of constructing these tools, and what are the benefits obtained by the organizations as a result of the application of SPC methods. (Author's abstract)

**Keywords:** *Engineering, SPC tools, SPC methods, Philippine-based companies*

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DLSU Engineering Journal, Volume No. 18 Issue No. 1,  
2006,  
(Filipiniana Analytics)  
NP

0197

## **Thermogravimetric analysis of the pyrolysis of an industrial sludge**

*Salazar, Carlita M. , Benitez, Jul*

The thermal decomposition of an industrial sludge under nitrogen atmosphere was studied by means of thermogravimetric analysis (TGA) using the Shimadzu TG50 thermal analyzer. The TGA curves showed that the pyrolysis of dry sludge occurred in two stages, depending on the heating rate. The first stage occurred between 315°C and 400 °C; the second stage, between 380 °C and 520 °C. Heating rates of 10, 20, 50 and 75 °C/min were employed in the study. The kinetics of the pyrolysis were deduced from the weight-loss versus temperature data. Two models were used to determine the kinetic parameters: the Simple Arrhenius Equation and the Coats & Redfern Model. The Simple Arrhenius Equation showed that at lower heating rates of 10 °C/min to 20 °C/min, the thermal decomposition of sludge was first-order but at higher heating rates of 50 °C/min to 75 °C/min, it was second-order. On the other hand, the Coats & Redfern Model indicated that the thermal decomposition of sludge was first-order at all heating rates from 10 °C/min to 75 °C/min. Results from the above-mentioned kinetic determination could be used in the proper design and operation of actual thermal processes for the disposal of industrial sludge. (Author's abstract)

**Keywords:** *Engineering, Thermogravimetry, Pyrolysis, Thermal decomposition, Industrial sludge , Kinetics*

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Inhenyeriya, Volume No. 2 Issue No. 1, 43-51  
2001,  
(Filipiniana Analytics)  
NP

0198

## **Transport of methylene blue through an organic porous coco peat medium column**

*Gonzales, III,*

Industries such as textile and paper that use dyes to color their final product discharge substantial volumes of highly colored water into natural water bodies. Understanding the mechanisms of dye removal from wastewater

before discharge to surface waters is important since dyes may disrupt biological processes in the water environment. In this study, the feasibility of using coco peat in removal of methylene blue is demonstrated. A mathematical model describing the chemical transport and removal of Methylene Blue (MB) onto a highly organic biosorbent coco peat was solved in MATLAB using a semi-discrete finite difference with fourth order upwind differentiation. The needed parameters on adsorption of MB onto a biosorbent coco peat were obtained using batch experiment. The batch experiment indicated coco peat is a very good adsorbent of MB with a removal efficiency of 99.61%. It was also shown that the adsorption at equilibrium obeys the Langmuir isotherm with parameters such as maximum adsorption capacity,  $q_m$ , and the Langmuir coefficient,  $KL$  determined for all the temperatures investigated. A column experiment was carried out to obtain effluent breakthrough curves used for calibrating the mathematical model. A linear driving force coupled with solid diffusion model was applied successfully to the experimental data to determine the three major transport parameters, axial dispersion coefficient,  $DL$ , external mass transfer coefficient,  $k_f$ , and solid diffusivity,  $D_s$ . The model was tested and fitted well on one experimental case with  $DL = 1.1304E-05 \text{ m}^2 \text{ s}^{-1}$ ,  $k_f = 3.6399E-04 \text{ m s}^{-1}$ ,  $D_s = 3.34871E-08 \text{ m}^2 \text{ s}^{-1}$  (RMSE = 0.0009). The results also show that the breakthrough curves are dependent on  $DL$  and external  $k_f$ , but not on  $D_s$ . **(Author's abstract)**

**Keywords:** *Engineering, Methylene blue removal, Coco peat absorbent, Modeling break-through curves*

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Philippine Engineering Journal, Volume No. 37 Issue No. 1, 23-44  
2016,  
(Filipiniana Analytics)  
NP

0199

## UPNEC performance management system using the balanced scorecard

*Pacia, Adel*

The University of the Philippines National Engineering Center (UP-NEC) has been mandated through P.D. 1295 to fortify the country's continuing efforts at national development. In order to achieve this, the UP-NEC aims to provide technical training to ensure a steady and expanding supply of technical manpower with expertise in the various fields of technology and engineering; as well as, to develop technologies for the sustainable utilization of indigenous resources that address the needs of the local industry. In pursuit of this mandate, UP-NEC applied for and was awarded the Philippine Quality Challenge (PQC) Level 1 in 2012 and the Philippine Quality Award (PQA) Level 1 in 2016. PQA is not only a national recognition for exemplary performance, it also stimulates local companies and organizations to improve quality and productivity in fulfilling its mandate and its vision to be the HUB of Engineering Innovations and Technology.

The findings and recommendations from the PQA Team of Assessors identified UP-NEC's strengths as well as opportunities for improvement. With the assessment, it was deemed that a more strategic performance assessment is needed to ensure that UP-NEC is able to fulfill its mandate and its vision. The Balance Scorecard was chosen as the performance measurement and strategy management system to align its strategic objectives of Service, Reach and Self-sufficiency with the attainment of goals for the employees and partners, effective internal processes, service to its clients and stakeholders as well as financial sustainability.

The study discusses the National Engineering Center's (UP-NEC) proposed Balanced Scorecard strategies and initiatives to attain its strategic objectives and move towards being a true hub of engineering innovations and technology in support of the country's continuing efforts at national development. **(Authors' abstract)**

**Keywords:** *Engineering, National Engineering Center, Balanced scorecard, Philippine quality award*

**A VHDL hardware model of the ITU-T G.728 standard with a synthesizable code book search module**

*Lu, Michael Adrian L. , Faustino, Jr., Narciso D. , Hernando, Jonathan S. , Del Cano, Ser Christian R. , Lapira, Edzel R., Tan Casis, Arnold Benedic*

The transmission of audio signals over a medium of limited bandwidth has been a longtime problem that had caused several compression schemes to be developed over the years. For audio signals the compression scheme that is to be implemented must be able to perform compression fast enough so that the delay would not be noticeable. An ITUT standard for low delay code excited linear prediction algorithm known as G. 728 is one of the best solutions developed to address the specific need. The research includes the hardware model of the G. 728 encoder implemented in VHDL and a G.728 decoder implemented in C language. (Author's abstract)

**Keywords:** *Engineering*

**ENVIRONMENTAL SCIENCE**

**Fish diversity, ecological status, and conservation measures of the coastal waters in Tubay, Agusan del Norte, Philippines**

*Patricio, Jose Hermis P. , Alima, Mark Anth*

This study was conducted primarily to determine fish diversity of the coastal waters of mining areas in Tubay, Agusan del Norte. There were 23 fish species identified belonging to 19 genera and 12 families. Indo-pacific sergeant fish (*Abudefduf vaigiensis*) was relatively the most abundant in all the three stations comprising more than 25% of the total. Station 1 had the most numerous (556) and diverse (1.969) fish species. There was a significant difference in the number of fish individuals but had no significant difference on species diversity index with respect to sampling stations. Station 2 had the highest species richness index (0.633), while Station 3 had the most even distribution (0.817). Stations 1 and 2 were 77.8% similar. The average water depth, temperature, transparency, pH and salinity were 4.52 meters, 26.53 °C, 3.97 meters, 8 and 34.33 ppt, respectively. These all fall within the DENR standards for Class SC water. (Author's abstract)

**Keywords:** *Environmental science, Fish diversity, Properties, Conservation, Coastal waters*

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## FISHERIES

0202

### **Checklist of fishes found in the fresh and brackish waters of Negros and Siquijor, Philippines** *Carumbana, Esther E. , Bucol, Ab*

A total of 89 species of fish found in fresh and brackish waters belonging to 45 families is known in Negros and Siquijor islands. The most species rich is the Family Gobiidae (13 species) followed by the Family Eleotridae (10 species), Ophichthidae (six species), Cyprinidae (three species), and Poeciliidae (four species). The Families Muraenidae, Ambassidae and Mugilidae are represented by three species each and the Families Plotosidae, Syngnathidae, Terapontidae, Apogonidae, Carangidae, Lutjanidae, and Cichlidae are represented by two species each. The rest of the families are represented by only one species. Most of the species belonging to the Families Poeciliidae, Clariidae, Cyprinidae, and Loricariidae are all introduced species and brought to the country through the aquarium trade and aquaculture programs. **(Author's abstract)**

**Keywords:** Fisheries, Fresh water fish, Brackish water fish, Fish checklist, Fish fauna

0203

### **Cheliped design and mechanical advantage of the Portunid crabs, *Scylla serrata* and *S. olivacea*** *Torio, Angelica , Tribiana, Estrella T. , Masagca, Ji*

Brachyuran crab chelipeds (= chelipeds) function in different ecological roles, including capturing the prey and processing, agonistic interactions, mate selection and handling. Cheliped morphology can explain the ability to crush hard prey, which in itself can be for force generation, transmission and distribution. This study determined the cheliped design and mechanical advantage of male and female chelipeds (pinchers) of two portunid crabs, *Scylla serrata* and *S. olivacea* from Panganiban, Viga and Virac, Catanduanes. Crab's carapace width and external cheliped dimensions were measured using calipers. Different dimensions were defined in terms of 6 homologous landmarks found on all crab chelipeds and measurements between points were taken from external (lateral) and internal (medial) cheliped faces where possible, and all linear measurements were log<sub>10</sub>- transformed to compute for the mechanical advantage (MA). Results show that both *S. serrata* and *S. olivacea* have varied dimensions on the right and left chelipeds for both male and female samples. Computed MA in both portunid crabs are larger both in right and left chelipeds; and are higher in males compared to that of females indicating differences in force transmission for crushing food and antagonistic reaction. Cheliped designs and mechanical advantage of both *S. serrata* and *S.*

olivacea differ in males from female samples confirming sexual dimorphic characters in chelipeds and possibly dimorphic force transmission forces in both sexes. (Author's abstract)

**Keywords:** Fisheries, Portunid crabs, *Scylla serrata*, *S. olivacea*, Brachyuran crab chelipeds

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CAS Journal of Research, Volume No. 6 Issue No. 1, 1-15  
2012,  
(Filipiniana Analytics)  
NP

0204

### **Freshwater fishes of Tikub Lake, Tiaong, Quezon, Philippines** *Briones, Nicomedes D., Labatos, Jr., Bonifa*

Freshwater fish survey was conducted in Tikub Lake, a landlocked crater lake with an area of 48.34 hectares nestled at the foot of Mt. Malepunyo which is shared and bordered by Barangay Ayusan I and Barangay San Pedro in Tiaong, Quezon, Philippines. A total of 221 individuals comprising 9 species from 7 families were found in Tikub Lake, three of which are native and six are introduced. Diversity index was 1.87. A native, *Giuris margaritacea* and an introduced, *Poecilia sphenops* are the two most abundant species in the lake with relative abundance of 29.41% and 26.24% respectively. Although the study revealed that Tikub Lake hosts diverse community of fish, this is due to different introduced species as the lake is being utilized for aquaculture. Other uses of the lake include subsistence fishery, and to limited extent recreation and tourism. Just like any other lake ecosystems of the country, Tikub Lake experiences pressures due to different human activities both in the aquatic and terrestrial realms such as cutting of trees as wood fuel, excessive extraction of resources, and the ever increasing human population as evidenced by the presence of informal settlers. A sound community-based management strategy is a prerequisite to achieving environmental sustainability. (Author's abstract)

**Keywords:** Fisheries, Aquatic ecosystem, Freshwater fishes, Introduced, Translocated

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Asian Journal of Biodiversity, Volume No. 5 Issue No. 1, 41-53  
2014,  
(Filipiniana Analytics)  
NP

0205

### **Managing the river corridors of the Northeastern Catanduanes for inland fisheries and aquaculture development under the prospects of climate change: I - Barangay Hinipaan, Bagamanoc** *CSTIFDP Researc*

Guided by the challenges for sustainability research on observations, benchmarking, forecasting, and innovation (technological, political and societal), fieldwork activities and documentary analysis were done by a team of researchers on inland fisheries and aquaculture of the north to southeastern side in Catanduanes. Being the first of serial papers, this report examines freshwater systems, inland fisheries and aquaculture in the towns of Panganiban, Viga and Bagamanoc using the lenses of political ecology and social representations. Building on previous works, theses and reports about the NE towns of Catanduanes, we highlight here findings of a fieldwork done in Hinipaan,

Bagamanoc that intended to benchmark on the CSTI2FDP and include some aspects of the biophysical and political ecology of water-based livelihoods. Perceptions on sustainable inland fisheries and aquaculture in relation to conservation and climate change, the exploration into the representations of the upland/riverbank dwellers of Barangay Hinipaan and determination of their management behavior as inputs to decision and activity to adopt such inland fish culture and conservation initiatives were probed. The remarkably productive fisheries of the rivers and estuaries of the immediate past, and the livelihood of impoverished rural people that these aquatic agricultural system support, are increasingly confronting a series of threats due to various economic development and other socioecological processes. These threats are in turn driven by the local government efforts to transform the northeastern towns into economically viable aquatic production ventures and eco-tourism capitalizing on the unique biophysical and ecological features. Several shots of interview schedule administered to randomly selected inhabitants with homes located within the 500 m radius of the Hinipaan River revealed important inputs to an ongoing study on technology infusion in inland fisheries. Data were triangulated by focus group discussion, interviews and secondary documents from the Municipal Agriculture Office (MAO). Results show that the residents of Hinipaan were not aware of inland fisheries interventions except for projects on the KALAHI-CIDDS program. Typhoons, landslides, storm surges and flooding are not problems to the inhabitants. They have developed unique resiliencies to natural disasters as shown in their responses. Local inhabitants believe that the food fishes (and other aquatic organisms will just seek shelter in the deepest places (or natural reservoirs) known as "celibtong" where bigger rocks are found surrounded with large tree trunks and boulders. The abundance of gobies, mullets, carps, freshwater shrimp, eel and gastropods among others is due to their own conservation efforts like controlled fishing, collection and simple fish extraction methods just enough for family consumption, and not using electricity for fishing. They regard the practice of planting upland rice and vegetables in the mountain to avoid landslides aside from their regular practice of planting of trees like narra, apitong and other Philippine mahogany groups. For the point of view of the policy measures that will manage the countries dwindling fresh water fishing results must include fishery management. (Author's abstract)

**Keywords:** *Fisheries, Rivers, Inland fisheries, Aquaculture, Catanduanes, Aquatic agricultural system*

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CAS Journal of Research, Volume No. 6 Issue No. 1, 53-55  
2012,  
(Filipiniana Analytics)  
NP

## FORESTRY

0206

### **Use of edible forest plants among indigenous ethnic minorities in Cat Tien Biosphere Reserve, Vietnam**

*Mizoue, Nobuya , Ogata, Kazuo, , Sang, Dinh*

Based on the surveys combining the use of household interviews, key informants, rapid rural appraisal (RRA), and the "walk-in-the-wood" method; this article examines the uses of edible forest plants among the indigenous ethnic minorities (IEMs) in Cat Tien Biosphere Reserve (CTBR), southern Vietnam. The findings confirm that all of the respondents gathered and harvested the edible forest plants for both subsistence and income generation, primarily for favorite daily food. Overall, the survey identified 100 species of edible forest plants belonging to 45 families used by the IEM households, these were collected from natural forest, forest plantations and allocated forest land in CTBR, but primarily from the first type of land; 100% of households surveyed harvested some or many species of the plants. However, poor harvesting practices and overuse of the plant species are threatening their sustainability, the local uses and even the food source for wildlife. Additionally, most of the gathering was officially illegal since it occurred in state protected forests. It is recommended Asian Journal of Biodiversity 24 that the participation of IEMs in planned uses as well as the forest resource management, improved harvesting practices,

techniques of domestication, encouragement of priority forest edible cultivation should be preferred. (**Author's abstract**)

**Keywords:** *Forestry, Cat Tien Biosphere Reserve, Domestication, Edible forest plants, Indigenous ethnic minorities, Sustainable use*

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Asian Journal of Biodiversity, Volume No. 3 Issue No. 1, 23-49  
2012,  
(Filipiniana Analytics)  
NP

0207

**Vascular plants of the peat swamp forest in Caimpugan, Agusan del Sur Province on Mindanao Island, Philippines.**  
*Fernando, Edwino S. , Aribal, Low*

The peat swamp forest is a newly recognized forest formation in the Philippines following its discovery to science in 2005. This paper aimed to present the checklist of plant species in the peat swamp forest of Caimpugan, Agusan del Sur, where such information has been lacking. The checklist was based on the collected specimens during the rapid assessment on November 2010, intensive fieldworks on September 2011 and in the recent site visit on September 2013. One hundred and one (101) species belonging to 56 families and 81 genera were recorded. *Tristaniopsis micrantha* (Merr.) Peter G. Wilson and J.T. Waterh and *Thoracostachyum sumatranum* (Miq.) Kurzare were the most dominant species for trees and understory vegetation, respectively. Four (4) species are considered threatened such as *Hoya crassicaulis* Elmer ex Kloppenb, *Huperzia squarrosa* (G. Forst.) Trevis., both are endangered while *Asplenium nidus* L. and *Myrmecodia tuberosa* Jack are considered vulnerable. The families with the highest number of taxa observed were Rubiaceae (5 genera, 5 species), Orchidaceae (4 genera, 4 species), Euphorbiaceae (4 genera, 4 species), Lauraceae (3 genera, 4 species), Myrtaceae (2 genera, 6 species), Clusiaceae (2 genera, 5 species), Arecaceae (2 genera, 3 species), Pandanaceae (2 genera, 3 species), Poaceae (2 genera, 3 species), Menispermaceae (2 genera 2 species)and Apocynaceae (1 genus, 4 species). The rank abundance of taxa conforms to the observed percent indigenous and endemism pattern of the country based on the framework for Philippine plant conservation strategy action plan of DENR-PAWB. (**Author's abstract**)

**Keywords:** *Forestry, Species composition, Caimpugan, Peat swamp forest, Agusan del Sur*

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Asian Journal of Biodiversity, Volume No. 5 Issue No. 1, 1-17  
2014,  
(Filipiniana Analytics)  
NP

**GENETICS**

0208

**Ecology and genetic structure of giant clams around Savu sea, East Nusa Tenggara Province, Indonesia**  
*Calumpang, Hilconida P. , Tisera, Wilso A. , Naguit, Ma.*



Giant clams are harvested by coastal communities around Savu Sea for food. As one of the important inhabitants of the reef, their status in terms of abundance of adult population and recruits was assessed. The genetic structure of *Tridacna maxima* was also determined for use in the establishment of network of MPAs around Savu Sea. There were four species identified during the survey: *Tridacna crocea*, *T. maxima*, *T. squamosa* and *Hippopus hippopus* with *T. maxima* as the most common in all sites. Clam density ranged from 0.33 ind./ m<sup>2</sup> to 19 ind./ m<sup>2</sup>.

Population subdivision was found to be highly significant among the five *T. maxima* populations as assessed using the Analysis of Molecular Variance (AMOVA). The percentage of total molecular variation within samples was 73.20%, and that among samples was 26.80%, amounting to  $F_{ST} = 0.26798$  which is significant (p-value = 0.014). However, pairwise comparison revealed genetic relatedness between some populations. **(Author's abstract)**

**Keywords:** Genetics, MPAs, Genetic structure, Genetic relatedness, Giant clams, Savu sea

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Asian Journal of Biodiversity, Volume No. 3 Issue No. 1, 174-194  
2012,  
(Filipiniana Analytics)  
NP

0209

### **Genetic variability within the population of the Vulnerable Mindanao Endemic Blue-Capped Kingfisher (*Actenoides hombroni*) using polymorphic DNA markers**

*Nuñez, Olga M. , Casim, Lothy F., Teves, Franc*

The restricted range and small population size of Mindanao endemic blue-capped kingfisher (*Actenoides hombroni*) and the degradation of its habitat provide an ideal case to study the genetics of this species. DNA samples were taken from *A. hombroni* netted from Nursery and Gabunan, Rogongon, Iligan City and Kimangkil, Bukidnon. Random amplified polymorphic DNA (RAPD) analysis and agarose gel electrophoresis were used to assess the genetic variability within its population. The random primer used had generated 25 reproducible RAPD markers showing three distinct banding patterns with low polymorphism. Shared or specific fragments were counted and genetic similarity within population was calculated. The similarity coefficient (F) estimation revealed that there were more pairs of individuals with F values equal to 1 (high genetic similarity) and having no F value equal to 0 (low genetic similarity). 157 Results suggested that there is a considerable low genetic diversity that existed within the population of *A. hombroni*, which could be explained by their geographic proximity. Findings of this study are significant most specially in the formulation of conservation strategies for the Mindanao endemic and vulnerable *A. hombroni*. **(Authors' abstract)**

**Keywords:** Genetics, *Actenoides hombroni*, Genetic variability, PCR, RAPD markers, Similarity coefficient, Rogongon, Ilagan City, Mt. Kimangkil, Bukidnon

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Asian Journal of Biodiversity, Volume No. 3 Issue No. 1, 156-173  
2012,  
(Filipiniana Analytics)  
NP

0210

## **Intraneuronal aggregate formation and cell death after viral expression of expanded polyglutamine tracts in the adult rat brain**

*Kaspar, Brian , Suhr, Steven T. , Senut, Marie-Claude, Gage, Fre*

Expanded polyglutamine (polyQ) tracts have been linked to a new class of human disease characterized by psychiatric/motor syndromes associated with specific patterns of neurodegeneration. We have used a direct viral approach to locally express expanded polyglutamine tracts fused to the green fluorescent protein (97Q-GFP) in the adult rat brain. We show that intrastriatal expression of 97Q-GFP causes the rapid formation of fibrillar, cytoplasmic, and ubiquitinated nuclear aggregates in neurons. 97Q-GFP expression also results in a specific temporal pattern of cell death in the striatum. Co-infection studies suggest that high level 97Q-GFP-expressing cells die during the first month, whereas low level 97Q-GFP-expressing neurons persist for up to 6 months after infection. These data indicate that cumulative expression of polyQ repeats throughout the life of the animal is not required to induce neuronal death, but rather acute overexpression of polyQ is toxic to adult neurons *in vivo*. (**Author's abstract**)

**Keywords:** *Genetics, Polyglutamine repeats, Gene transfer, Adenoassociated viral vectors, Brain, Rat, Huntingtons disease, Aggregates*

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JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 1, 219-229  
2000 January,  
(Filipiniana Analytics)  
NP

## **GEOLOGY**

**0211**

### **Integrated mapping of lineaments in Ago-Iwoye SE, SW Nigeria**

*Akinbodewa A.E. , Mosuro, G.O. , Omosanya*

Structural studies of Joints on rock exposures was carried in Ago-Iwoye, NE, SW, Nigeria (N 060561 -060581 and E 0030 521-0030 561) with the aim of integrating linear structures from outcrop to larger lineament on satellite imageries.

A petrographic study of rocks was done in order to identify the rock types of the study area. Structural measurement such as the attitude (strike and dip), length, and average perpendicular distance was taken on three hundred and twenty six (326) joints while sixty nine (69) lineaments were extracted from Google Earth imageries covering the study area and its surroundings; the lengths and orientations of the lineaments were also determined and plotted on Rosette diagrams and lineament density map.

Slightly foliated granite-gneiss, biotite gneiss, and pegmatites were identified from the petrographic studies. The dominant orientations of Joints are E-W & ENE-WSW suggestive of dominant N-S or NNW-SSE directed stresses, and joint types mapped include systematic, non-systematic, conjugate, T-joints and cross joints with average perpendicular spacing between joints ranging from 4cm - 67cm.

Two dominant structural domains were identified from the lineament map; these are NE-SW & NW-SE with dominant orientation of Lineament being NE-SW, suggestive of NW-SE tectonic (extensional forces), minor ENE-WSW and E-W orientation suggestive of shearing evinced by conjugate joints sets were also recorded. Evidence from the lineament density map suggest that the NE, NW & SW parts of the study area were highly dense while the E-SE part is less dense or near zero relative to lineament concentration; this same trend was earlier observed during the ground mapping.

There is overlap between the minor NW-SE/ENE-WSW orientations in lineaments and joints; this implies that these fractures in both cases were produced by similar tectonic events while other orientations are product of dissimilar tectonic events/regimes. **(Authors' abstract)**

**Keywords:** *Geology, Mapping, Joints, Lineament,, Orientation, Tectonic, Stresses*

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2012 February,  
(Filipiniana Analytics)  
NP

0212

### **Krivaja – Konjuh Ophiolite Complex in Bosnia and Herzegovina addition to study on mineral composition of metamorphic rocks**

*Hyseni, S. , Oper*

The paper gives the results on researches of sporadically and accessory components of the amphibolites rocks in the south rim of the Krivaja – Konjuh ophiolite complex in Bosnia and Herzegovina. By optical analyses and x-ray fluorescence spectroscopy examinations as well as electronic microprobes, it was established that in analyzed amphibolites were sporadically found these: corundum, spinels (chrome spinel, hercinite, chrome hercinite and magnesium-chromites), chlorites (clinocllore and ripidolite), zeolite minerals (thomsonite and mesolite), prehnite, epidote-clinocoisite, analcime, albite and serpentine. Examinations indicated that corundum has been found in amphibolites schists as important, secondary and accessory component in form of grain aggregates, like porphyroblast and root mineral. Corundum porphyroblasts contain small inclusions of clinocllore and tchermakite partially transformed into margarite and anorthite, what was proved by x-ray fluorescence spectroscopy and microsonde analyses. Corundum roots which cut corundum amphibolites rarely appear stretch parallel with pholiatia, and they arouse by post-cinematic secretion. The investigations of flaw minerals covered polarization microscopic examinations, x-ray examinations, and electronic micro-probe chemical analyses. The flaw minerals found are as follows: prehnite, zeolite minerals including thomsonite, mesolite, epidote-clinocoisite, chlorite, calcite and less frequently plagioclase-albite, anorthite, quartz, corundum and analcime formed in the post-consolidation stage of hydro-thermal activities mainly under low-degree metamorphic conditions. Corundum veins and seams crosscutting corundum amphibolites formed post-kinematic secretion. By the researches on amphibolites rocks, there were established the presence of accessory components, with dominant participation of magnetite, titanite, ilmenite, rutile, zircon, apatite, phlogopite and biotite. **(Author's abstract)**

**Keywords:** *Geology, BiH, The Krivaja – Konjuh ophiolite complex, Amphibolites rocks, Secondary components, Accessory components, Optical, Roentgen examinations, Microsonde analyses*

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International Journal of Science and Technology, Volume No. 1 Issue No. 5, 205-215  
2012 May,  
(Filipiniana Analytics)  
NP

**HEALTH AND WELLNESS**

0213

## **Behavioral troubles for the newcomer doctors in the public sector hospitals of Pakistan** *Ullah*

The concept of job burnout earned considerable interest of researchers because of its important implications for both individuals and organizations. Using qualitative research methodology, this study has explained the process of job burnout among the post-graduate doctors of the public sector hospitals of Pakistan. The data were collected from 40 post-graduate doctors of eight public sector hospitals in Pakistan using semi-structured interviews. Convenience sampling was used to select the respondents. The data collected suggested that doctors appear to face high level of demand stressors which are the starting point of burnout process. Due to the highly demanding nature of job and responsibility of life saving, doctors begin to feel emotionally exhausted. Due to the absence of supporting behavior from the colleagues and organization, doctors start using depersonalization to cope with the situation on emotional exhaustion. Finally, they begin to feel a diminished sense of personal accomplishment especially when their work environment provides little feedback and few rewards for their work accomplishments. Among few overall qualitative studies on job burnout, this is the only qualitative study conducted in Pakistan to explain the process of job burnout among doctors. This study not only explains the process of job burnout but also provides a way to control the burnout prevalence among the doctors. **(Author's abstract)**

**Keywords:** *Health and wellness, Burnout, Stressors, Emotional exhaustion, Depersonalization, Personal accomplishment, Qualitative research*

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Asian Journal of Health, Volume No. 2 Issue No. 1, 1-15  
2012,  
(Filipiniana Analytics)  
NP

**0214**

## **The caregiver's and nurse therapist's experiences on gestalt therapy** *Caneda, Hazel , Lapa, Ma. Mayla Imelda M. , Palompon, Daisy, Gonzaga, Joni Inocenc*

The most often neglected member of the group who cares for the patients in the hospital is the informal family caregiver who often experiences emotional crisis. This study explored how gestalt therapy helps the caregiver and the personal experiences of the nurse therapist who did gestalt therapy. Utilizing phenomenological design, three caregivers were provided with gestalt therapy and interviewed. The caregivers and the nurse therapist related that through gestalt therapy there was a feeling of relief and awareness of the crisis being experienced developed by the participants. It is concluded that gestalt therapy enables the caregivers to go through their crisis by enabling them to develop relief from emotional crisis, awareness of their problems and to move on despite the continued presence of the crisis. **(Author's abstract)**

**Keywords:** *Health and wellness, Gestalt therapy, Caregiver experiences, Nurse therapist*

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Asian Journal of Health, Volume No. 1 Issue No. 1, 48-59  
2011,  
(Filipiniana Analytics)  
NP

**0215**

## Chemodectoma and tetralogy of fallot

*Santiago, Kathleen Joy B. , Roldan, Rodante A. , Castañeda, Samantha S., Samio, Lian Meliss*

**Objectives:** To describe a rare case of chemodectoma, its clinical features and management and to discuss its relationship between chronic hypoxia from Tetralogy of Fallot.

### Methods:

**Design:** Case Report

**Setting:** Tertiary Government Hospital

**Patient:** One

**Results:** A 23-year-old woman presented with a painless, slow growing, movable right submandibular mass, initially diagnosed as a lipoma by fine needle aspiration biopsy. Computed tomography scan showed a solid nodule with ill-defined margins from the angle of the mandible to the level of the hyoid bone along the carotid sheath. There was also an incidental finding of patent ductus arteriosus and Tetralogy of Fallot on pre-operative clearance. Excision of the mass under general anesthesia revealed adherence to the posterior portion of the carotid trunk enveloping both the internal & external carotid artery. Final histopathological diagnosis was chemodectoma.

**Conclusion:** Although rare, chemodectoma should be considered as one of the differentials in a patient with a submandibular mass. Hyperplastic chemodectoma may result from chronic hypoxia due to Tetralogy of Fallot. Surgical excision is the treatment of choice. **(Authors' abstract)**

**Keywords:** *Health and wellness, Carotid body tumor, Chemodectoma, Paraganglioma, Tetralogy of fallot*

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 30 Issue No. 2, 34-37  
2015,  
(Filipiniana Analytics)  
NP

0216

## Clinical environment and critical thinking skills among graduating nursing students of Liceo De Cagayan University

*Kwong, Maryliet T. , Gaabucayan, Rex Januarius R. , Barcubero, Rudson Czar S. , Acuesta, Rubie Vicky Lyn C. , Acain, Kate June F. , Role, Remedios S. , Medio, Diana Apr*

This descriptive study, which was conducted at Liceo de Cagayan University delved to determine the clinical environment of the nursing unit that the students are exposed to and the critical thinking skills of the Graduating Nursing Students of Liceo de Cagayan University. It looked into the relationship of the independent variables indicated by the clinical environment characterized by encouragement to ask question, collaboration, exposure to case studies with critical thinking skills such as comprehension, application, analysis, synthesis and evaluation being the dependent variables. The respondents are the selected graduating nursing students of Liceo de Cagayan during the school year 2006-2007. The main tool used in the data gathering during the survey was a modified questionnaire patterned from the work of Benjamin Bloom, Creative Thinking: Blooms Taxonomy. The gathered data were analyzed and presented through weighted mean. The null hypothesis set at 0.05 level of significance was tested through the Pearson r test of significant relationship. The convenience sampling technique was utilized in the study. The study found that the student nurses were almost always exposed to the clinical environment of the nursing unit. They have frequently shown their critical thinking skills in all its indicators such as the comprehension, application, analysis, synthesis and evaluation. In conclusion, the study further revealed that a significant relationship exists

between critical thinking skills and encouragement to ask questions and exposure to case studies. No significant relationship exists between critical thinking skills and the clinical environment of collaboration. (Author's abstract)

**Keywords:** *Health and wellness*

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Nursing Research Journal, Volume No. 5 Issue No. 1,  
2009,  
(Filipiniana Analytics)  
NP

0217

### **Descending necrotizing mediastinitis: a dreaded complication of acute tonsillitis**

*Go, Ma. Stephanie C. , Cruz, Emmanuel Tad*

**Objectives:** To report a case of acute tonsillitis that subsequently developed descending necrotizing mediastinitis and to discuss the signs and symptoms, differential diagnosis, pathophysiology, diagnostic criteria, ancillary procedures and management.

**Methods:**

**Design:** Case Report

**Setting:** Tertiary Private and Government Hospital

**Patient:** One

**Results:** A 36-year-old woman was admitted with a 2-day history of sore throat and a diagnosis of acute exudative tonsillitis. She complained of sore throat accompanied by dyspnea, neck and chest pain which rapidly progressed to mediastinitis. She was transferred to a tertiary government hospital where video assisted thoracoscopic surgery with bilateral deloculation, mediastinoscopy and bronchoscopy revealed purulent discharge from the right main stem bronchus with multiloculated effusion in the left lung and posterolateral loculated effusion in the right lung. Her condition improved and she was discharged after a month of antibiotic therapy.

**Conclusion:** Acute tonsillitis seldom leads to a life-threatening complication such as mediastinitis. Descending necrotizing mediastinitis develops when acute tonsillar infection progresses and descends to the mediastinum. It is a surgical emergency which requires mediastinal drainage, thoracotomy and long-term antimicrobials. Clinicians who manage oropharyngeal infections should be aware of this rare but lethal complication which may occur even in nonimmunocompromised individuals. (**Authors' abstract**)

**Keywords:** *Health and wellness, Acute tonsillopharyngitis, Tonsillitis, Mediastinitis, Descending necrotizing mediastinitis*

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 30 Issue No. 2, 38-42  
2015,  
(Filipiniana Analytics)  
NP

0218

## **The empty nest: unvoiced concerns of the elderly** *Mahilum, Jofi Vald*

The study investigated the unvoiced concerns of the elderly in reference to their empty nest. The descriptive research design was used in the study. The respondents were 150 older persons from selected urban and rural communities. The respondents were selected through the purposive sampling technique. The selection criteria were: a) 60 years old or above; b) Neither living alone with the family or relatives; and c) either head of household or dependent. The research tool was an interview guide/schedule formulated to answer the objectives of the study. The data were analyzed using frequencies, percentages, and rank. The theory on “empty nest” is concretized by the experiences of the elderly as they voiced out their concerns related to this phase of their lives. A good number of the elderly are household heads with own sources of income. This contradicts the assumption that the elderly depends much on their children for their needs. It is ironic that the majority of the elderly provides support to their own family. Emotional insecurity is felt for having perceived that their children will only care when they are sick. Economic insecurity is felt for having incurred additional expense for regular medication and proper diet. The pressing health care needs of the elderly are founded on older age issues on the health care, financial assistance, providing for proper diet and nutrition, healthy environment, emotional counseling, physical therapy, and recreation. **(Author's abstract)**

**Keywords:** *Health and wellness, Elderly, Empty nest, Pressing needs, Problems, Challenges*

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Asian Journal of Health, Volume No. 1 Issue No. 1, 17-32  
2011,  
(Filipiniana Analytics)  
NP

0219

## **Environmental indicators of life expectancy** *Lozano, Emiliana J. , Japos, Genaro V. , Estrada, Ron*

The study determined the global patterns of environmental indicators and life expectancy in 97 countries selected through purposive sampling. Life expectancy index is the number of years a newborn infant would live if prevailing patterns of mortality at the same time of birth were to stay the same throughout the child's life. The study used data mining with four phases: exploratory data analysis, confirmation of data for reliability, theory formulation, and theory validation. The global pattern of human development indices revealed that clustering of countries reflects similarities in environmental characteristics. Cluster 1 includes the USA and the highly developed countries in Europe, Australia and Asia. These countries have strong environmental structures. Cluster 2 includes the least developed countries in Africa and Asia with low ratings in environmental indicators. Cluster 3 is formed by Asian developing countries and other newly industrialized countries. They have low ratings in environmental sustainability indicators. Cluster 4 includes countries in the American continent, and the southern and central parts and Asia. These countries have low environmental sustainability. The global trend of life expectancy indicates that people live longer if they live in countries with sustainable environment in terms of higher environmental health, clean and potable water, and clean and fresh air. **(Author's abstract)**

**Keywords:** *Health and wellness, International pattern, Life expectancy index, Gross domestic product index, Environmental health, Water stress, Air pollution*

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Asian Journal of Health, Volume No. 1 Issue No. 1, 1-16  
2011,  
(Filipiniana Analytics)  
NP

**Environmental management practices: their impact on family health of the households at Sitio Parola, Macabalan, Cagayan De Oro City**

*Narisma, Loui John R. , Lopez, Joelle Christyne M. , Pabelic, JibsonJanry U. , Luzano, Dafoodil O. , Ellevera, April Ann A., Vasig, Sheila May N. , Baluran, Flor*

This descriptive study conducted at Sitio Parola, Barangay Macabalan, Cagayan de Oro City, delved into a discussion of the environmental management practices and their impact on the family health of the residents. It focused on the three major points, namely: (1) What are the environmental management practices of the households at SitioParola, Barangay Macabalan, Cagayan de Oro City in the areas of waste disposal, cleaning the surroundings, maintaining the drainage, taking care of plants and trees, and caring for the domesticated animals? (2) What are the health conditions of the families and the common illnesses they have experienced? (3) Is there a significant relationship between environmental management practices and the health condition and common health problems of the families at SitioParola, Barangay Macabalan, Cagayan de Oro City? Forty households, represented by their heads, were purposively chosen as respondents of the study. A researcher-made instrument stated in the Cebuano dialect for better understanding was the main tool used in data gathering. The questions included in the research instrument were fixed alternative questions wherein the respondents were asked to indicate a check mark on the box opposite their answer to each query. The questions offered 4-point Likert scale response choices. Data analysis yielded the following results: On the average, the households “seldom” do the following activities involved in environmental management; waste disposal, cleaning of surroundings, maintenance of drainage, taking care of trees, plants, as well as domesticated animals. In terms of health conditions, the most common complaints are headache, cough, loose bowel movement, fever, and colds. Environmental management practices with regard to “maintenance of the drainage” were very highly correlated with the perceived health conditions of the families. The rest of the environmental management practices are only slightly correlated with the residents’ health condition. Basing on the findings, it may be concluded that doing activities in relation to environmental cleanliness may have a positive impact on disease prevention and health promotion, especially on drainage systems. Since the residents only “seldom” practice environmental management, it is recommended that the city and barangay officials plan activities to promote information and implement programs related to health and environment. (Author’s abstract)

**Keywords:** *Health and wellness*

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Nursing Research Journal, Volume No. 5 Issue No. 1,  
2009,  
(Filipiniana Analytics)  
NP

**Extended transpalatine approach for excision of *Juvenile angiofibroma***  
*Cabungcal, Arsenio A. , Carrillo, Ryner Jose C. , Hernandez, Josef*

**Objective:** To describe the extended transpalatine approach (ETPA) with transection of the ipsilateral greater palatine artery and extension of the ipsilateral retromolar incision and its corresponding surgical outcomes and present it as an option in the excision of juvenile angiofibroma (JA).

**Methods:**



**Design:** Descriptive case series  
**Setting:** Tertiary Public University Hospital  
**Subjects:** 13 JA cases undergoing ETPA

**Results:** Records of JA in a tertiary hospital from 2007 – 2013 were reviewed. Out of 35 JA patients, 13 underwent excision via extended transpalatine approach. Preoperative work-up included CT scan with contrast with or without preoperative embolization. In all patients, the wide field allowed easy tumor excision and facilitated inspection and hemostasis. There was only one recurrence in our series compared to 1 each for 4 endoscopic and 18 transmaxillary approaches. Not one of the patients developed a fistula or hypernasal speech. All patients had minimal palatal scarring, symmetric alveolar growth and palatal function.

**Conclusion:** The ETPA is a robust technique. It provides good exposure of JA with minimal preoperative requirements and postoperative complications. **(Authprs' abstract)**

**Keywords:** *Health and wellness, Juvenile angiofibroma, Juvenile nasopharyngeal angiofibroma, Transpalatine approach*

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 2015,  
 (Filipiniana Analytics)  
 NP

0222

### **Extent of nursing care rendered by student nurses among postpartum clients**

*Lingat, Angela Michaela F. , Ledesma, Odessa Adl B. , Jacobe, JeliusTriztan I. , Dacalos, Felipe Gerard G. , Basas, Emmie G. , Lingat, Ren*

This descriptive study conducted in hospitals in Cagayan de Oro City - Justiniano R. Borja Memorial City Hospital (JRBCH), Cagayan de Oro Medical Center (COMC), Sabal Doctors Hospital (SDH), and Cagayan de Oro Polymedic General Hospital (CDOPGH), aimed to determine how postpartum clients perceive the extent of nursing care provided by student nurses of the aforementioned hospitals. The only criteria for choosing the respondents were that they should be patients of the mentioned hospitals and that they are postpartum clients that are taken care of by student nurses. There are 26 postpartum-respondents and 22 student-nurses included. A modified questionnaire was the main tool in gathering the data and was administered during a 3-day period. The findings of the study were divided into the following aspects: therapeutic communication: establishing rapport and gaining trust, therapeutic communication: manner of communication, physical care: attentiveness/anticipation, physical care: competence, physical care: control of environment, and teaching collaboration: flexibility. (Author's abstract)

**Keywords:** *Health and wellness, Postpartal period, Retrogressive, Progressive*

Nursing Research Journal, Volume No. 5 Issue No. 1,  
 2009,  
 (Filipiniana Analytics)  
 NP

## Health promotion of local migrant workers in a highly urbanized city

*Neri, Donna Lou E. , Japos, Gen*

This descriptive study explores the health promotion of local migrant workers in a highly urbanized city in Southern Philippines. The respondents were the 164 workers in five of the biggest retail stores in the city. Modified questionnaires, supplemented with focus group discussions, were the main tools employed. Permission to conduct the study was requested from the Department of Labor and Employment and the store management. Written informed consent from the study participants was also sought. Data gathered were then processed using descriptive statistics. Results show that the male and female migrant workers are barely legal, just off their teenage life, attended college, mostly single, belonged to medium-sized families, with fathers either farmers or private employees and mothers who were housewives with no gainful employment. The workers had various physical and mental health problems, as well as poor health-seeking behaviors. The findings have various implications on program planning and policy making in related private and government agencies to promote the health of local migrant workers.  
**(Author's abstract)**

**Keywords:** *Health and wellness, Health promotion, Migrant workers, Health problems, Health-seeking behaviors*

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2011,  
(Filipiniana Analytics)  
NP

## Hypopharyngeal, supraglottic and subglottic stenosis after 1-week intubation

*Reyes, Niel Khan*

**Laryngeal stenosis** is a partial or complete narrowing of the endolarynx and has many etiologies. Common causes of laryngeal stenosis are iatrogenic (prolonged intubation, laryngeal surgery), external neck trauma, congenital, burns, ingestions, infection, and inflammation (gastroesophageal reflux or Wegener's). Laryngeal stenosis secondary to trauma usually affects the posterior endolaryngeal region in adults and the subglottic region in children.

Patients with mild to moderate laryngeal stenosis are usually asymptomatic and if otherwise, majority of the presenting signs and symptoms are mainly related to the airway, feeding and voice resulting to marked respiratory distress, dysphagia/odynophagia and altered voice, respectively.

We present a case of hypopharyngeal, supraglottic and subglottic stenosis occurring 1 week after intubation.  
**(Authors' abstract)**

**Keywords:** *Health and wellness, Hypopharyngeal, Supraglottic, Subglottic stenosis, Laryngeal stenosis*

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 30 Issue No. 2, 62-64  
2015,  
(Filipiniana Analytics)  
NP

**Interactions with the chronically-ill: discovering care opportunities for holistic health care**  
*Coballes, Arianne Katr*

This research is a qualitative inquiry on the caring interactions of hemodialysis nurses and End Stage Renal Disease patients. The research questions were focused on determining the caring characteristics that nurses used as they interact with the chronically-ill. A case study approach was considered appropriate by the researcher to match with the nature of the given processes. The study had been conducted in a natural setting with a total number of six hemodialysis nurse participants. Data were gathered by means of individual interviews and direct non-participant observations. The data were explored primarily within the case followed by cross case analysis incorporating thematic analysis. The data analysis generated conclusions: the existence of a unique caring relationship, the power of interpersonal teaching and the need for advocacy of end-of-life care opened doors for a better understanding of the interactions of a hemodialysis nurse and a chronically-ill patient. **(Author's abstract)**

**Keywords:** *Health and wellness, Nurses, Hemodialysis, Nurse-patient interaction, Chronic kidney disease*

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Asian Journal of Health, Volume No. 1 Issue No. 1, 33-47  
 2011,  
 (Filipiniana Analytics)  
 NP

**Level of awareness on health effects of second hand tobacco smoke among nonsmokers in selected bars in Cagayan De Oro City**

*Quabo, Septchie C. , Manoto, Anthony Oliver B. , Manganar, Maria Amor C. , Francisco, Karlo Misael N. , Ampong, April Kristy C., Vale, Lainie D. , Sy, E*

This study aimed to determine the level of awareness on the health effects of secondhand tobacco smoke among nonsmokers in selected bars in Cagayan de Oro City. It focused on the three major points: What is the profile of the respondents in terms of: age, educational attainment, civil status, gender and frequency in going to bars? (2) What is the level of awareness on the health effects of secondhand tobacco smoke among the respondents?(3) Is there a significant difference in the level of awareness on the health effects of secondhand tobacco smoke when respondents were grouped according to: age, educational attainment, civil status, gender and frequency in going to bars? In answering these problems, the researchers used the descriptive design. The method was further used to determine if there was significant difference in the level of awareness on health effects of secondhand tobacco smoke when the respondents were grouped according to age, educational attainment, civil status, gender and frequency if going to bars. The analyses yielded the following results: (1) The majority of the respondents are 21-25 years old, college level, single, female and go to the bar once a week. (2) The respondents are very aware on persistent cough and nicotine addiction as the health effects of second hand tobacco smoke. (3) The respondents significantly differ in their level of awareness on the health effects of secondhand tobacco smoke when they were grouped according to educational attainment. In conclusion, the respondents are not very aware of the other negative health effects of secondhand tobacco smoke. The respondents' educational attainment has significant influence on their level of awareness on the health effects of second hand tobacco smoke. **(Author's abstract)**

**Keywords:** *Health and wellness, Second hand tobacco smoke, Level of awareness , Health effects*

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Nursing Research Journal, Volume No. 5 Issue No. 1,  
 2009,  
 (Filipiniana Analytics)

**Level of independence in performing activities of daily living among older persons in  
Barangay Kauswagan, Cagayan De Oro City**

*Palarca, Eden A. , Laddad, Justine B. , Ipanag, Kristine M. , Gebe, Mary Hope Charmaine P. , Elio, Angela  
Corazon B. , Arrojado, Donald A., Basas, Emmi*

This descriptive study aimed to identify the level of independence in performing activities of daily living among older people in Barangay Kauswagan, Cagayan do Oro City. It focused on three major themes: (1) the profile of the respondents in terms age gender, educational attainment and health status (2) the level of independence in performing the activities of daily living among elderly in terms of bathing, dressing, toileting, transferring, continence and feeding and (3) the significant difference in the level of independence in performing the activities of daily living among elderly when respondents are grouped according to age, gender, educational attainment and health status. The purposive sampling method was used in finding the respondents of the study which comprised of 50 elderly. An adapted standardized questionnaire was the main tool used based on the concept of Mary She/key RN, MSN, PhD and Meredith Wallace, PhD, RN, MSN, CS. called Katz Index of Independence in Activities of Daily Living or commonly referred to as the Katz ADL. The following are the results of study: In terms of age, most of the respondents were 70-74 years old, some were elementary level others were elementary graduates, and suffering from metabolic disorders, specifically diabetes mellitus In general, the respondents degree of independence in performing activities of daily living in terms of bathing, dressing, toileting, transferring, continence and feeding is high based on age, gender, educational attainment and health status. There is no significant difference on the level of independence in performing activities of daily living when respondents are grouped according to age, gender and educational attainment. A significant difference existed when respondents are grouped according to health status. In conclusion, senior citizens or elderly people when seen with afflictions or diseases that affect their physical stamina in doing things like bathing, feeding, transferring and the like independent is very much compromised. This is a very revealing finding to open the eyes of the health care providers and other stakeholders to design appropriate activities or programs, may it be social, medical, etc. that will enhance the health status of the elderly. (Author's abstract)

**Keywords:** *Health and wellness, Level of independence in bathing, Level of independence in toileting, Level of independence in dressing, Level of independence in feeding, Level of independence in transferring, Level of independence in continence*

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Nursing Research Journal, Volume No. 5 Issue No. 1,  
2009,  
(Filipiniana Analytics)  
NP

**A myringotomy and ventilating tube applicator: new look at a five-century-old procedure**  
*Sia-Vargas, Lily L., Amable, Jay Pee*

**Objectives:** To fabricate a single instrument that can be used to perform myringotomy and insert a pressure equalizing tube at almost the same time.

**Methods:**

**Design:** Surgical Instrumentation Setting: Tertiary Private Hospital

**Subject:** A chicken egg membrane was used as a tympanic membrane model

**Results:** The fabricated instrument was able to perforate the egg membrane and apply the modified polyethylene pressure equalizing tube in less than one minute without complications.

**Conclusion:** The prototype applicator can facilitate myringotomy and pressure equalizing (PE) tube insertion at only a fraction of the time it usually takes to do the standard myringotomy and subsequent ventilating tube insertion.  
**(Authors' abstract)**

**Keywords:** *Health and wellness, Myringotomy, Pressure equalizing tube, Ventilating tube, Acute otitis media, Otitis media with effusion, Polyethylene tube*

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, Volume No. 30 Issue No. 2, 50-55  
2015,  
(Filipiniana Analytics)  
NP

0229

### **Predictors of depression among institutionalized elderly clients**

*Bantugan, Jose , Ente Ruth , Palompon, Daisy , Florida, Kristine R*

The elderly population is considered vulnerable to stress. One common stereotype of growing older is that there is a high chance of becoming depressed. Utilizing a descriptive design, data were gathered from thirty-seven (37) respondents in two geriatric facilities in Cebu. A researcher-administered questionnaire was utilized containing the demographic data, Self-esteem Scale adapted from Rosenberg, Berlin Social Support Scale adopted from Schwarzer and Schulz and Geriatric Depression Scale. Findings revealed that majority of the respondents who are institutionalized are female, single and has acquired elementary level in terms of education with a mean age of 76. Moreover, respondents had moderate self-esteem, adequate social support and a depression level of moderate to severe. Only social support showed a significant correlation with depression. It is concluded that although social support is a necessary element for the prevention of depression among institutionalized geriatric clients. **(Author's abstract)**

**Keywords:** *Health and wellness, Predictors of depression, Institutionalized elderly clients, Elderly population*

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2011,  
(Filipiniana Analytics)  
NP

0230

### **Primary laryngeal aspergillosis in a postpartum patient**

*Calavera, Kenneth Z. , Villanueva, Jose Carlo R. , Lim, William S. , Opulencia, Alejan*

**Objectives:** To present a rare case of primary laryngeal aspergillosis manifesting with hoarseness in a seemingly healthy, immunocompetent, postpartum patient and discuss the probable contributing factors leading to this unusual

disease process.

**Methods:**

**Design:** Case Report

**Setting:** Tertiary Private University Hospital

**Subject:** One

**Results:** A 28-year-old previously healthy postpartum woman presented with hoarseness of a few weeks duration and recent intake of antibiotics and steroids. Videolaryngoscopy revealed a creamy, exophytic mass overlying both vocal folds. Microscopic examination revealed septated, dichotomously branching hyphae with acute angles characteristic of *Aspergillus* sp. The patient recovered with anti fungal medications.

**Conclusion:** The clinical presentation of laryngeal aspergillosis can be very non-specific and should not be disregarded merely on the basis of immune competence. It should be considered, together with other host and environmental factors when a patient responds poorly to conventional treatment. There is a need for quick and accurate diagnosis as the disease responds quite rapidly with appropriate anti fungal medications. **(Authors' abstract)**

**Keywords:** *Health and wellness, Aspergillosis, Hoarseness, Larynx, Postpartum, Immunosuppression*

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2015,  
(Filipiniana Analytics)  
NP

**0231**

## **Psychological well-being and coping mechanisms of battered women**

*Rodriguez, Tes*

The study determined the battered women's degree of psychological well-being, coping mechanisms and the relationship between psychological well-being and coping mechanisms. The variables were measured using the Carroll Ryff Scales of Psychological Well-Being and Ways of Coping Inventory and test of relationship was made using the Pearson r. The results show that the battered women had very good psychological well-being and positive reappraisal, seeking social support, accepting responsibility and planful problem-solving coping mechanisms were employed in succumbing distress associated with the experience from domestic violence. Psychological well-being and coping mechanisms were correlated but at various strengths. The findings reveal that battered women must not prolong their stay at home nor stay in the abusive relationship but run for shelter and seek help to promptly restore the shattered psychological well-being. An excellent psychological well-being leads them to cope with the crisis through problem-focused type of coping mechanisms. However, emotion-focused coping mechanisms are used when psychological well-being is not in excellent status. Constant supervision and monitoring must be given to them even if they are subjected to therapeutic sessions. A trained psychiatrist, psychologist and social worker are required to efficiently and effectively respond to the victims. Finally, a comprehensive intervention program encompassing all dimensions of a person must be crafted, designed and implemented in support to the battered women in the shelter home. **(Author's abstract)**

**Keywords:** *Health and wellness, Psychological well-being, Coping mechanism, Battered women*

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**Sinonasal ameloblastic carcinoma in a 50-year-old Filipino female: continuing tale of the unexpected**  
*del Mundo, Daryl A*

**Objective:** To report the possible malignant transformation of primary sinonasal ameloblastoma into sinonasal ameloblastic carcinoma.

**Methods:**

**Design:** Case Report  
**Setting:** Tertiary Public University Hospital  
**Patient:** One

**Result:** A 50-year-old woman with a previous diagnosis of sinonasal ameloblastoma reported recurrence of symptoms of right-sided nasal obstruction and epistaxis two years after endoscopic sinus surgery. Clinical examination, CT scans and subsequent total maxillectomy with orbital exenteration revealed a left intranasal mass with maxillary, ethmoid and orbital floor extension and pulmonary and hepatic metastases. Histopathologic findings of palisading columnar epithelium with reverse polarity with malignant features were consistent with ameloblastic carcinoma. Despite subsequent cycles of chemotherapy, the patient died two years after surgery. To the best of our knowledge, there have been no published reports of a primary sinonasal ameloblastoma with malignant transformation in the English literature.

**Conclusion:** Ameloblastic carcinoma is a rare neoplasm which may arise de novo or from malignant transformation of an ameloblastoma. Because ameloblastoma is commonly encountered in our setting, clinicians should be aware of this possibility and closely follow their patients accordingly. (**Authors' abstract**)

**Keywords:** Health and wellness, Sinonasal, Malignant transformation, Maxillary, Ameloblastic carcinoma

**Spontaneous passage of ingested coin in children**  
*Estolano, Patrick Joseph L. , Chua, Anto*

**Objective:** To determine the factors related to spontaneous passage of ingested coins in children.

**Methods:**

**Design:** Retrospective study

**Setting:** Tertiary Government Hospital

**Subjects:** The records of 136 pediatric patients with a history of coin ingestion seen at the emergency room department of our institution between December 2012 and May 2014 were retrospectively reviewed. Demographic data such as age and gender of the patient were recorded, including the type of coin, location of coin in the esophagus, time of ingestion and time of spontaneous passage into the stomach (for those that passed spontaneously).

**Results:** Spontaneous passage in 27 out of 136 pediatric patients with radiographic evidence of a round radio-opaque foreign body initially located in the esophagus eventually passed into the stomach or intestines, accounting for 20% of the total number of cases. Coin ingestion was more common in patients aged 5 to 6 years (33% of cases), with slight male predominance (58%). One peso coins were the most common type of coin ingested, however only 24% of these spontaneously passed. The rate of spontaneous passage was highest in smaller sized coins (5 and 25 centavo coin) compared to larger sized coins (5 peso). Proximally located coins, albeit more common than middle and distally located coins, were the least likely to spontaneously pass (12%). Average time interval from ingestion to passage of the coin was 12 hours.

**Conclusion:** Many factors are related to spontaneous passage of foreign bodies in the esophagus. The age of the patient, type of coin ingested, and initial location of the coin in the esophagus should be considered. Older patients, smaller sized coins, and distally located coins have the highest probability of spontaneous passage beyond the esophagus. A 12-hour observation period may be considered in patients with single esophageal coin ingestion. **(Authors' abstract)**

**Keywords:** *Health and wellness, Foreign body, Esophagus, Esophagoscopy*

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 30 Issue No. 2, 30-33  
2015,  
(Filipiniana Analytics)  
NP

0234

## **Stridor at birth: congenital laryngeal web**

*Pascual, Ma. Victo*

**Laryngeal web** is a rare entity, constituting 5% of all congenital laryngeal lesions, with a reported incidence of 1 in 10,000.1 It usually presents with stridor in childhood, but can be discovered in asymptomatic adults under anesthesia and is associated with failed intubations. We present the case of a newborn with stridor and respiratory distress due to laryngeal web. **(Author's abstract)**

**Keywords:** *Health and wellness, Laryngeal web, Congenital laryngeal lesions, Stridor at birth, Respiratory distress*

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 30 Issue No. 2, 59-61  
2015,  
(Filipiniana Analytics)  
NP



## **A comparative study of acceptance and use of ICT among university academic staff of ADSU and LASU: Nigeria**

*Ab.Rahim, N. , A.Iahad, N., , Oye,*

This research is on the comparative study of the intention to accept and use ICT among university academic staff of Adamawa State University (ADSU) and Lagos state University (LASU). 100 UTAUT survey questionnaires were administered to each of the university. The data collected was run by SPSS version 17. The Unified Theory of Acceptance and Use of Technology (UTAUT) model theory was verified using regression analysis to understand the behavioral intention of ADSU and LASU academic staff to accept and use ICT in their workplace. By comparing ADSU and LASU, the study confirms that UTAUT model predicts successful acceptance of ICT usage in both universities. The regression results show that the most influential predictor of academic staff intention to accept and use ICT in ADSU is Effort expectancy (EE), while that of LASU is Performance expectancy (PE). The study further confirms that in both institutions some of the academicians are still having the fear of using ICT for their teaching and learning. The comparison also shows that both ADSU and LASU do not have intention to reject ICT acceptance and usage in their workplace. Again the findings reveal that, the most influential construct outside UTAUT model influencing the behavioral intention of the academic staff to accept and use ICT in ADSU and LASU is attitudes towards use of technology. The knowledge gained from this study is beneficiary to the University administrators, academic staff and the Nigerian ICT policy makers. **(Author's abstract)**

**Keywords:** *Information and Communications Technology, Behavioral intention, University academicians, ICT, Unified Theory of Acceptance and Use of Technology (UTAUT) model, Acceptance, Usage*

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International Journal of Science and Technology, Volume No. 1 Issue No. 1, 40-52  
2012 January,  
(Filipiniana Analytics)  
NP

## **Modeling essentials of content management system (CMS) for web-based MIS applications**

*Fegade, Vasundhara , Shaikh, S*

Web Content Management Systems (WCMS) consist of applications used to create, manage, store and deploy content on the Web, including text, graphics, video or audio, and application code. Web Content Management Systems are often a component of Enterprise Content Management (ECM) solutions. However, the scope of these standards is limited to the basic WCMS solution. The Content Management layer contains the core components for the Web Content Management Application. The authorization component grants the appropriate privileges to users, based on their respective roles. Library Services provide the core content management functionality (check-in/out, version control), along with Publish, Staging, Logging, and Content Reporting/Auditing. Basic Workflow, embedded in most WCM solutions, provides for basic routing of content jobs. The Web Interface and Portal Application present the content to the various user segments, based on their authorization. Remote portlets (e.g., web parts, gadgets, widgets) can be used to embed content management functionality or sourced content in portals provided by other vendors. The search indexing engine can create searchable indexes from websites supported by WCMS solutions. Websites may also be independently indexed by NIH enterprise search engines. This paper concerns with some review work, introduction to towards some basic modeling of CMS/WCMS with the reference of entire reviewed sources. **(Author's abstract)**

**Keywords:** *Information and Communications Technology, Content management system (CMS), Web Content Management Systems (WCMS), Open source CMS tools, CMS-vendors, VO, CMS publishing, MIS*

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International Journal of Science and Technology, Volume No. 1 Issue No. 3, 132-136  
2012 March,  
(Filipiniana Analytics)  
NP

0237

## **Realization of all-optical discrete cosine and sine transforms using MMI structures on an SOI platform**

*Cahill, Laurence , Le, Trung*

The Discrete Cosine Transform (DCT) and Discrete Sine Transform (DST) have found applications in digital signal, image and video processing and particularly in transform coding systems for data compression and decompression. Multimode interference (MMI) in optical silicon on insulator (SOI) waveguides is attractive for realizing all-optical DCT and DST transforms as they have the advantages of low loss, ultra-compact size and excellent fabrication tolerances. In this paper, a novel approach to realize all-optical type I, II, III and IV DCT and DST based on multimode interference structures on silicon on insulator platform is proposed. Based on the transfer matrix method, the analytical expressions describing the characteristics of the MMI structures are derived. Designs of the proposed devices are then verified and optimized using 2D and 3D BPM simulations. **(Author's abstract)**

**Keywords:** *Information and Communications Technology, Multimode interference, Optical logic, Optical fuzzy logic, Optical signal processing, Optical transformations*

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International Journal of Science and Technology, Volume No. 1 Issue No. 1, 32-39  
2012 January,  
(Filipiniana Analytics)  
NP

0238

## **A survey on the applications of cryptography**

*Goyal, Sh*

This paper gives a brief summary of cryptography, where it is applied and its usage in various forms. Cryptography is a way of safeguarding the crucial data from unauthorized access.

It has emerged as a secure means for transmission of information. It mainly helps in curbing intrusion from third party. It provides data confidentiality, integrity, electronic signatures, and advanced user authentication. The methods of cryptography use mathematics for securing the data (encryption and decryption). **(Author's abstract)**

**Keywords:** *Information and Communications Technology, Cryptography, Data confidentiality, Integrity, Electronic signatures, Authentication, Encryption, Decryption*

### **On the realization of online ternary testable circuit**

*Chowdhury, Ahsan Raja , Nower, N*

Ternary Reversible logic got the attention in the recent years for its applications in different sections of Reversible Logic Synthesis. Designing online testable circuits are also considered as the prominent field of research in this domain. This paper presents a novel idea of Online Testable Ternary Reversible Circuits design, where architecture is capable of testing reversible ternary network in real-time (online). The error detection unit, a component of the proposed design, is also designed with reversible gates, for which the entire circuit is considered reversible. The evaluation of the proposed design is carried out with example circuits in terms of well-know design parameters to show the effectiveness and compactness of the circuit. **(Author's abstract)**

*Keywords: Information and Communications Technology, Garbage output, Minterm, Ternary online testing*

### **Use of ontological analysis for student skills control in e-learning: semantic web approach**

*Rogushina, Julia , Gladun, A*

The important elements of effective learning are control of student skills and ability for retrieval of new information relevant to subject domain of learning. We propose to use the domain ontology as an instrument for student skills examining. Students have to build the personal domain ontologies and thesauri of examine discipline (on base of natural language texts relevant to subject domain – lectures, textbooks, manuals etc. ) and then compare them with reference ones that are built by tutor. Analysis of student mistakes allows to propose them personalized recommendations and to improve the course materials in general. Personal ontologies are improved in process of learning and can expand the reference ontology according to personal skills and knowledge of student (fir example, by terms in other languages known to student). In future this ontology can be used for personificated informational retrieval in corresponding subject domain. **(Author's abstract)**

*Keywords: Information and Communications Technology, Ontology, Intelligent agent, Semantic web*

**Application of biotite composition in determination of petrogenesis of diorites from Toro and Dass, North Central, Nigeria***Ashano, E.C., Dada*

The compositional systematics of biotites from diorites of Toro and Dass, north Central Nigeria have been examined for the purpose of describing the nature of the granitic magma. Based on chemistry of biotites, Toro and Dass diorites are formed from the transition between peraluminous and calc-alkaline magmas. This type of magma is typically produced in subduction environments. It means that the diorites could have formed in an orogenic suit from calc-alkaline magma derived from melting in a subduction zone slab. There is little evidence of either magma mixing or large-scale crustal contamination. The petrographic studies of the representative samples of diorite from Toro show biotite replacing pyroxenes, which necessarily produce a biotite-pyroxene-plagioclase paragenesis from pre-existing assemblage. The Dass diorite samples show biotite overgrowing amphiboles and also replacement of biotite by chlorite. **(Author's abstract)**

**Keywords:** *Marine science, Biotite composition, Petrogenesis, Toro and Dass, North-central Nigeria.*

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International Journal of Science and Technology, Volume No. 1 Issue No. 4, 164-169  
2012 April,  
(Filipiniana Analytics)  
NP

**The flushing time of an environmentally sensitive, Yanbu Lagoon along the Eastern Red Sea Coast***Albarakati, A., Al*

Yanbu Lagoon is located close to a huge industrial area. The lagoon is known as a rich marine environment habitat and is classified as an environmentally sensitive area by the Presidency of Meteorology and Environment (PME) of Saudi Arabia and the International Union for Conservation of Nature and Natural Resources (IUCN). The flushing time of Yanbu lagoon is about 2-3 days. The measurements also showed that the water exchange between the lagoon and the open sea is not only controlled by the tidal force but at times the effects of winds may be significant. This short flushing time may not cause intolerable stress to its ecology. **(Author's abstract)**

**Keywords:** *Marine science, Red Sea, Yanbu, Flushing, Hydrography*

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International Journal of Science and Technology, Volume No. 1 Issue No. 1, 53-58  
2012 January,  
(Filipiniana Analytics)  
NP

## Bounds on connected domination in squares of graphs

*Srinivasa, G. , Muddebihal,*

Let  $G^2=(V, E(G^2))$  be a square graph of a graph  $G$ . A set  $D$  of  $G^2$  is said to be connected dominating set of  $G^2$ , if every vertex not in  $D$  is adjacent to at least one vertex in  $D$  and the sub graph  $\langle D \rangle$  is connected. The minimum cardinality of a connected dominating set of  $G^2$  is called the connected domination number of square graph  $G^2$  and is denoted by  $\gamma_c(G^2)$ . In this paper many bounds on  $\gamma_c(G^2)$  are found in terms of elements of  $G$  but not the elements of  $G^2$ . Also its relationship with other different domination parameters were obtained. Further we develop the relation between  $G$  and  $G^2$  in terms of domination parameters. **(Author's abstract)**

**Keywords:** *Mathematics*

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International Journal of Science and Technology, Volume No. 1 Issue No. 4, 170-176  
2012 April,  
(Filipiniana Analytics)  
NP

## Conjugate effects of radiation and viscous dissipation on natural convection flow over a sphere with pressure work

*Karim, M. R. , Alam, Shahidul , Alim, M. A. , Mir*

The effects of viscous dissipation and radiation on natural convection flow along a sphere with pressure work have been investigated. The governing equations are transformed into dimensionless non-similar equations by using set of suitable transformations and solved numerically by the finite difference method along with Newton's linearization approximation. We have focused our attention on the evaluation of velocity profiles, temperature profiles, shear stress in terms of local skin friction and the rate of heat transfer in terms of local Nusselt number for different values of radiation parameter, Prandtl number, heat generation parameter, magnetic parameter, joule heating parameter and viscous dissipation parameter and the numerical results have been shown graphically. **(Author's abstract)**

**Keywords:** *Mathematics, Natural convection, Radiation heat transfer, Prandtl number, Nusselt number, Viscous dissipation parameter , Pressure work*

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International Journal of Science and Technology, Volume No. 1 Issue No. 3, 141-150  
2012 March,  
(Filipiniana Analytics)  
NP

## Critical analysis of the foundations of differential and integral calculus

*Kalanov, Te*

Critical analysis of the generally accepted (standard) foundations of differential and integral calculus is proposed. Methodological basis of the analysis is the unity of formal logic and of rational dialectics. It is shown that the generally accepted foundations are based on the logically and practically erroneous concepts “infinitesimal quantity (uninterruptedly diminishing quantity)”, “derivative”, “derivative as function of variable quantity” and, consequently, represent incorrect basis of mathematics. **(Author's abstract)**

**Keywords:** *Mathematics, Differential calculus, Integral calculus, Foundations of mathematics, Philosophy of mathematics*

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International Journal of Science and Technology, Volume No. 1 Issue No. 2, 80-84  
2012 February,  
(Filipiniana Analytics)  
NP

0246

## Laplace technique on magnetohydrodynamic radiating and chemically reacting fluid over an infinite vertical surface

*Kalita, Dimbeswar , Ahmed,*

An analysis is carried out to study the nonlinear MHD flow with heat and mass transfer characteristics of an incompressible, viscous, electrically conducting and Boussinesq fluid over a vertical oscillating porous permeable plate in presence of homogeneous chemical reaction of first order and thermal radiation effects. The fluid considered here is a gray, absorbing/emitting radiation, but a non-scattering medium. At time  $t > 0$ , the plate temperature and concentration levels near the plate raised linearly with time  $t$ . An approximate numerical solution for the flow problem has been obtained by solving the governing boundary layer equations using *Laplace transform technique*. It has been found that, when the chemical reaction parameter ( $K_r$ ) increased, the fluid velocities as well as concentration profiles were decreased. An increase in conduction-radiation parameter ( $R_a$ ) is found to escalate temperatures and shear stress in the regime. Applications of the study arise in materials processing and solar energy collector systems. **(Authors abstract)**

**Keywords:** *Mathematics, Thermal radiation, Chemical reaction, MHD, Shear stress, Variable Mass Diffusion*

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2012 May,  
(Filipiniana Analytics)  
NP

## MEDICINE

0247

## A 15-year occult foreign body in the subglottic area of a 50-year-old woman

*Dayanghirang, Christine D. , Segocio, Donnie Jan L. , Cachuela, Jos*

**Objective:** To present a case of subglottic foreign body (FB) impaction in a 50-year-old woman diagnosed with bronchial asthma for 15 years.

**Methods:**

**Design:** Case Report

**Setting:** Tertiary Public Hospital

**Patient:** One

**Results:** A 50-year-old woman with recurrent cough and dyspnea for 15 years that had been managed as bronchial asthma developed stridor and halitosis in the last 5 years. Flexible laryngoscopy revealed a subglottic mass and CT scan confirmed a suspicious foreign body in the lumen of the subglottis. Signs and symptoms resolved after peroral endoscopic removal of the foreign body from the larynx. Histopathology of the extracted material from the airway confirmed it to be “bone tissue.”

**Conclusion:** Foreign body aspiration can occur in adults without predisposing factors. Its diagnosis can be challenging as it can mimic respiratory disorders such as bronchial asthma. Endoscopy and computed tomography are valuable for correct diagnosis and management. An incorrect initial diagnosis should be considered in the light of unresolved symptoms and prompt referral to an appropriate specialist may prevent undue suffering and dangerous complications. **(Authors' abstract)**

**Keywords:** *Medicine, Foreign body aspiration, Occult airway foreign body, Bronchial asthma*

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2016,  
(Filipiniana Analytics)  
NP

0248

## **Abnormal auditory experience induces frequency-specific adjustments in unit tuning for binaural localization cues in the optic tectum of juvenile owls**

*Knudsen, Eric I., Gold, Jos*

Early auditory experience shapes the auditory spatial tuning of neurons in the barn owl's optic tectum in a frequency-dependent manner. We examined the basis for this adaptive plasticity in terms of changes in tuning for frequency-specific interaural time differences (ITDs) and level differences (ILDs), the dominant sound localization cues. We characterized broadband and narrowband ITD and ILD tuning in normal owls and in owls raised with an acoustic filtering device in one ear that caused frequency-dependent changes in sound timing and level. In normal owls, units were tuned to frequency-specific ITD and ILD values that matched those produced by sound sources located in their visual receptive fields. In contrast, in device-reared owls, ITD tuning at most sites was shifted from normal by  $\sim 55$   $\mu$ sec toward open-ear leading for 4 kHz stimuli and 15  $\mu$ sec toward the opposite-ear leading for 8 kHz stimuli, reflecting the acoustic effects of the device. ILD tuning was shifted in the adaptive direction by  $\sim 3$  dB for 4 kHz stimuli and 8 dB for 8 kHz stimuli, but these shifts were substantially smaller than expected based on the acoustic effects of the device. Most sites also exhibited conspicuously abnormal frequency-response functions, including a strong dependence on stimulus ITD and a reduction of normally robust responses to 6 kHz stimuli. The results demonstrate that the response properties of high-order auditory neurons in the optic tectum are adjusted during development to reflect the influence of frequency-specific features of the binaural localization cues experienced by the individual. **(Author's abstract)**

**Keywords:** *Medicine, Sound localization, Hearing impairment, Development, Auditory plasticity, Superior colliculus, Tyto alba*

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2000 January,  
(Filipiniana Analytics)  
NP

0249

### **Accuracy of fine needle aspiration biopsy in diagnosing parotid gland malignancy**

*Santiago, Kathleen Joy B. , Roldan, Rodante A. , Castañeda, Saman*

**Objective:** To determine the sensitivity, specificity, positive predictive value, negative predictive value and overall accuracy of FNAB in detecting parotid malignancies in our institution.

**Methods:**

**Design:** Retrospective Chart Review

**Setting:** Tertiary Government Hospital

**Participants:** Postoperative records of seventy six (76) patients with tumors of the parotid gland preoperatively diagnosed by FNAB. Results: The sensitivity of FNAB was 46%. The specificity and positive predictive value were both 100% and negative predictive value was 90%. Overall accuracy in diagnosing malignant parotid tumor was 91%.

**Conclusion:** FNAB in this institution is a poor predictor of malignancy, having a sensitivity rate of only 46%. While this may serve as a basis for not recommending pre-operative FNAB for patients with parotid tumors in the interim, other factors should also be considered, including concerns with the actual performance and interpretation of FNAB in our institution. **(Author's abstract)**

**Keywords:** *Medicine, Parotid neoplasm, Cancer of the parotid, Fine needle aspiration biopsy, Sensitivity, Specificity, Accuracy*

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2016,  
(Filipiniana Analytics)  
NP

0250

### **Accuracy of reflexive behavioral (“Baah”) test in the screening for hearing impairment in infants six Months old and below**

*Garcia, Marieflor Cristy M. , Carrillo, Ryner Jose C. , Abes, Generoso T. , Chiong, Charlo*

**Objective:** To determine the prevalence of hearing loss among infants six months old and below sent for newborn hearing screening in our institution, and to measure the accuracy, sensitivity, specificity and positive predictive



values of reflexive behavioral (“Baah”) test in detecting hearing loss in infants.

**Methods:**

**Design:** Cross-sectional study

**Setting:** Ear Unit of a tertiary government hospital

**Participants:** Infants less than Six months old sent for newborn hearing screening at the Ear Unit of a tertiary government hospital from April to September, 2011 were recruited. All participants were tested with OAE for hearing screening. OAE was also used as the standard for evaluating hearing impairment. The reflexive behavioral (“Baah”) test was then done using the human voice as a loud sound stimulus, and the response recorded were auro-palpebral, startle and blinking response to the sound. The sensitivity, specificity, accuracy, positive and negative predictive value of the test was then measured.

**Results:** From April to September 2011, a total of 101 patients were tested, with a male to female ratio of 1.1:1 (53 males, 48 females). The prevalence of hearing impairment in this study population was 6.9% (7 out of 101). The reflexive behavioral (“Baah”) test was found to have sensitivity of 71.4%, specificity of 95.7%, accuracy rate of 94%, positive predictive value of 55.6% and negative predictive value of 97.8%.

**Conclusion:** The reflexive behavioral (“Baah”) test shows potential as an accurate, acceptable and cost-effective screening tool to identify infants that may be at higher risk for hearing impairment. This test may aid the health care providers, in areas without OAEs, in identifying infants who are in need further hearing diagnostic evaluation, with OAEs or other hearing tests. It is recommended that the “Baah” test be implemented in the community to test its reproducibility in a larger population and outside the hospital setting. **(Authors' abstract)**

**Keywords:** *Medicine, Reflexive behavioral (Baah) test, Otoacoustic emission, Hearing screening*

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2012,  
(Filipiniana Analytics)  
NP

0251

**Accuracy of Siemens HearCheck™ navigator as a screening tool for hearing loss**  
*Abes, Generoso T. , Tantoco, Maria Leah C. , Fellizar-Lopez, Kathleen R. , Reyes-Quintos, Maria R*

**Objectives:** To calculate the accuracy, sensitivity, specificity and positive predictive values of the Siemens HearCheck™ Navigator in detecting hearing loss and to compare values of these parameters when the examination is done in a soundproof booth and in a quiet room.

**Methods:**

**Design:** Analytical, cross-sectional study

**Setting:** Tertiary Public University Hospital

**Patients:** Patients seen at the Ear Unit of a tertiary public university hospital from June 2009 to August 2010 were tested using the Siemens HearCheck™ Navigator and pure tone audiometry, inside a soundproof audiometry booth and in a quiet room with an ambient noise of 50dB, with a different investigator for each examination. Each ear was treated as a separate subject. Results obtained from the HearCheck™ Navigator were designated as observed values and were classified as “no hearing loss” for green light, and “with hearing loss” for yellow or red lights. Results were compared with pure tone air conduction averages designated as gold standard values. Normal hearing acuity (0-25 dB) was classified as no hearing loss. Pure tone air conduction averages of 26dB and above

were classified as “with hearing loss” and were further stratified as mild hearing loss (26-40dB) and moderate or worse hearing loss (>41 dB). Observed and gold standard values were compared and tabulated in a 2x2 table for all levels of hearing loss, mild hearing loss, and moderate or worse hearing loss. Accuracy, sensitivity, specificity, positive and negative predictive values of the Siemens HearCheck™ Navigator inside a soundproof audiometry booth and in a quiet room were determined using pure tone audiometry as the gold standard.

**Results:** 100 patients (200 ears) were tested, with a median age of 43 years old (range 15-75), and an almost equal number of male and female participants (52 males, 48 females). Accuracy rate of the Siemens HearCheck™ Navigator inside the soundproof audiometry booth and in a quiet room were 82.5% and 84% respectively for all levels of hearing loss. Sensitivity, specificity, positive and negative predictive values were similar whether the examination was done inside the soundproof audiometry booth or in a quiet room. These values were notably higher in patients with moderate or worse hearing loss compared to patients with mild hearing loss.

**Conclusion:** The Siemens HearCheck™ Navigator shows potential as an accurate, portable, easy-to-use tool to screen for hearing loss, especially for cases of moderate or worse hearing loss, without the need for soundproof audiometry booths or special training. It is recommended that further studies be done to differentiate degrees of hearing loss, and to evaluate its usefulness in other target populations, including school children and the elderly.  
**(Authors' abstract)**

**Keywords:** *Medicine, Hearing screening, Hearing screening tool, Accuracy, Hearing loss, HearCheck™ navigator*

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 26 Issue No. 1, 10-15  
2011,  
(Filipiniana Analytics)  
NP

0252

### **Action potential backpropagation and somato-dendritic distribution of ion channels in thalamocortical neurons**

*Stuart, Greg J. , Williams, Step*

Thalamocortical (TC) neurons of the dorsal thalamus integrate sensory inputs in an attentionally relevant manner during wakefulness and exhibit complex network-driven and intrinsic oscillatory activity during sleep. Despite these complex intrinsic and network functions, little is known about the dendritic distribution of ion channels in TC neurons or the role such channel distributions may play in synaptic integration. Here we demonstrate with simultaneous somatic and dendritic recordings from TC neurons in brain slices that action potentials evoked by sensory or cortical excitatory postsynaptic potentials are initiated near the soma and backpropagate into the dendrites of TC neurons. Cell-attached recordings demonstrated that TC neuron dendrites contain a nonuniform distribution of sodium but a roughly uniform density of potassium channels across the somatodendritic area examined that corresponds to approximately half the average path length of TC neuron dendrites. Dendritic action potential backpropagation was found to be active, but compromised by dendritic branching, such that action potentials may fail to invade relatively distal dendrites. We have also observed that calcium channels are nonuniformly distributed in the dendrites of TC neurons. Low-threshold calcium channels were found to be concentrated at proximal dendritic locations, sites known to receive excitatory synaptic connections from primary afferents, suggesting that they play a key role in the amplification of sensory inputs to TC neurons. **(Author's abstract)**

**Keywords:** *Medicine, Sodium channel, Calcium channel, Potassium channels, Burst firing, Patch-clamp, Dendrite, Thalamus*

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JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 4, 1307-1317  
2000 February,

## Activity-dependent intracellular acidification correlates with the duration of seizure activity

*Stringer, Janet L. , Saggau, Peter , Xiong,*

Synchronized neuronal activity (seizures) can appear in the presence or absence of synaptic transmission. Mechanisms of seizure initiation in each of these conditions have been studied, but relatively few studies have addressed seizure termination. In particular, how are seizures terminated in the absence of synaptic activity where there is no loss of excitatory drive or augmentation of inhibitory inputs? We have studied dynamic activity-dependent changes of intracellular pH in the absence of synaptic transmission using the fluorescent pH indicator carboxylseminaphthorhodafluo-1. During epileptiform activity we observed intracellular acidification, whereas between seizures the intracellular pH recovered. Experimental conditions that shortened the epileptiform discharge correlated with more rapid intracellular acidification. On the other hand, experimental manipulation of intracellular pH altered the duration of the seizure discharge, with acidification resulting in early termination of the epileptiform activity. These data show a direct relationship between the level of intracellular acidification and the duration of the seizures, suggesting that an intracellular pH-dependent process can terminate nonsynaptic neuronal synchronization. **(Author's abstract)**

**Keywords:** *Medicine, Intracellular pH, Seizure termination, Dentate gyrus, SNARF-1, Hippocampus, Neuronal synchronization*

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JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 4, 1290-1296  
2000 February,  
(Filipiniana Analytics)  
NP

## Adult acute epiglottitis: an eight - year experience in a Philippine tertiary government hospital

*Cruz, Melanie Grace Y. , Almazan, Nativi*

**Objective:** To review cases of adult acute epiglottitis in a tertiary government hospital and describe the clinical presentations, diagnostics performed, management and outcomes.

**Methods:**

**Design:** Retrospective Chart Review

**Setting:** Tertiary Government Hospital

**Participants:** Records of patients admitted by or referred to the Department of Otolaryngology Head and Neck Surgery with a diagnosis of acute epiglottitis from January 2008 to August 2014 were identified from the department census and charts were retrieved from the Hospital Record Section and evaluated according to inclusion and exclusion criteria. Information regarding demographic data, clinical features, laboratory and other diagnostic

examinations, medical management, and length of hospital stay were collected.

**Results:** There were 20 cases in 7 years and 8 months. Most were male, 18 to 37-years-old, presenting with dysphagia, odynophagia and a swollen epiglottis on laryngoscopy. Abnormal soft-tissue lateral radiographs of the neck and leukocytosis were seen in 73 % and 83%, respectively. Intravenous antibiotics and corticosteroids were administered in all cases, and mean hospital stay was 11.2 days.

**Conclusion:** Adult acute epiglottitis should be highly suspected in patients presenting with dysphagia, odynophagia, and mufing of the voice even with a normal oropharyngeal examination. History of respiratory infection, comorbidities, smoking and alcohol intake, concomitant laryngeal pathology and supraglottic structure insults contribute to development of the disease. Laryngoscopy is still the gold standard in diagnosis. Airway protection is mandatory but prophylactic intubation or tracheostomy are not advised. Intravenous antibiotics are necessary and corticosteroids may be of benefit. **(Authors' abstract)**

**Keywords:** *Medicine, Epiglottitis, Supraglottitis, Epiglottis, Adult, Philippines*

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2016,  
(Filipiniana Analytics)  
NP

0255

## **Aging affects hemispheric asymmetry in the neural representation of speech sounds**

*Nicol, Trent, Bellis, Teri James, Kraus,*

Hemispheric asymmetries in the processing of elemental speech sounds appear to be critical for normal speech perception. This study investigated the effects of age on hemispheric asymmetry observed in the neurophysiological responses to speech stimuli in three groups of normal hearing, right-handed subjects: children (ages, 8–11 years), young adults (ages, 20–25 years), and older adults (ages > 55 years). Peak-to-peak response amplitudes of the auditory cortical P1–N1 complex obtained over right and left temporal lobes were examined to determine the degree of left/right asymmetry in the neurophysiological responses elicited by synthetic speech syllables in each of the three subject groups. In addition, mismatch negativity (MMN) responses, which are elicited by acoustic change, were obtained. Whereas children and young adults demonstrated larger P1–N1-evoked response amplitudes over the left temporal lobe than over the right, responses from elderly subjects were symmetrical. In contrast, MMN responses, which reflect an echoic memory process, were symmetrical in all subject groups. The differences observed in the neurophysiological responses were accompanied by a finding of significantly poorer ability to discriminate speech syllables involving rapid spectrotemporal changes in the older adult group. This study demonstrates a biological, age-related change in the neural representation of basic speech sounds and suggests one possible underlying mechanism for the speech perception difficulties exhibited by aging adults. Furthermore, results of this study support previous findings suggesting a dissociation between neural mechanisms underlying those processes that reflect the basic representation of sound structure and those that represent auditory echoic memory and stimulus change. **(Author's abstract)**

**Keywords:** *Medicine, Laterality, Cerebral dominance, Aging, Speech perception, Evoked potentials, Mismatch negativity*

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2000 January,  
(Filipiniana Analytics)  
NP

**$\alpha_{1E}$  subunits form the pore of three cerebellar R-type calcium channels with different pharmacological and permeation properties**

*Pietrobon, Daniela , Volsen, Stephen , Tottene, An*

R-type  $\text{Ca}^{2+}$  channels cooperate with P/Q- and N-type channels to control neurotransmitter release at central synapses. The leading candidate as pore-forming subunit of R-type channels is the  $\alpha_{1E}$  subunit. However, R-type  $\text{Ca}^{2+}$  currents with permeation and/or pharmacological properties different from those of recombinant  $\text{Ca}^{2+}$  channels containing  $\alpha_{1E}$  subunits have been described, and therefore the molecular nature of R-type  $\text{Ca}^{2+}$  channels remains not completely settled. Here, we show that the R-type  $\text{Ca}^{2+}$  current of rat cerebellar granule cells consists of two components inhibited with different affinity by the  $\alpha_{1E}$  selective antagonist SNX482 ( $\text{IC}_{50}$  values of 6 and 81 nM) and a third component resistant to SNX482. The SNX482-sensitive R-type current shows the unique permeation properties of recombinant  $\alpha_{1E}$  channels; it is larger with  $\text{Ca}^{2+}$  than with  $\text{Ba}^{2+}$  as charge carrier, and it is highly sensitive to  $\text{Ni}^{2+}$  block and has a voltage-dependence of activation consistent with that of G2 channels with unitary conductance of 15 pS. On the other hand, the SNX482-resistant R-type current shows permeation properties similar to those of recombinant  $\alpha_{1A}$  and  $\alpha_{1B}$  channels; it is larger with  $\text{Ba}^{2+}$  than with  $\text{Ca}^{2+}$  as charge carrier, and it has a low sensitivity to  $\text{Ni}^{2+}$  block and a voltage-dependence of activation consistent with that of G3 channels with unitary conductance of 20 pS. Gene-specific knock-down by antisense oligonucleotides demonstrates that the different cerebellar R-type channels are all encoded by the  $\alpha_{1E}$  gene, suggesting the existence of  $\alpha_{1E}$  isoforms with different pore properties. **(Author's abstract)**

**Keywords:** *Medicine, Calcium channel, #9451E subunit, Antisense oligonucleotides, Cerebellum, Granule cells, Permeation, Toxin-resistant calcium current*

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2000 January,  
(Filipiniana Analytics)  
NP

**$\alpha$ -melanocyte-stimulating hormone is contained in nerve terminals innervating thyrotropin-releasing hormone-synthesizing neurons in the hypothalamic paraventricular nucleus and prevents fasting-induced suppression of prothyrotropin-releasing hormone**

*Emerson, Charles H. , Rand, William M. , Tatro, Jeffrey B. , Huang, Qin-Heng , Mihályi, Emese , Lőrincz, Gábor , Fekete, Csaba, Lechan, Ronald*

The hypothalamic arcuate nucleus has an essential role in mediating the homeostatic responses of the thyroid axis to fasting by altering the sensitivity of prothyrotropin-releasing hormone (pro-TRH) gene expression in the paraventricular nucleus (PVN) to feedback regulation by thyroid hormone. Because agouti-related protein (AGRP), a leptin-regulated, arcuate nucleus-derived peptide with  $\alpha$ -MSH antagonist activity, is contained in axon terminals that terminate on TRH neurons in the PVN, we raised the possibility that  $\alpha$ -MSH may also participate in the mechanism by which leptin influences pro-TRH gene expression. By double-labeling immunocytochemistry,  $\alpha$ -MSH-IR axon varicosities were juxtaposed to ~70% of pro-TRH neurons in the anterior and paraventricular parvocellular subdivisions of the PVN and to 34% of pro-TRH neurons in the medial parvocellular subdivision, establishing synaptic contacts both on the cell soma and dendrites. All pro-TRH neurons receiving contacts by  $\alpha$ -

MSH-containing fibers also were innervated by axons containing AGRP. The intracerebroventricular infusion of 300 ng of  $\alpha$ -MSH every 6 hr for 3 d prevented fasting-induced suppression of pro-TRH in the PVN but had no effect on AGRP mRNA in the arcuate nucleus.  $\alpha$ -MSH also increased circulating levels of free thyroxine (T4) 2.5-fold over the levels in fasted controls, but free T4 did not reach the levels in fed controls. These data suggest that  $\alpha$ -MSH has an important role in the activation of pro-TRH gene expression in hypophysiotropic neurons via either a mono- and/or multisynaptic pathway to the PVN, but factors in addition to  $\alpha$ -MSH also contribute to the mechanism by which leptin administration restores thyroid hormone levels to normal in fasted animals. **(Author's abstract)**

**Keywords:** *Medicine, Thyrotropin-releasing hormone, Thyroid axis,  $\alpha$ -MSH, Arcuate nucleus, Fasting, Agouti-related protein, Leptin*

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JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 4, 1550-1558  
2000 February,  
(Filipiniana Analytics)  
NP

0258

### **Altered entrainment and feedback loop function effected by a mutant period protein**

*Lawrence, Todd , Hunter-Ensor, Melissa , Schotland, Peter, Sehgal, A*

The *period* (*per*) and *timeless* (*tim*) genes encode interacting components of the circadian clock. Levels and phosphorylation states of both proteins cycle with a circadian rhythm, and the proteins drive cyclic expression of their RNAs through a feedback mechanism that is, at least in part, negative. We report here that a hypophosphorylated mutant PER protein, produced by creating a small internal deletion, displays increased stability and low-amplitude oscillations, consistent with previous reports that phosphorylation is required for protein turnover. In addition, this protein appears to be defective in feedback repression because it is associated with relatively high levels of RNA and high levels of TIM. Transgenic flies carrying the mutant PER protein display a temperature-dependent shortening of circadian period and are impaired in their response to light, particularly to pulses of light in the late night that normally advance the phase of the rhythm. Interestingly, *per* RNA is induced by light in these flies, most likely because of the removal of the light-sensitive TIM protein, thus implicating a more direct role for TIM in transcriptional inhibition. These data have relevance for mechanisms of feedback repression, and they also address existing models for the differential behavioral response to light at different times of the night. **(Author's abstract)**

**Keywords:** *Medicine, Circadian rhythms, Drosophila, per, Tim, Entrainment to light, Feedback*

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2000 February,  
(Filipiniana Analytics)  
NP

0259

### **Alternative self-retaining retractors for head and neck surgery**

*Castañeda, Samantha S. , Bargo, Rose*

**Objective:** To design affordable, easy-to-use self-retaining retractors that can provide adequate exposure of the operative area in head and neck surgery

**Methods:**

Design: Surgical Instrumentation  
Setting: Tertiary government hospital  
Subjects: One

**Results:** Self-retaining retractors were designed and fabricated from stainless steel with tissue prongs on one end and a loop for rubber-band attachment to surgical drapes via a towel clip on the other end. Varying prong lengths were devised for different depths of required retraction. Traction tension could be adjusted by varying rubber-band attachment distance. The retractors were tested on a patient undergoing open reduction and internal fixation for a mandibular fracture and evaluated according to ease of application, adequacy of exposure and tissue trauma.

**Conclusion:** The self-retaining retractors may be affordable alternatives to commercially-available self-retaining retractors. They are easily applied with adjustable tension and depth of retraction that can provide adequate exposure with minimal tissue trauma. **(Author's abstract)**

**Keywords:** *Medicine, Self-retaining retractor, Instrumentation, Head and neck surgery*

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2009,  
(Filipiniana Analytics)  
NP

0260

## **AMPA exposures induce mitochondrial Ca<sup>2+</sup> overload and ROS generation in spinal motor neurons *in vitro***

*Yin, Hong Z. , Carriedo, Sean G., Sensi, Stefano L. , Weiss, John*

The reason for the selective vulnerability of motor neurons in amyotrophic lateral sclerosis (ALS) is primarily unknown. A possible factor is the expression by motor neurons of Ca<sup>2+</sup>-permeable AMPA/kainate channels, which may permit rapid Ca<sup>2+</sup> influx in response to synaptic receptor activation. However, other subpopulations of central neurons, most notably forebrain GABAergic interneurons, consistently express large numbers of these channels but do not degenerate in ALS. Indeed, when subjected to identical excitotoxic exposures, motor neurons were more susceptible than GABAergic neurons to AMPA/kainate receptor-mediated neurotoxicity. Microfluorimetric studies were performed to examine the basis for the difference in vulnerability. First, AMPA or kainate exposures appeared to trigger substantial mitochondrial Ca<sup>2+</sup> loading in motor neurons, as indicated by a sharp increase in intracellular Ca<sup>2+</sup> after addition of the mitochondrial uncoupler carbonyl cyanide-(trifluoromethoxy)phenyl hydrazone (FCCP) after the agonist exposure. The same exposures caused little mitochondrial Ca<sup>2+</sup> accumulation in GABAergic cortical neurons. Subsequent experiments examined other measures of mitochondrial function to compare sequelae of AMPA/kainate receptor activation between these populations. Brief exposure to either AMPA or kainate caused mitochondrial depolarization, assessed using tetramethylrhodamine ethylester, and reactive oxygen species (ROS) generation, assessed using hydroethidine, in motor neurons. However, these effects were only seen in the GABAergic neurons after exposure to the nondesensitizing AMPA receptor agonist kainate. Finally, addition of either antioxidants or toxins (FCCP or CN<sup>-</sup>) that block mitochondrial Ca<sup>2+</sup> uptake attenuated AMPA/kainate receptor-mediated motor neuron injury, suggesting that the mitochondrial Ca<sup>2+</sup> uptake and consequent ROS generation are central to the injury process. **(Author's abstract)**

**Keywords:** *Medicine, Glutamate, Kainate, Hydroethidine, Oxidative stress, Mitochondria, GABA, ALS*

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JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 1, 240-250  
2000 January,

## **AMPA receptor calcium permeability, GluR2 expression, and selective motoneuron vulnerability**

*Brorson, James R. , Robberecht, Wim , Vandenberg*

AMPA receptor-mediated excitotoxicity is proposed to play a major pathogenic role in the selective motoneuron death of amyotrophic lateral sclerosis. Motoneurons have been shown in various models to be more susceptible to AMPA receptor-mediated injury than other spinal neurons. It has been hypothesized that this selective vulnerability of motoneurons is caused by the expression of highly  $\text{Ca}^{2+}$ -permeable AMPA receptors and a complete or relative lack of the AMPA receptor subunit Glu receptor 2 (GluR2). The aim of this study was to quantify the relative  $\text{Ca}^{2+}$  permeability of AMPA receptors and the fractional expression of GluR2 in motoneurons by combining whole-cell patch-clamp electrophysiology and single-cell RT-PCR and to compare these properties with those of dorsal horn neurons. Spinal motoneurons and dorsal horn neurons were isolated from embryonic rats and cultured on spinal astrocytes. As in previous studies, motoneurons were significantly more vulnerable to AMPA and kainate than dorsal horn neurons. However, all motoneurons expressed GluR2 mRNA (~40% of total AMPA receptor subunit mRNA), and their AMPA receptors had intermediate whole-cell relative  $\text{Ca}^{2+}$  permeability ( $P_{\text{Ca}^{2+}}/P_{\text{Cs}^+} \sim 0.4$ ). AMPA receptor  $P_{\text{Ca}^{2+}}/P_{\text{Cs}^+}$  and the relative abundance of GluR2 varied more widely in dorsal horn neurons than in motoneurons, but the mean values did not differ significantly between the two cell populations. GluR2 was virtually completely edited at the Q/R site both in motoneurons and dorsal horn neurons. These results indicate that the selective vulnerability of motoneurons to AMPA receptor agonists is not determined solely by whole-cell relative  $\text{Ca}^{2+}$  permeability of AMPA receptors. **(Author's abstract)**

**Keywords:** *Medicine, Amyotrophic lateral sclerosis, Excitotoxicity, Kainate, Dorsal horn, Rat, Culture*

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JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 1, 123-132  
2000 January,  
(Filipiniana Analytics)  
NP

## **AMPA–kainate subtypes of glutamate receptor in rat cerebral microglia**

*Nabekura, Junichi , Nakanishi, Hiroshi , Noda, Mami, Akaike, N*

Microglial cells were isolated from rat cerebral cortex, and kainate (KA)-induced inward current was measured at a holding potential of  $-40$  or  $-60$  mV. 6-Cyano-7-nitroquinoxaline-2, 3-dione-sensitive KA-induced currents increased with increasing KA concentration. The half-activation concentration and Hill coefficient were  $3.3 \times 10^{-4}$  m and 1.4, respectively. Although glutamate (Glu) and AMPA-induced currents were much smaller than that induced by KA, all KA-, Glu-, and AMPA-induced currents were greatly and consistently enhanced in the presence of cyclothiazide (CTZ). On the other hand, KA-induced currents were much less sensitive to potentiation by concanavain A, suggesting that the KA-induced response in rat microglia is predominantly mediated by AMPA-preferring receptors (subunits GluR1–GluR4). The current–voltage relationships of KA- and AMPA–CTZ-induced currents were almost linear or slightly outward rectifying. The reversal potential of KA-induced current shifted to negative potentials (from  $+4$  to  $-40$  mV) on switching from high  $\text{Na}^+$  to high  $\text{Ca}^{2+}$  external solution, indicating the low  $\text{Ca}^{2+}$  permeability through the AMPA–KA receptor channel complexes. AMPA–KA receptor expression was



studied with immunohistochemistry and reverse transcription-PCR, from which GluR2, GluR3, GluR4, and GluR5 were identified. Lower levels of mRNAs for GluR7 and KA-1–KA-2 were also indicated. Finally, activation of these receptors with KA or Glu significantly enhanced the production of tumor necrosis factor- $\alpha$ . These results suggest that primary cultured rat microglia possesses functional Glu receptor, which may mediate neuron to microglia communication in the physiological and pathological states. **(Author's abstract)**

**Keywords:** *Medicine, Microglia, Whole-cell patch clamp, Kainate, Glutamate, AMPA, Cyclothiazide, Reverse transcription-PCR, Tumor necrosis factor- $\alpha$*

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JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 1, 251-258  
2000 January,  
(Filipiniana Analytics)  
NP

0263

### **The analgesic effects of supraspinal $\mu$ and $\delta$ opioid receptor agonists are potentiated during persistent inflammation**

*Hammond, Donna L. , Hurley, Rob*

This study examined the antihyperalgesic and antinociceptive effects of opioid receptor agonists microinjected in the rostral ventromedial medulla (RVM) of rats 4 hr, 4 d, and 2 weeks after the induction of an inflammatory injury by injection of complete Freund's adjuvant (CFA) in one hindpaw. Nociceptive sensitivity of the ipsilateral, inflamed and the contralateral, uninflamed hindpaws was determined by the radiant-heat paw withdrawal test. The antihyperalgesic potency of the  $\mu$  opioid receptor agonist [d-Ala<sup>2</sup>,N-Me-Phe<sup>4</sup>,Gly<sup>5</sup>-ol]enkephalin (DAMGO), determined for the inflamed hindpaw, was enhanced 4 d and 2 weeks after injury. The antinociceptive potency of DAMGO, determined for the contralateral, uninflamed hindpaw, was also progressively enhanced 4 hr, 4 d, and 2 weeks after injury. The magnitude of enhancement paralleled the chronicity of the injury. The greatest potentiation occurred 2 weeks after injury when the ED<sub>50</sub> value of DAMGO in CFA-treated rats was one-tenth that in saline-treated rats. The antihyperalgesic and antinociceptive effects of the  $\delta$  opioid receptor agonist [d-Ala<sup>2</sup>,Glu<sup>4</sup>]deltorphan were also increased 2 weeks after injury. These results indicate that peripheral inflammatory injury alters the pharmacology of excitatory and inhibitory inputs that modulate the activity of RVM neurons in such a manner as to enhance the effects of opioid agonists in this region. These changes have ramifications not only for the alleviation of hyperalgesia at the site of injury but also for opioid-induced antinociception at sites remote to the injury as revealed by increases in the potency of opioid agonists to suppress nociceptive responses of the contralateral, uninflamed hindpaw. **(Author's abstract)**

**Keywords:** *Medicine,  $\mu$  opioid receptor,  $\delta$  opioid receptor, Antinociception, Complete Freund's adjuvant, Hyperalgesia, Nucleus raphe magnus*

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JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 3, 1249-1259  
2000 February,  
(Filipiniana Analytics)  
NP

0264

## **An anatomical study of the cochlea among Filipinos using high-resolution computed tomography scans**

*Opulencia, Alejandro P. , de Jesus, Brian Joseph dG. , Maglalang, Gil M. , Fernando, Adrian F. , Chua, Anto*

**Objective:** To describe the cochlear anatomy among Filipinos through high resolution computed tomography (HRCT) imaging.

### **Methods:**

<b>Design:</b>	Retrospective	Study
<b>Setting:</b>	Tertiary Private University	Hospital
<b>Patients:</b>	Cochlear images retrospectively obtained from computed tomography (CT) scans of subjects who underwent cranial, facial, paranasal sinus and temporal bone computed tomography from October 2009 to July 2010 were reconstructed and analyzed.	

**Results:** 388 cochlear images were obtained from the scans of 194 subjects (101 males and 93 females, aged 1 to 90 years old, mean = 52 years) and reconstructed for analysis. The mean coiled cochlear height measured 4.36 mm on the right (A.D.) and 4.34 mm on the left (A.S.). Measurement from the oval window to the distal end of the basal turn (equivalent to the horizontal dimension of the cochlea or the mean length of the basal turn) was 7.55 mm A.D. and 7.60 mm A.S. The vertical and horizontal dimensions of right and left cochleas were identical in all subjects (S.D. = 0.35). The right and left cochlear turns were identical in each subject, exhibiting 2 ½ turns in 92.3% of subjects and 2 ¾ turns in 7.7% of subjects. The cochlear dimensions were similar in all subjects, regardless of age. No cochlear ossification or malformation was noted on any CT image.

**Conclusion:** The 7.55 mm mean length of the cochlear basal turn among Filipinos in this study was 1.24 mm shorter than the average length of the basal turn of 8.81 mm reported elsewhere. Further studies of the cochlear dimensions in specific age groups and its correlation to audiometric status are recommended to determine other significant physiologic correlations. **(Authors' abstract)**

**Keywords:** *Medicine, Cochlea, Cochlear turn, High-resolution computed tomography (HRCT), Magnetic Resonance imaging (MRI)*

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 26 Issue No. 1, 6-9  
2011,  
(Filipiniana Analytics)  
NP

0265

## **Antimicrobial, antipyretic, and anti-inflammatory activities of selected Philippine Medicinal Pteridophytes**

*Buenavista, Dave P. , Antesa, Dorothy A. , Coritico, Fulgent P. , Amoroso, Vic*

Pteridophytes are some of the herbal plants used to cure ailments. The present study scientifically finds out the folkloric therapeutic claims of 15 species of Philippine medicinal pteridophytes. Phytochemical components namely alkaloids, flavonoids, saponins, tannins, and anthraquinones of each plant samples were qualitatively determined. Antimicrobial activity of ethanolic extract was tested on *Staphylococcus aureus*, *Bacillus subtilis*, *Escherichia coli*, *Pseudomonas aeruginosa*, and *Candida albicans*. The antipyretic activity using yeast-induced pyrexia and the anti-inflammatory activity using egg-albumin-induced paw edema were done on white rats. The results revealed the presence of alkaloids, saponins, flavonoids, and tannins in most of the extracts. Anthraquinones were absent. Extract from three species of pteridophytes namely: *Equisetum ramosissimum*, *Pyrrosia piloselloides*, and *Selaginella usterii* did not manifest any antibacterial activity. *Blechnum orientale* has no antifungal activity. All extracts showed

significant effect in reducing yeast-induced pyrexia when compared with the negative control (NSS). Fourteen (14) out of the fifteen (15) plant extracts in 400 mg/kg Body Weight dosage inhibited anti-inflammatory activities in eggalbumin induced rat paw edema except for *Pyrossia piloselloides*. However, all plant extracts in 800 mg/kg Body Weight dosage showed significant rat paw reduction. A dose-dependent anti-inflammatory effect was observed within 6 hours of paw thickness observation. **(Author's abstract)**

**Keywords:** *Medicine, Phytochemicals, Ferns, Bioassay, Philippines*

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Asian Journal of Biodiversity, Volume No. 5 Issue No. 1, 18-40  
2014,  
(Filipiniana Analytics)  
NP

0266

### **Arachidonic acid stimulates a novel cocaine-sensitive cation conductance associated with the human dopamine transporter**

*Amara, Susan G. , Ingram, Su*

The dopamine transporter (DAT) exhibits several ionic currents that are either coupled to or uncoupled from the transport of substrate. Second messenger systems have been shown to modulate dopamine (DA) transport, however, the modulation of DAT-associated currents has not been studied in depth. Using the two-electrode voltage-clamp method to record from *Xenopus* oocytes expressing the human DAT, we examined the effects of arachidonic acid (AA) on membrane currents. AA (10–100  $\mu$ M) stimulates a novel nonselective cation conductance seen only in oocytes expressing human DA transporter (hDAT). The AA-stimulated conductance is up to 50-fold greater than the current normally elicited by DA, but does not appear to arise from the modulation of previously described hDAT conductances, including the leak current and the current associated with electrogenic transport. In addition, DA dramatically potentiates and cocaine blocks the AA-stimulated DAT current. DA potentiates the AA-induced currents in the absence of sodium and chloride, indicating that these currents arise from processes distinct from those associated with substrate transport. The effects of AA were mimicked by other fatty acids with a rank order of potency correlated with their degree of unsaturation, suggesting that AA directly stimulates the novel cation current. Therefore, AA stimulation of this DAT-associated conductance may provide a novel mechanism for modulation of neuronal signaling. **(Author's abstract)**

**Keywords:** *Medicine, Dopamine, Transporters, Cocaine, Nonselective cation channels, Arachidonic acid, Fatty acids*

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JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 2, 550-557  
2000 January,  
(Filipiniana Analytics)  
NP

0267

### **Arnica montana and blood loss, surgical field bleeding and operative time in endoscopic sinus surgery: a randomized-controlled trial**

*Bato, Charmagne Ross E. , Salinas, Michael L*

**Objective:** To determine the association of Arnica montana and blood loss, surgical field bleeding and operative time in endoscopic sinus surgery among adults with chronic rhinosinusitis with nasal polyposis.

**Methods:**

**Design:** Single-Blinded Randomized Controlled Trial

**Setting:** Tertiary Government Hospital

**Participants:** Forty-one (41) adults aged 19-76 years old with chronic rhinosinusitis with nasal polyposis and meeting inclusion criteria were randomly divided into two groups, Arnica and control. The former took 5 sublingual Boiron® Arnica montana 30C pellets, 12 hours then 1 hour prior to surgery; the latter did not. Both groups had routine oxymetazoline and lidocaine-epinephrine decongestion. Intraoperative blood loss, surgical field bleeding quality and operative time were assessed by blinded surgeons and anesthesiologists.

**Results:** Mean estimated blood loss was 187ml (SD 100.14) for controls versus 72ml (SD 12.59) for the Arnica group; ( $p < 0.05$ ). Mean operative time was 3.55 hours (SD 1.25) for controls and 3.44 hours (SD 1.57) for the Arnica group; ( $p=0.9$ ). Surgical field bleeding was graded slight with 75% needing occasional suctioning (grade 2) and 25% needing frequent suctioning (grade 3) in the Arnica group, versus moderate bleeding with more frequent suctioning (grade 4) in 71% and slight bleeding but needing frequent suctioning (grade 3) in 29% of controls.

**Conclusion:** In this randomized clinical trial, Arnica montana was associated with less blood loss and less surgical field bleeding compared to controls, but there was no difference in mean operative times. Arnica montana may be effective in reducing blood loss and improving surgical field quality during endoscopic sinus surgery for chronic rhinosinusitis with nasal polyposis. **(Authors' abstract)**

**Keywords:** *Medicine, Arnica montana, Hemostasis, Surgical, Endoscopic sinus surgery*

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 31 Issue No. 1, 14  
2016,  
(Filipiniana Analytics)  
NP

0268

## **Arterio-venous malformation in the external ear in pregnancy** *Pangan, Norm*

Arterio-Venous Malformations (AVMs) are congenital vascular defects<sup>1</sup> and are most commonly located in the head and neck area (81%).<sup>2</sup> The majority of these were localized over the cheek (31%), ear(16%), nose (10%), forehead(10%), upper lip (7%), mandible (5%), neck (5%), and scalp and maxilla (4%).<sup>2</sup> There is equal predominance in males and females and no racial predilection.<sup>2</sup> In general, there is “sparse literature about AVM in the external ear,”<sup>3</sup> let alone its occurrence in a pregnant patient.

Arterio-venous malformations are composed of a central nidus with anomalous arteriovenous shunts and a network of surrounding collateral vessels.<sup>4</sup> The short circuit or shunting between the high pressure arterial and low pressure venous system accounts for much of the clinical presentation, anatomical changes and progression of the lesions. They are usually present at birth but commonly manifest in childhood or adolescence with gradual onset and progression and rarely can be associated with an enlarged heart and high output cardiac failure.<sup>3,5</sup> The size of AVMs may increase rapidly secondary to infection, trauma, ligation or attempted excision and hormonal influences like pregnancy and puberty.<sup>3</sup> We present the case of an AVM occurring in the external ear of a pregnant patient. **(Author's abstract)**

**Keywords:** *Medicine, Arterio-venous malformation, Central nidus, Anomalous arteriovenous shunts*

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 26 Issue No. 2, 34-36  
2011,  
(Filipiniana Analytics)  
NP

0269

## **The assessment of oropharyngeal dysphagia in adults**

*Hawson, Freder*

One of the more important and critical referrals that otolaryngologists can receive from colleagues in internal medicine, family medicine and geriatrics is the assessment of swallowing problems or dysphagia of their patients.

The term *dysphagia* is derived from two Greek words which literally mean difficulty in swallowing. Swallowing is a complex series of precisely coordinated voluntary and involuntary muscular movements in the mouth, pharynx and esophagus that serves to deliver food from the oral cavity into the stomach. Normal swallowing consists of three phases: oral preparatory, pharyngeal and esophageal. One normal swallow of a bolus of food should only take less than one second to reach the esophagus.

*Dysphagia* may manifest as difficulty managing secretions, drooling, delayed swallowing, coughing or choking with the swallow, a wet gurgly voice and multiple swallow attempts. The complaint of *dysphagia* in an elderly patient should not be attributed to normal aging alone but should be considered an alarm symptom that requires immediate definition of the exact cause and initiation of appropriate therapy. **(Author's abstract)**

**Keywords:** *Medicine, Dysphagia, Oropharyngeal dysphagia, Staphylococcus aureus, Klebsiella sp., E. coli*

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 24 Issue No. 2, 43-45  
2009,  
(Filipiniana Analytics)  
NP

0270

## **Assessment of the ototoxic effects of amikacin and meropenem among neonates in a tertiary government hospital**

*AgulloAgullo, Edgar Jake A. , Victoria, Franci*

**Objective:** Using pre- and post-treatment otoacoustic emission (OAE) tests, this study aimed to assess the ototoxic effect of meropenem, amikacin and meropenem plus amikacin among neonates treated for sepsis neonatorum in a neonatal intensive care unit versus untreated outpatient controls.

### **Methods:**

**Design:**           Prospective           Quasi-Experimental           Controlled           Clinical           Trial

**Setting:** Tertiary Government Hospital

**Subjects:** Neonates treated for sepsis neonatorum in the Neonatal Intensive Care Unit between August to October 2012 who met inclusion criteria were included in this study. Controls were neonates born in the same institution who were not admitted and did not receive any antibiotic treatment. Excluded were those with APGAR < 5 at first minute, birth weight < 1000 grams, clinically evident congenital anomalies and initial “refer” results on OAE.

Neonates were subjected to OAE testing before and after seven days treatment with amikacin, meropenem or a combination of both drugs. Results were analysed using chi-square test. Maternal drug intake, family history of hearing impairment and clinical outcomes (whether expired or discharged improved) were not included in this study. Assessment of ototoxic effects were limited to OAE alone and not confirmed by ABR.

**Results:** OAE “refer” rates were as follows: no amikacin and no meropenem, 0% (0/42); amikacin only, 33.3% (3/9); meropenem only, 25% (2/8) and amikacin and meropenem, 50% (10/20). Statistical analysis showed that hearing loss was dependent on treatment ( $\chi^2 = 23.741$ ,  $p = < 0.001$ ). Overall, statistical analysis showed that there is an increased risk of hearing loss when treated with amikacin and/or meropenem as compared to no treatment.

**Conclusion:** There is an increased risk of ototoxicity when amikacin, meropenem or a combination of both drugs is administered to neonates. While the ototoxic effects of amikacin have been elucidated, further studies involving meropenem and its potential ototoxic effect are recommended. **(Authors' abstract)**

**Keywords:** *Medicine, Ototoxicity, Amikacin, Meropenem, Otoacoustic emission, Testing, Neonatal hearing loss*

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 29 Issue No. 2, 10-14  
2014,  
(Filipiniana Analytics)  
NP

0271

## **Association of excessive daytime sleepiness and obesity with apnea-hypopnea index in adult patients suspected of obstructive sleep apnea syndrome**

*Sarte, Michael A. , King-Chao, Nikki Lorra*

**Objective:** To determine whether excessive daytime sleepiness (EDS) as assessed by the Epworth Sleepiness Scale (ESS) is significantly correlated with body mass index (BMI) and Apnea-Hypopnea Index (AHI) in patients suspected of OSAS and whether obesity as assessed by BMI is associated with AHI.

### **Methods:**

**Design:** Non-concurrent cohort study

**Setting:** Tertiary Private Hospital

**Population:** The charts of 389 patients suspected to have sleep disorders and referred for polysomnography (PSG) at the Center for Snoring and Sleep Disorders in year 2009 were reviewed. Inclusion criteria were patients aged 19 and above with complete data. A total of 238 patient charts were included in the study.

**Results:** The study included a total of 238 patient charts. Results showed no significant association between ESS and AHI ( $p$ -value  $> 0.05$ ) even when correlated with the different severities of OSAS ( $p$ -value  $> 0.05$ ). Sensitivity and specificity of ESS was found to be 54% and 57%, respectively, indicating that ESS is not a sensitive and specific

tool to predict the presence of OSAS. These findings suggest that ESS may not be able to significantly identify patients with OSAS. However, BMI showed a significant association with ESS (p-value<0.05) representing more patients with EDS belonging to the obese category. Conversely, obese patients were twice more likely to have EDS, represented by ESS scores of  $\geq 10$ . BMI was also significantly associated with AHI using oneway Anova test.

**Conclusion:** This report concludes that the ESS alone is insufficient to identify patients with OSAS. Nevertheless, questionnaires like the ESS supplement relevant history to help diagnose patients with sleep disorders particularly OSAS. On the other hand, the ESS showed a significant association with BMI representing more obese patients had excessive daytime sleepiness. The likelihood ratio of having excessive daytime sleepiness is two times more for obese patients. BMI was also significantly associated with AHI which confirms the well established relationship of obesity with OSAS, and shows that obese patients are at higher risk for severe OSAS. **(Authors' abstract)**

**Keywords:** *Medicine, Obstructive sleep apnea syndrome, Daytime sleepiness, Epworth sleepiness scale, Polysomnography, Apnea-hypopnea index, Body mass index*

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 30 Issue No. 1, 17-23  
2015,  
(Filipiniana Analytics)  
NP

0272

## **Association of the laterality of chronic suppurative otitis media and sinonasal disease based on temporal bone CT scans and Lund Mackay Scoring System**

*Adan, Jr. Walfrido C. , Cruz, Emmanuel Tad*

**Objective:** To determine the association between the laterality of chronic suppurative otitis media (CSOM) and the laterality of sinonasal disease, based on temporal bone CT scan results and Lund-Mackay Scoring system, among patients admitted for ear surgery in a tertiary government hospital in Metro Manila.

### **Methods:**

**Design:** Retrospective review of records

**Setting:** Tertiary Government Hospital

**Participants:** Ninety-eight (98) patients diagnosed with chronic suppurative otitis media admitted for otologic surgery in the Department of Otorhinolaryngology – Head and Neck Surgery from January 2011 to June 2014 were considered for inclusion. Hospital charts and temporal bone CT scan results were retrieved and analyzed for ear and sinonasal radiographic abnormalities and laterality. Excluded were those without CT scan plates, who underwent temporal bone surgery for reasons other than chronic suppurative otitis media, and those with incomplete records. The Lund-Mackay Scoring System was used to grade sinonasal findings which were compared to CSOM complications. Data was analyzed using t-test, ANOVA for homogenous numerical data, Kruskal-Wallis for heterogenous numerical data, and chi-square test for nominal type of data.

**Results:** Of the 64 patients included in the study, 12 or 18.75% had radiographic sinonasal abnormalities. There was no significant association between the laterality of ear disease and the laterality of sinonasal pathology as there was no significant difference in the proportion of subjects with sinonasal disease according to laterality of CSOM (p=.32). When site of nose pathology was compared to Lund-Mackay graded scores, it was found that bilateral nose pathology generally had a higher Lund-Mackay score of  $8.60 \pm 5.60$ . However, there was no significant difference in the Lund-Mackay score according to the nose pathology site (p=.20). An association was seen between total LMS and patients with ear pathologies, but no significant difference was noted (p=.44). Although patients with ear

complications had higher LM scores, this was not statistically significant.

**Conclusion:** Laterality of ear disease was not associated with the laterality of sinonasal disease, although CSOM complications were associated with high Lund-Mackay scores. Future, betterdesigned studies may shed more light on these associations. **(Authors' abstract)**

**Keywords:** *Medicine, Chronic suppurative otitis media, Sinonasal disease, Lund Mackay, Temporal bone CT scan*

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 31 Issue No. 2, 16-19  
2016,  
(Filipiniana Analytics)  
NP

0273

### **Audiological manifestations in Kabuki (*Niikawa-Kuroki*) syndrome**

*Gloria-Cruz, Teresa Luisa , Tobias, Celina Ann M. , Chiong, Charlo*

**Objective:** To describe the audiological profile, clinical features and briefly summarize the speech and language development of a child with Kabuki syndrome (KS). KS is a rare malformation syndrome that usually presents with mental retardation and multiple congenital anomalies including ear diseases and hearing loss.

**Methods:**

<b>Design:</b>		Case		report
<b>Setting:</b>	Tertiary	Public	University	Hospital
<b>Subject:</b>		One		patient

**Results:** A five-year-old female diagnosed with KS at age three presented with moderate to severe conductive hearing loss in the right ear with a drop at the high frequencies and moderate to severe conductive sloping hearing loss in the left ear. She also had fluctuating tympanometric findings. She was fit with binaural hearing aids.

**Conclusion:** Ear diseases and hearing loss should immediately be considered in patients diagnosed with KS. A comprehensive audiological and otolaryngological evaluation should also be performed when presented with a KS case. **(Authors' abstract)**

**Keywords:** *Medicine, Kabuki syndrome, Niikawa-kuroki syndrome, Hearing loss, Multiple anomalies*

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 26 Issue No. 1, 21-26  
2011,  
(Filipiniana Analytics)  
NP

0274

### **Auditory steady state response (ASSR) frequency-specific thresholds with absent auditory brainstem response (click-ABR) test results among Filipino children**

*San Agustin, Maria Luz M. , Villarta, Jr., Ro*



**Objective:** Determine the frequency-specific thresholds of auditory steady state response (ASSR) of Filipino children with absent auditory brainstem response (click-ABR) results.

**Methods:** This is a cross-sectional study analyzing the frequency-specific thresholds of auditory steady state response (ASSR) of Filipino children with absent auditory brainstem response (click-ABR) results. The study population comprised of 99 pediatric patients referred for hearing assessment using electrophysiologic techniques at the Ear Unit of the Philippine General Hospital. The subjects underwent hearing threshold evaluation using both evoked-potential techniques (click ABR and ASSR) within a one-month period from January 2009 to March 2014. The ASSR results of patients with absent click-ABR were collected and analyzed.

**Results:** There were 99 patients who underwent both ABR and ASSR. Of the 65 patients with absent ABR thresholds results, 13 patients had unilateral absent ABR while 52 had bilateral absent ABR results. The data of hearing tests from the combined 117 ears with absent ABR hearing tests were collected.

The proportion of children with ASSR thresholds with absent ABR per frequency were:

- 500 Hz - 45/117 (38.5 %);
- 1000 Hz - 76/117 (64.0 %);
- 2000 Hz - 63/117 (53.8 %); and
- 4000 Hz - 41/117 (35.0 %).

The proportion of children with ASSR thresholds with absent ABR per number of frequencies were:

- 4 frequencies - 19/117 (16.2 %);
- 3 frequencies - 32/117 (27.4 %);
- 2 frequencies - 22/117 (18.8 %); and
- 1 frequency - 44/117 (37.6%)

**Conclusion:** In the absence of click- ABR response, ASSR may provide information about the levels of severe to profound hearing loss among children. The criteria of selection of candidates for intervention (hearing aids or cochlear implantation) should include results from hearing evaluation not only from behavioral and ABR thresholds but also from ASSR thresholds. This may ensure that exclusion of some children with severe and profound hearing loss who may benefit from the intervention will be minimized. **(Authors' abstract)**

**Keywords:** *Medicine, Profound sensorineural deafness, Evoked response audiometry, Hearing thresholds*

Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 29 Issue No. 2, 7-9  
2014,  
(Filipiniana Analytics)  
NP

**0275**

**Augmentation rhinoplasty with rib cartilage graft**  
*Lagura, Elaine Marie A. , Yap, Eduardo C., Garcia, Anna Victori*

**Objective:** To investigate the outcome and complications of augmentation rhinoplasty with rib cartilage grafts.

**Methods:**

**Design:** Retrospective study

**Setting:** Tertiary Government Hospital

**Subjects:** Patients who underwent dorsal nasal augmentation with autologous rib cartilage grafts between June 2008 and October 2012.

**Results:** A total of 12 patients (3 male, 9 female) were included in the study. Mean age was 29 years. Seven were cases of primary simple rhinoplasty with four cases of revision (previously using alloplastic materials) and one case of trauma. Indications for the procedure were all cosmetic. There was no incidence of infection, both in the donor and recipient sites, warping of the graft, graft extrusion, resorption, pneumothorax, chest wall deformity or prolonged edema. Post-operative pain in the donor site was relieved by oral pain medications. No revision surgery was required.

**Conclusion:** Costal cartilage is a good option for structural support of the nose. In our experience patients have become wary of the complication of allografts and have opted to use autografts. The surgeon's knowledge of the nasal anatomy as well as his or her experience with autologous grafts plays a major role in avoiding post-operative morbidity. **(Authors' abstract)**

**Keywords:** *Medicine, Rhinoplasty, Rib graft, Costal cartilage graft, Southeast Asian nose*

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 30 Issue No. 1, 29-33  
2015,  
(Filipiniana Analytics)  
NP

0276

### **Basosquamous carcinoma, nasal, auricular, periocular poorer prognosis**

*Bickle,*

This 37 year-old male patient underwent high resolution CT imaging of the face including paranasal sinuses following trauma.

Computed tomography (CT) has a well-established role in the assessment of the facial bones in the context of trauma, in particular for fractures involving the paranasal sinuses and orbit. High resolution imaging permits isotropic reconstruction in multiple planes. Its use in imaging the contents of orbit itself is more select, with both direct clinical examination and even orbital ultrasound used to assess the globe and lens of the eye.

Traumatic dislocation of the lens of the eye may entail the partial or complete translocation of the lens from its normal position within the anterior aspect of the eye. The high attenuation lens 'floats', within the vitreous of the globe. **(Author's abstract)**

**Keywords:** *Medicine, Basosquamous carcinoma, Nasal, Auricular, Periocular, Computed tomography (CT) scan*

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 26 Issue No. 1, 49-50  
2011,  
(Filipiniana Analytics)  
NP

0277

### **Basosquamous carcinoma of the neck**

*Cachuela, Joseph E. , Holgado, Jan War*

Basosquamous carcinoma, a variant of basal cell carcinoma, is rather rare with an incidence of only 1 – 2% of cases. 1, 2 It has a predilection for the head and neck region (95.6%) with primary sites including the nasal, auricular and periocular area with the neck involved in only 1.1%.<sup>1</sup> Unlike typical basal cell carcinoma, basosquamous carcinoma behaves more aggressively with a higher tendency for metastasis and recurrence. Its rarity translates to a lack of management guidelines. Because of its pattern of growth and relative aggressiveness, treatment plans must be well laid; recurrence resulting from poor planning may lead to a worse outcome and poorer prognosis. **(Author's abstract)**

**Keywords:** *Medicine, Basosquamous carcinoma, Neck, Head*

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 26 Issue No. 1, 46-48  
2011,  
(Filipiniana Analytics)  
NP

0278

### **BDNF promotes the regenerative sprouting, but not survival, of injured serotonergic axons in the adult rat brain**

*Tessarollo, Lino , Kaplan, David R. , Blue, Mary E. , Altar, Anthony , Mamounas, Laura A., Lyons, Er*

Brain-derived neurotrophic factor (BDNF) has trophic effects on serotonergic (5-HT) neurons in the adult brain and can prevent the severe loss of cortical 5-HT axons caused by the neurotoxin *p*-chloroamphetamine (PCA). However, it has not been determined whether BDNF promotes the survival of 5-HT axons during PCA-insult or facilitates their regenerative sprouting after injury. We show here that BDNF fails to protect most 5-HT axons from PCA-induced degeneration. Instead, chronic BDNF infusions markedly stimulate the sprouting of both intact and PCA-lesioned 5-HT axons, leading to a hyperinnervation at the neocortical infusion site. BDNF treatment promoted the regrowth of 5-HT axons when initiated up to a month after PCA administration. The sprouted axons persisted in cortex for at least 5 weeks after terminating exogenous BDNF delivery. BDNF also encouraged the regrowth of the 5-HT plexus in the hippocampus, but only in those lamina where 5-HT axons normally ramify. In addition, intracortical BDNF infusions induced a sustained local activation of the TrkB receptor. The dose–response profiles for BDNF to stimulate 5-HT sprouting and Trk signaling were remarkably similar, suggesting a physiological link between the two events; both responses were maximal at intermediate doses of BDNF but declined at higher doses (“inverted-U-shaped” dose–response curves). Underlying the downregulation of the Trk signal with excessive BDNF was a decline in full-length TrkB protein, but not truncated TrkB protein or TrkB mRNA levels. Thus, BDNF–TrkB signaling does not protect 5-HT neurons from axonal injury, but has a fundamental role in promoting the structural plasticity of these neurons in the adult brain. **(Author's abstract)**

**Keywords:** *Medicine, Neurotrophin, BDNF, TrkB, Serotonin, Structural plasticity, Sprouting, Cerebral cortex, Neurotoxicity, Amphetamines, p-chloroamphetamine*

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JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 2, 771-782  
2000 January,  
(Filipiniana Analytics)  
NP

0279

## Behavioral evidence of depolarization block of dopamine neurons after chronic treatment with haloperidol and clozapine

RomprÃ©, Pierre-Paul , Boye, San

Electrophysiological studies have shown that chronic treatment with haloperidol causes depolarization block (DB) of dopamine cells in anesthetized and paralyzed rats. It has been proposed that the emergence of DB underlies the therapeutic and side effects of this drug. However, the relevance of DB to the clinical actions of haloperidol has been questioned on the grounds that chronic drug-induced DB has not yet been demonstrated in freely moving animals. In this study, responding for rewarding electrical brain stimulation was used to assess the occurrence of DB in rats chronically treated with haloperidol or clozapine. The time course of the effects of acute haloperidol (7.8–500 µg/kg) and clozapine (5–40 mg/kg) and of withdrawal from chronic drug treatment on reward and performance measures were also characterized. Haloperidol and clozapine dose-dependently attenuated reward and performance, haloperidol producing a predominant suppression of performance, and clozapine preferentially attenuating reward. Chronic (21 d) treatment with haloperidol (500 µg/kg) caused responding to cease in the six rats tested, and repeated injection with apomorphine restored the behavior in all of them; such an effect of apomorphine was observed in only two of six rats treated acutely with the same dose of haloperidol. Chronic treatment with clozapine (20 mg/kg) increased reward thresholds, an effect that was reversed by apomorphine in chronically, but not acutely, treated rats. The times at which chronic haloperidol-treated rats resumed responding was positively correlated with indices of behavioral supersensitivity after withdrawal, suggesting that the effect of apomorphine was not caused by direct stimulation of upregulated postsynaptic receptors. These findings constitute the first behavioral evidence of DB in unanesthetized, freely moving animals treated chronically with antipsychotics. They also demonstrate that the neural substrates mediating reward and performance are functionally independent and differentially sensitive to haloperidol and clozapine. (Author's abstract)

**Keywords:** *Medicine, Apomorphine, Behavioral supersensitivity, Clozapine, Depolarization block, Dopamine, Haloperidol, Reward*

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JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 3, 1229-1239  
2000 February,  
(Filipiniana Analytics)  
NP

0280

## Bilateral antro-choanal polyps in an elderly female

Mandal, Satadal , Saha, Jayanta , Mukherjee, Ankur , Sen, Indranil, Sinha, Ram

**Objective:** To report the first case of primary bilateral antro-choanal polyps in the elderly age group.

**Methods:**

<b>Design:</b>	Case	report
<b>Setting:</b>	Tertiary	Government Hospital
<b>Patient:</b>		One

**Result:** A 60-year-old, non-allergic female with progressive bilateral nasal obstruction was subsequently diagnosed with bilateral antro-choanal polyps. Endoscopic sinus surgery was performed and the patient remained asymptomatic on one year follow-up.

**Conclusion:** Antro-choanal polyps can occur bilaterally in the elderly age group. To the best of our knowledge, this is the first reported case of primary bilateral antro-choanal polyps in an elderly female. (**Authors' abstract**)

**Keywords:** *Medicine, Antro-choanal polyp, Bilateral, Elderly, Female*

## **The black sombrero: a helpful landmark in axial imaging evaluation of the larynx and hypopharynx**

*Fernando, Adrian F. , Lapena, Jose Florencio F., Maglalang, Gi*

Computed Tomography (CT) scan and Magnetic Resonance Imaging (MRI) evaluation of the larynx and hypopharynx can be tricky for the untrained eye. We discuss a peculiar pattern of the supraglottic airway at the level of the base of the epiglottis seen on axial CT and MR images, resembling a “black hat” or a “black sombrero.” The level of the base of the epiglottis also corresponds to that of the hyoid bone, where two valuable hypopharyngeal sub-sites are visible: the pyriform sinuses and the posterior hypopharyngeal wall.

A hat has basically two parts, an apical convex crown and a basal horizontal brim. Correlating the hat’s appearance on axial CT and MR imaging, the hat appears black due to the presence of air at the supraglottic level wherein the crown is positioned anteriorly and the brim positioned posteriorly. **(Authors' abstract)**

**Keywords:** *Medicine, Computed tomography (CT) scan, Magnetic Resonance imaging (MRI), Larynx, Hypopharynx*

## **Breeding conditions induce rapid and sequential growth in adult avian song control circuits: a model of seasonal plasticity in the brain**

*Brenowitz, Eliot A. , Hartman, Vesta N. , Tramontin, Anth*

In adult songbirds, seasonal changes in photoperiod and circulating testosterone (T) stimulate structural changes within the neural song control circuitry. The mechanisms that control this natural plasticity are poorly understood. To determine how quickly and in what sequence the song nuclei respond to changing daylength and circulating T, we captured 18 adult male white-crowned sparrows and kept them on short days for 12 weeks. We killed five of these birds and exposed the rest to long days (LD) and elevated T. We killed these birds either 7 or 20 d after LD + T exposure. We measured song nuclei volumes and cellular attributes, the mass of the vocal production organ (the syrinx), and song behavior. The neostriatal song control nucleus HVC (also known as “high vocal center”), added 50,000 neurons and increased in size within 7 d of exposure to LD + T. Efferent targets of HVC, the robust nucleus of the archistriatum (RA), and area X of the parolfactory lobe grew more slowly and were not significantly larger until day 20 of the study. The tracheosyringeal portion of the hypoglossal nucleus (nXII<sub>ts</sub>), which receives projections from RA and normally grows in response to seasonal cues, did not grow over the time course of this study. Syrinx mass increased within 7 d of LD + T treatment. The anatomical changes in the brain were accompanied by behavioral changes in song production. On day 7 when the song circuitry was incompletely developed, male sparrows sang less stereotyped songs than males at day 20 with more completely developed song

circuits. These results suggest that the song circuitry responds rapidly and sequentially to breeding-typical conditions (long days and elevated T), and that song stereotypy increases as nuclei within this circuitry grow. **(Author's abstract)**

**Keywords:** *Medicine, Plasticity, Season, Songbird, Song system, Testosterone, White-crowned sparrow*

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NP

0283

### **Ca<sup>2+</sup> influx inhibits dynamin and arrests synaptic vesicle endocytosis at the active zone**

*Robinson, Phillip J. , Cousin, Mich*

Ca<sup>2+</sup> entry into nerve terminals through clusters of voltage-dependent Ca<sup>2+</sup> channels (VDCCs) at active zones creates a microdomain of elevated intracellular free Ca<sup>2+</sup> concentration ([Ca<sup>2+</sup>]<sub>i</sub>) that stimulates exocytosis. We show that this VDCC-mediated [Ca<sup>2+</sup>]<sub>i</sub> elevation has no specific role in stimulating endocytosis but can inhibit endocytosis evoked by three different methods in isolated mammalian nerve terminals. The inhibition can be relieved by using either VDCC antagonists or fast, but not slow, binding intracellular Ca<sup>2+</sup> chelators. The Ca<sup>2+</sup>-dependent inhibition of endocytosis is mimicked in vitro by a low-affinity inhibition of dynamin I vesiculation of phospholipids. Increased [Ca<sup>2+</sup>]<sub>i</sub> also inhibits dynamin II GTPase activity and receptor-mediated endocytosis in non-neuronal cells. VDCC-mediated Ca<sup>2+</sup> entry inhibits dynamin-mediated endocytosis at the active zone and provides neurons with a mechanism to clear recycling vesicles to nonactive zone regions during periods of high activity. **(Author's abstract)**

**Keywords:** *Medicine, Endocytosis, Exocytosis, FM2-10, Dynamin, Calcium, Nerve terminal*

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NP

0284

### **Ca<sup>2+</sup>-evoked serotonin secretion by parafollicular cells: roles in signal transduction of phosphatidylinositol 3-kinase, and the $\delta^3$ and $\delta^4$ Isoforms of protein kinase C**

*Gershon, Michael D. , Sacktor, Todd , Adlersberg, Mella , Hsiung, Shu-chi , Liu, Kuo-peing, Tamir, Hada*

Parafollicular (PF) cells secrete 5-HT in response to stimulation of a G-protein-coupled Ca<sup>2+</sup> receptor (CaR) by increased extracellular Ca<sup>2+</sup> ( $\uparrow$ [Ca<sup>2+</sup>]<sub>e</sub>). We tested the hypothesis that protein kinase C (PKC) participates in stimulus–secretion coupling. Immunoblots from membrane and cytosolic fractions of isolated PF cells revealed conventional ( $\alpha$ ,  $\beta$ I, and  $\gamma$ ), novel ( $\delta$  and  $\epsilon$ ), and atypical ( $\iota/\lambda$  and  $\zeta$ ) PKCs. Only PKC $\gamma$  was found to have been translocated to the membrane fraction when secretion of 5-HT was evoked by  $\uparrow$ [Ca<sup>2+</sup>]<sub>e</sub> or phorbol esters. Although phorbol downregulation caused PKC $\gamma$  to disappear, secretion was only partially inhibited. A similar reduction of  $\uparrow$ [Ca<sup>2+</sup>]<sub>e</sub>-evoked secretion was produced by inhibitors of conventional and/or novel PKCs (Gö6976, calphostin C, and pseudoA), and these compounds did not inhibit secretion at all when applied to phorbol-downregulated cells. In contrast, the phorbol downregulation-resistant component of secretion was abolished by pseudoZ, which inhibits the

atypical PKC $\zeta$ . Stimulation of PF cells with  $\uparrow[Ca^{2+}]_e$  increased the activity of immunoprecipitated PKC $\zeta$  (but not PKC $\nu/\lambda$ ), and the activity of this PKC $\zeta$  was inhibited by pseudoZ. PF cells were found to express regulatory (p85) and catalytic (p110 $\alpha$  and p110 $\beta$ ) subunits of phosphatidylinositol 3'-kinase (PI3'-kinase).  $\uparrow[Ca^{2+}]_e$  increased the activity of immunoprecipitated PI3'-kinase; moreover, PI3'-kinase inhibitors (wortmannin and LY294002) antagonized secretion. We suggest that PKC isoforms mediate secretion of 5-HT by PF cells in response to stimulation of the CaR. PKC involvement can be accounted for by PKC $\gamma$  and an isoform sensitive to inhibition by pseudoZ, probably PKC $\zeta$ , which is activated via PI3'-kinase. (**Author's abstract**)

**Keywords:** *Medicine, Ca<sup>2+</sup> receptor, Serotonin secretion, protein kinase Cy, Protein kinase Ci, Phosphatidylinositol 3'-kinase, Thyroid parafollicular cell*

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2000 February,  
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NP

0285

## Calcifications in thyroid ultrasonography and thyroid carcinoma

*Soriano, Ronaldo G. , Uy, Jacqueline Austine U. , Sio, Maria Christ*

**Background:** Thyroid nodules are a common disease entity occurring in 5-10% of the general population and increasing with age. Their detection on ultrasonography ranges from 13% to 67%. Calcifications on ultrasound may occur in both benign and malignant diseases but have been cited for increased risk of thyroid carcinoma.

**Objective:** To determine the association of calcifications found on thyroid ultrasonography and the different types of calcifications with thyroid carcinoma.

**Methods:**

**Design:** Retrospective Study

**Setting:** Tertiary Private Hospital

**Participants:** 126 patients with pre-operative thyroid or neck ultrasonography who subsequently underwent thyroidectomy (total or subtotal, with or without frozen section) were selected from a database covering a one-year period from January to December 2012. The presence and type of calcification on ultrasonography was correlated with the final histopathologic report for a diagnosis of thyroid carcinoma. Sensitivity, specificity, positive and negative predictive values were obtained.

**Results:** 51 out of 126 studies (40%) were observed to have calcifications of any description in both histologically benign (41%) and malignant (59%) nodules. Calcifications seen in malignancy arose from papillary carcinoma (86%). Follicular carcinoma and others (Plasmacytoma and Lymphoma) accounted for 7% each. The peripheral type of calcification was most prevalent accounting for 37% (11 out of 30). The sensitivity of detecting calcifications on ultrasonography is 58.82%, specificity 81.33%, positive predictive value 68.18% and negative predictive value 74.38%. Chi square test computed was 21.54 (P <0.05).

**Conclusion:** There was an association between calcification found on ultrasonography and thyroid carcinoma and 86% of the calcifications were peripheral patterns mostly found in papillary thyroid carcinomas. Ultrasonography alone is not sufficient in diagnosing thyroid carcinoma but may increase the suspicion of malignancy depending on the type of calcification. (**Authors' abstract**)

**Keywords:** *Medicine, Thyroid carcinoma, Papillary carcinoma, Calcifications, Ultrasonography*

### **Cannabinoids decrease the K<sup>+</sup> M-current in hippocampal CA1 neurons** *Schweitzer*

Cannabinoid effects on sustained conductances that control neuronal excitability have not been investigated in brain. Here, intracellular voltage-clamp recordings were performed using the rat hippocampal slice preparation to study the postsynaptic effect of cannabinoid agonists on CA1 pyramidal neurons. Superfusion of the cannabimimetics WIN55212-2 or methanandamide onto CA1 neurons elicited an inward steady-state current that reversed near the equilibrium potential for K<sup>+</sup> and voltage-dependently activated from a threshold of approximately -70 mV. The cannabinoid receptor (CB1) antagonist SR141716 did not alter membrane properties but prevented this effect. Further investigation revealed that the inward current elicited by cannabinoids was caused by a decrease of the noninactivating voltage-dependent K<sup>+</sup> M-current ( $I_M$ ). Cannabinoids had no effect in slices pretreated with the M-channel blocker linopirdine. Assessment of the  $I_M$  relaxation indicated that cannabinoids decreased  $I_M$  in a concentration-dependent manner, with a maximum inhibition of  $45 \pm 3\%$  with WIN55212-2 ( $EC_{50}$  of  $0.6 \mu\text{m}$ ) and  $41 \pm 5\%$  with methanandamide ( $EC_{50}$  of  $1 \mu\text{m}$ ). Cannabinoids did not affect the inwardly rectifying cationic h-current ( $I_h$ ). The cannabinoid-induced  $I_M$  decrease was prevented by SR141716 but remained unaffected by the muscarinic receptor antagonist atropine. Conversely, the cholinergic agonist carbamylcholine decreased  $I_M$  in the presence of SR141716, indicating that cannabinoid and muscarinic receptor activation independently diminish  $I_M$ . It is concluded that cannabinoids may postsynaptically augment the excitability of CA1 pyramidal neurons by specifically decreasing the persistent voltage-dependent  $I_M$ . **(Author's abstract)**

**Keywords:** *Medicine, Cannabinoid, Brain, Slice, Voltage-clamp, Potassium current, Excitation*

### **A case series of tessier 3, 4, 7 and combined 4, 7 craniofacial clefts** *Pascual, Arsenio L. , Rances, Karen Adiel D. , Cruz, Emmanuel Tadeus S., Tinaza, Joma*

**Objective:** To report a case series of Tessier 3, 4, 7 and combined 4,7 craniofacial clefts, their clinical presentations, surgical approaches and outcomes in light of the current literature.

**Methods:**

**Design:** Case series

**Setting:** Tertiary Government Hospital



**Subjects:**

Five

patients

**Results:** Five patients aged 3 to 14-years-old with Tessier 3, 4 (2 cases), 7 and combined 4,7 were included in this study: Tessier 3 – medial orbitomaxillary cleft extending through the bony skeleton traversing obliquely across the lacrimal groove, Tessier 4 – median orbitomaxillary cleft traversing vertically through the inferior eyelid, infraorbital rim and orbital floor extending to the lip between the philtral crest and the oral commissure (2 cases), Tessier 7 - macrostomia and cleft oral commissure and combined Tessier 4 and 7, combining features described above. Four underwent 2- or 3-stage surgeries while one declined.

**Conclusion:** Five craniofacial clefts were presented. Because of the varying patterns of craniofacial deformities, a series of surgical procedures, tailor-made for each individual were performed on four. Otolaryngologists who perform maxillofacial and cosmetic surgery should have good background knowledge about craniofacial defects and be familiar with the surgical approaches at their disposal to yield favorable results that are appropriate to their local contexts. **(Authors' abstract)**

**Keywords:** *Medicine, Tessier clefts 3, 4, and 7, Oculoplasty, Commisuroplasty, Alar transpositional flap, Canthopexy*

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2015,  
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NP

0288

### **Caspase-2 mediates neuronal cell death induced by $\beta$ -amyloid**

*Brown, Kristy, Frappier, Thierry F., Friedman, Wilma J., Rabacchi, Sylvia A., Troy, Carol M., Shelanski, Michae*

$\beta$ -amyloid ( $A\beta$ ) has been proposed to play a role in the pathogenesis of Alzheimer's disease (AD). Deposits of insoluble  $A\beta$  are found in the brains of patients with AD and are one of the pathological hallmarks of the disease. It has been proposed that  $A\beta$  induces death by oxidative stress, possibly through the generation of peroxynitrite from superoxide and nitric oxide. In our current study, treatment with nitric oxide generators protected against  $A\beta$ -induced death, whereas inhibition of nitric oxide synthase afforded no protection, suggesting that formation of peroxynitrite is not critical for  $A\beta$ -mediated death. Previous studies have shown that aggregated  $A\beta$  can induce caspase-dependent apoptosis in cultured neurons. In all of the neuronal populations studied here (hippocampal neurons, sympathetic neurons, and PC12 cells), cell death was blocked by the broad spectrum caspase inhibitor *N*-benzyloxycarbonyl-val-ala-asp-fluoromethyl ketone and more specifically by the downregulation of caspase-2 with antisense oligonucleotides. In contrast, downregulation of caspase-1 or caspase-3 did not block  $A\beta_{1-42}$ -induced death. Neurons from caspase-2 null mice were totally resistant to  $A\beta_{1-42}$  toxicity, confirming the importance of this caspase in  $A\beta$ -induced death. The results indicate that caspase-2 is necessary for  $A\beta_{1-42}$ -induced apoptosis *in vitro*. **(Author's abstract)**

**Keywords:** *Medicine, #946-amyloid, Neuronal cell death, Caspases, Caspase-2, Hippocampal neurons, PC12 cells, Sympathetic neurons*

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2000 February,  
(Filipiniana Analytics)  
NP

### Cavernous hemangioma of the mandible

*Victoria, Francisco A. , Papa, II, Enrique C. , Samson, Emman*

**Objectives:** To report a case of hemangioma arising from the mandible and its clinical presentation; describe the similarities with which mandibular hemangioma may mimic odontogenic and non-odontogenic lesions; and identify diagnostic and treatment modalities employed in these patients.

**Methods:**

Design:	Case	Report
Setting:	Tertiary	Public Hospital
Patient:		One

**Results:** A 12-year-old male with intractable gum bleeding exacerbated by intra operative manipulation of a loose first premolar and uncontrolled by left external carotid ligation, underwent segmental mandibulectomy. The resected segment revealed multiple porosities and a hollow blood-filled cavity. Histopathology confirmed the diagnosis of cavernous hemangioma.

**Conclusion:** Though rare, mandibular hemangiomas should be considered in lesions involving the mandible. Diagnosis is difficult with an array of lesions that may appear clinically and radiographically similar. The non-specific signs and symptoms of mandibular hemangioma could lead to exsanguinating hemorrhage if not attended to promptly. **(Author's abstract)**

**Keywords:** *Cavernous hemangioma, Medicine, Mandible, Hemorrhage, External carotid ligation, Mandibulectomy*

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2009,  
(Filipiniana Analytics)  
NP

### Do centrally administered neuropeptides access cognate receptors?: an analysis in the central corticotropin-releasing factor system

*Sawchenko, Paul E. , Bittencourt , Jack*

To determine the extent to which centrally administered corticotropin-releasing factor (CRF) activates neurons that express CRF receptors (CRF-Rs), we followed the kinetics and distribution (relative to those of CRF-Rs) of Fos induction seen in response to intracerebroventricular (icv) injection of the peptide (1–10 µg). CRF provoked widespread Fos expression: its strength was dose-related, it peaked at 2 hr after injection, and it was antagonized in a dose-dependent manner by coinjection of CRF-R antagonists. The activation pattern closely mimicked the distribution of CRF-R1 mRNA, in including widespread Fos induction throughout the cortical mantle, in cell groups involved in sensory information processing, and in the cerebellum and several of its major afferents and targets. Dual labeling revealed extensive correspondence of CRF-stimulated Fos-immunoreactivity (Fos-ir) and CRF-R1 mRNA at these and other loci. Unique sites of CRF-R2 expression were relatively unresponsive to CRF but were more so after icv administration of urocortin (UCN), a new mammalian CRF-related peptide. Both CRF and UCN elicited activational responses in cell groups that are involved in central autonomic control but that express neither CRF-R, including the central amygdaloid and paraventricular hypothalamic nuclei, and brainstem catecholaminergic cell groups. The results support an ability of CRF-related peptides in the ventricular system to access receptor-

expressing cells directly but leave open questions as to the basis for the recruitment of central autonomic structures, many of which have been identified as stress-related sites of CRF action. (Author's abstract)

**Keywords:** *Medicine, Corticotropin-releasing factor, Corticotropin-releasing factor receptors, fos, Intracerebroventricular injections, Neuropeptides, Stress, Urocortin*

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(Filipiniana Analytics)  
NP

0291

### **Cerebral abscess with rupture into the ventricles due to chronic otitis media**

*Mohamed, Diyana , Bickle,*

This 43-year-old man with a known history of schizophrenia presented with a one-week history of left ear pain accompanied by a purulent discharge from the external auditory canal over the last three days. Shortly afterwards he became confused. On direct examination, the left ear canal was oedematous containing granulation tissue. (Author's abstract)

**Keywords:** *Medicine, Chronic otitis media, Cerebral abscess, Granulation tissue, Ear canal*

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NP

0292

### **Cervical vagal schwannoma**

*Yunus, Mohd Razif Mohamad, Hailani, Iskandar , Yong, Doh Jei*

**Objectives:** To present a case of cervical vagal schwannoma and describe our experience with the clinical presentation, surgical management and outcome of an elderly patient with this pathology.

**Methods:**

<b>Design:</b>	Case	Report
<b>Setting:</b>	Tertiary	Public Hospital
<b>Patient:</b>		One

**Results:** A 65-year-old lady presented with a recently enlarging, pulsatile right sided neck mass that had been asymptomatic for 15 years. Contrast CT revealed a circumscribed non-enhancing heterogenous 4 x 4 x 7 cm mass splaying the right internal jugular vein and common carotid artery. A neurogenic tumour was considered, and the mass was excised from the vagus nerve with preservation of adjacent structures. Final histopathologic reading was schwannoma. However, the patient succumbed to complications following a second surgery for expanding hematoma.

**Conclusion:** Schwannomas are benign, slow growing tumours that arise from Schwann cells of the nerve sheath.

Cervical schwannomas originating from the vagus nerve are rare but should be considered in patients presenting with solitary neck masses. Surgical extirpation is still the treatment of choice for nerve sheath tumours and recurrence is uncommon. Efforts should be made to preserve unaffected structures and patients should be counseled preoperatively on the possible high risk of morbidity especially in the elderly group where close follow up and aggressive rehabilitation should be instituted following surgery. **(Authors' abstract)**

**Keywords:** *Medicine, Cervical schwannoma, Vagus nerve, Neurogenic tumour, Parapharyngeal space*

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2010,  
(Filipiniana Analytics)  
NP

0293

### ***c-fos* controls the “private pathway” of light-induced apoptosis of retinal photoreceptors**

*Niemeyer, GÁnter , Hafezi, Farhad , Kueng-Hitz, Nicole , Marti, Andreas , Grimm, Christian , Wenzel, Andreas, RemÁ©, Charlot*

White light (5 klux for 2 hr) induces apoptosis of rod photoreceptors in wild-type mice (*c-fos*<sup>+/+</sup>) within 24 hr, whereas rods of *c-fos* knock-out mice (*c-fos*<sup>-/-</sup>) are protected (Hafezi et al., 1997b).

The range of this protection was tested by analyzing retinas of *c-fos*<sup>+/+</sup> and *c-fos*<sup>-/-</sup> mice up to 10 d after exposure to threefold increased light intensities (15 klux for 2 hr). In *c-fos*<sup>-/-</sup> mice, rods were unaffected, whereas they were destroyed in *c-fos*<sup>+/+</sup> mice. After light exposure, mitochondrial damage in rods was observed exclusively in *c-fos*<sup>+/+</sup> mice. Electroretinograms recorded 48 hr after exposure revealed a decrease of all components in *c-fos*<sup>+/+</sup> mice but indicated no light-induced loss of function in *c-fos*<sup>-/-</sup> mice. Thus, in *c-fos*<sup>-/-</sup> mice, light-induced apoptosis is blocked or its threshold is elevated more than threefold.

Increased activity of the transcription factor activator protein-1 (AP-1) in retinas of light-exposed *c-fos*<sup>+/+</sup> mice indicated an acute contribution of AP-1 to apoptosis induction. AP-1 activity increased already during exposure and peaked ~6 hr thereafter, coinciding with the appearance of major morphological signs of apoptosis. Activated AP-1 mainly consisted of c-Fos/Jun heterodimers. In *c-fos*<sup>-/-</sup> mice, AP-1 activity remained unchanged, indicating that no other Jun- or Fos-family member could substitute for c-Fos. Like damaging light, N-methyl-N-nitrosourea (MNU) induced AP-1 containing c-Fos in *c-fos*<sup>+/+</sup> mice and did not induce AP-1 in *c-fos*<sup>-/-</sup> mice. In contrast to light, however, MNU induced apoptosis in rods of *c-fos*<sup>-/-</sup> mice. Thus, c-Fos is essential for a specific premitochondrial “private apoptotic pathway” induced by light but not for the execution of apoptosis induced by other stimuli. **(Authors' abstract)**

**Keywords:** *Medicine, Retinal degeneration, Photoreceptor, Light damage, Apoptosis, Mitochondria, c-fos, AP-1, N-methyl-N-nitrosourea, Mouse*

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2000 January,  
(Filipiniana Analytics)  
NP

0294

## **Chemical stimulation of the ventral hippocampus elevates nucleus accumbens dopamine by activating dopaminergic neurons of the ventral tegmental area**

*Wise, Roy A. , Rompré, Pierre-Paul , Legault*

Dual-probe microdialysis (with HPLC and electrochemical detection) in freely moving rats and single-unit recording in anesthetized rats were used to study the extent to which impulse flow through the ventral tegmental area (VTA) contributes to elevations in nucleus accumbens (NAS) dopamine (DA) evoked by stimulation of the ventral subiculum (VS). During perfusion of artificial extracellular fluid into the VTA, injections of 0.74 µg of the excitatory amino acid NMDA into the VS elevated accumbens DA to >150% of basal values. During intra-VTA perfusion of either 1 µm tetrodotoxin (which blocks impulse flow) or 1 mM kynurenic acid (which blocks excitatory glutamate receptors), injections of NMDA into the VS failed to elevate accumbens DA. Thus, increased impulse flow through VTA DA neurons, mediated by excitatory glutamate inputs to this region, appears critical for VS stimulation to elevate NAS DA. Increased impulse flow through VTA DA neurons was confirmed using single-unit recording in anesthetized rats. Intra-VS NMDA injections increased the firing rates of 45% (14 of 31), decreased the firing rates of 13% (4 of 31), and had no effect on 42% (13 of 31) of VTA DA neurons. Increases in firing rates were evident within 15 min of NMDA injections, a time at which VS NMDA injections elevate accumbens DA in awake animals. The results of the present experiments identify the VTA as a critical site through which outputs from the VS modulate NAS dopaminergic neurotransmission. **(Author's abstract)**

**Keywords:** *Medicine, Ventral subiculum, Microdialysis, Tetrodotoxin, Single unit, NMDA, Ventral tegmental area, Accumbens, Dopamine*

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2000 February,  
(Filipiniana Analytics)  
NP

**0295**

## **Child abuse: characteristics of the victims and the perpetrators**

*Obiedo, Antonieta , Cempron, Jezyl T. , Lapa, Ma. Mayla Imelda M. , Garcia, La*

Discipline in the Filipino culture is often carried out as a corporal punishment, which, if carried to the extreme would constitute an abusive situation. The study sought to make an accurate picture of child abuse. The study used the descriptive research using documentary analysis. Results of the study revealed that the greater incidence of child abuse occurred most commonly in female children between the ages 12 – 18 years old, in families with low socio-economic level and to parents whose highest educational attainment were high school level. These abuses lasted for 1 – 5 years before being reported to the proper authorities for intervention. Most perpetrators of the abuses were the male neighbors followed by the female neighbors and the cohabiting husband; adults whom the parent/s entrust the care of their children. The study revealed that the most common form of abuse was physical abuse in the form of hitting, followed by child-rape, spousal abuse in the presence of the child and verbal assault, respectively. The study concluded that child abuse damages the child not only physically but also psychologically. The parents' low socio-economic status contributed to the stress and trauma of the child. **(Author's abstract)**

**Keywords:** *Medicine, Child abuse, Perpetrators, Child and victims, Socio-economic status, Stress and trauma, Sexual exploitation, Child rape*

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2012,  
(Filipiniana Analytics)  
NP

## **Chronic administration of the triazolobenzodiazepine alprazolam produces opposite effects on corticotropin-releasing factor and urocortin neuronal systems**

*Owens, Michael J. , Knight, David L. , Nemeroff, Charles B. , Skelton, Ke*

In view of the substantial preclinical evidence that supports a seminal role of central corticotropin-releasing factor (CRF) neuronal systems in the physiology and pathophysiology of stress and anxiety, it is reasonable to suggest that the anxiolytic properties of benzodiazepines are mediated, at least in part, via regulation of CRFergic function. To begin to test this complex hypothesis, we examined the effects of acute and chronic administration of the triazolobenzodiazepine agonist alprazolam on CRF peptide concentrations, receptor-binding density, and mRNA expression in the CNS. Additionally, we measured mRNA expression for urocortin, a recently discovered neuropeptide that is generally considered to be a second endogenous ligand for CRF receptors. Both acute and chronic alprazolam administration was found to decrease CRF concentrations within the locus coeruleus. Furthermore, chronic alprazolam decreased basal activity of the hypothalamic–pituitary–adrenal axis, CRF mRNA expression in the central nucleus of the amygdala, and CRF<sub>1</sub> mRNA expression and receptor binding in the basolateral amygdala. In marked contrast, urocortin mRNA expression in the Edinger-Westphal nucleus and CRF<sub>2A</sub> receptor binding in the lateral septum and ventromedial hypothalamus were increased. Similar findings of an inverse relationship between the CRF<sub>1</sub> and CRF<sub>2A</sub> receptor systems have been reported in an anxiety model based on adverse early-life experience, suggesting the intriguing possibility that CRF neuronal systems may be comprised of two separate, but interrelated, subdivisions that can be coordinately and inversely regulated by stress, anxiety, or anxiolytic drugs. **(Author's abstract)**

**Keywords:** *Medicine, Amygdala, Anxiety, Benzodiazepines, Corticotropin-releasing factor, Locus coeruleus, Stress, Urocortin*

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2000 February,  
(Filipiniana Analytics)  
NP

## **Chronic stress induces impairment of spatial working memory because of prefrontal dopaminergic dysfunction**

*Chui, De-Hua , Sasaki, Hiroshi , Ishige, Atsushi , Yuzurihara, Mitsutoshi , Mizoguchi, Kazushige, Tabira, Tak*

Although the mechanism responsible for cognitive deficits in stress-related neuropsychiatric disorders has been obscure, prefrontal cortical (PFC) dopaminergic dysfunction is thought to be involved. In animals, the mesoprefrontal dopaminergic system is particularly vulnerable to stress, and chronic stress induces working memory impairment. However, the relation between the working memory impairment and altered dopaminergic activity in chronically stressed rats is unclear. Furthermore, the change of dopaminergic activity in the PFC induced by stress is thought to express as a stress response, not as a disorder of organic function. We have previously reported that chronic stress administered by water immersion and restraint for 4 weeks induces an organic disorder such as hippocampal neuronal degeneration. We therefore examined whether chronically stressed (4 weeks) and recovered (10 d) rats show a working memory impairment caused by reduced dopamine (DA) transmission in the PFC, as suspected in the neuropsychiatric disorders. The stress impaired the spatial working memory evaluated by T-maze

task and induced a marked reduction of DA transmission concomitant with an increase in DA D1 receptor density in the PFC. This memory impairment was sufficiently ameliorated by intra-PFC infusion of 10 ng SKF 81297, a D1 receptor-specific agonist. Pretreatment with intraperitoneal injection of 20 µg/kg SCH 23390, a D1 receptor antagonist, reversed the SKF 81297 response. These results indicate that chronic stress induces working memory impairment through a D1 receptor-mediated hypodopaminergic mechanism in the PFC. These findings provide important information for understanding of the mechanisms underlying PFC dysfunction in stress-related neuropsychiatric disorders. **(Author's abstract)**

**Keywords:** *Medicine, Chronic stress, Working memory, Prefrontal cortex, Dopaminergic neuron, D1 receptor, Cognitive deficit*

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NP

0298

## **Clinical profile of patients with Laryngotracheal stenosis in a Tertiary Government Hospital**

*Arriola, Anna Carlissa P. , Chua, Anto*

**Objective:** To describe the clinical profile of patients with laryngotracheal stenosis over a 7-year period and discuss strategies for its prevention.

**Methods:**

**Design:** Retrospective Case Series

**Setting:** Tertiary Government Hospital

**Participants:** Thirteen (13) patients with laryngotracheal stenosis confirmed by laryngoscopy and/or bronchoscopy.

**Results:** Twenty-one patients were evaluated for laryngotracheal stenosis from January 2008 to June 2015, but only 13 with complete data were included in this study. Of the 13 patients, nine (69.2%) belonged to the pediatric age group. Ten (77%) were males and three (23%) were females. Laryngotracheal stenosis following endotracheal tube (ET) intubation was seen in 11 (84.6%) while 2 had thyroid masses and no history of prior ET intubation. Presenting symptoms or reasons for referral were wheezing (n=4), stridor (n=4), failure to decannulate the tracheostomy tube (n=3), and dyspnea (n=2). Duration of ET intubation was four to 60 days. The highest frequency of ET reintubation was 5 times. Among those intubated, stenosis was glottic in one, subglottic in five and tracheal in five patients. Three had Cotton-Myer grade I stenosis, two had grade II, three had grade III and three had grade IV stenosis. Those with thyroid masses had tracheal stenosis.

**Conclusion:** Strategies for prevention of laryngotracheal stenosis should include routine airway endoscopy for patients with longstanding neck masses and for those with prolonged ET intubation, for whom the option of early prophylactic tracheostomy is worth considering. Otherwise, immediate post-extubation endoscopy may facilitate documentation and appropriate intervention. **(Authors' abstract)**

**Keywords:** *Medicine, Acquired laryngeal stenosis, Tracheal stenosis, Endoscopy, Intubation, Intratracheal, Tracheostomy*

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## Clinical profile of post-tonsillectomy bleeding: a 30-month institutional review

*Acuin, Jose M. , Moral, Sa*

**Objective:** To determine the prevalence of post-tonsillectomy bleeding in our institution and to describe the clinical characteristics, tonsillectomy techniques and post-tonsillectomy bleeding intervention in these patients.

**Methods:**

**Design:** Observational descriptive study

**Setting:** Tertiary private hospital

**Population:** All patients who were treated for post-tonsillectomy bleeding were retrospectively reviewed from medical records of all patients who had undergone tonsillectomy between January 1, 2007 and June 30, 2009. Age and sex, indication for surgery, tonsil grade, Body Mass Index (BMI), surgical technique, post-operative medications, length of hospital stay, interval between tonsillectomy and onset of bleeding and interventions to address post-operative bleeding were noted.

**Results:** Of the 662 patients who underwent tonsillectomy, 37 (5.6%) were managed for post-operative hemorrhage. Most had grade 2 or 3 tonsils (18 or 48.6% and 16 or 43.2% respectively) and were obese (25 or 67.5%). The highest proportion of post-operative bleeding was 9.2% for bipolar cauterization technique (18 of 196 patients) followed by 7.4% with cold knife, monopolar cauterization and suturing (11 of 148 patients); 6.9% with harmonic scalpel (2 of 29 patients); 6.5% with monopolar and bipolar cauterization (3 of 46 patients), and 2.8% for cold knife or Fischer knife (3 of 109 patients). Seven patients (18.9%) required blood transfusion. Onset of bleeding occurred between 4-12 days following surgery (mean: 8 days). Possible causes of bleeding included heavy physical activity and cough but most had no identifiable cause. Majority of the patients (29 out of 37) required surgical exploration under general anesthesia.

**Conclusion:** Post-tonsillectomy bleeding is still a clinically significant complication despite advances in surgical techniques. Surgeons must always consider trade-offs between benefits and risks of the procedure and be continually vigilant of this potentially serious complication. **(Authors' abstract)**

**Keywords:** *Medicine, Post-tonsillectomy bleeding, Tonsillectomy techniques, Bipolar cauterization technique, Tonsil grade, Body mass index*

## Coding of sound-source location by ensembles of cortical neurons

*Xu, Li , Furukawa, Shigeto, Middlebrooks, Joh*



We examined the coding of sound-source location by ensembles of neurons in the auditory cortex. Broadband noise bursts were presented from loudspeakers throughout 360° in the horizontal plane. Sound levels varied from 20 to 40 dB above neural thresholds. We recorded temporal spike patterns simultaneously at 16 recording sites in area A2 of  $\alpha$ -chloralose-anesthetized cats. Spike patterns of individual units varied in spike counts and in spike timing as a function of sound-source location. Ensembles of up to 19 units recorded simultaneously demonstrated additional location sensitivity in the form of relative spike counts and relative spike timing among neurons. We used an artificial neural network (ANN) algorithm to recognize ensemble spike patterns and, thereby, to infer the locations of sound sources. The ANN could estimate stimulus locations based on ensemble responses to single-stimulus presentations. Median errors (MEs) averaged  $49.2 \pm 11.9^\circ$  (mean  $\pm$  SD;  $n = 34$ ; chance level,  $90^\circ$ ). The ANN maintained better-than-chance performance even when input spike patterns were expressed as relative spike counts across units (i.e., no information available from absolute spike counts of individual units; ME,  $63.0 \pm 11.8^\circ$ ) or when spike latencies were represented as time relative to the first spike for each trial (i.e., no external time reference available; ME,  $54.3 \pm 12.4^\circ$ ). The ANN performance improved monotonically as the sizes of ensemble patterns were increased by combining patterns across the entire unit sample. The performance by ensembles of 128 units approached the level of localization performance of behaving cats. (**Author's abstract**)

**Keywords:** *Medicine, Sound localization, Auditory cortex, Neural population, Artificial neural network, Neural coding, Spatial hearing*

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2000 February,  
(Filipiniana Analytics)  
NP

0301

### **Cognitive and physio-therapies for positional vertigo disorders**

***Reddy, Sreenivas , Rao, Rajeswar , Narayana, Venkat , Reddy, L.S.S. , Reddy, Sai Satyana***

The common cause of persistent vertigo is affective in 2.4% of the universal population. Benign paroxysmal positional vertigo is produced when calcium carbonate material originating from the macula of the utricle falls into one of the semicircular canals. Due to their density relative to the endolymph, they move in response to gravity and activate excitation of the ampullary nerve of the exaggerated canal. This, in turn, produces a burst of vertigo connected with nystagmus unique to that canal. Recognition of this condition is important not only to avert expensive and often unnecessary testing, but also to easily, rapidly, and effectively treatment 90% of cases. Two well-established methods of treating BPPV form the basis for this project. By making people conscious of the phenomenon, helping them to cognitive choices, and brining awareness in humans and finding the symptoms and proactive measures to diminish the risk of positional vertigo. In forms of vertigo, where the inner ear has suffered damage and the function of that ear is fixed, not changing over time, physical therapy and behavioral therapy can be quite helpful. When the inner ear is damaged, people commonly experience severe spinning for several days. If after several weeks the person still has a loss of balance, then physical therapy can help restore this balance. The reason physical therapy and behavioral therapy are helpful to train the brain to compensate for the loss of function in the ear. Just as we can make a muscle stronger by exercising it, you can make the balance system in the brain work better by exercising it. The paper gives indispensable knowledge and understanding of vertigo and its effective treatment techniques. (Author's abstract)

**Keywords:** *Medicine, Vertigo , Paroxysmal, Nystagmus, Utricle, Inner ear*

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2012,  
(Filipiniana Analytics)  
NP

## **Combined electric and acoustic stimulation: successful treatment option for partial deafness**

*Chiong, Charlo*

Cochlear implants are now the treatment of choice for patients with severe to profound hearing loss. Inclusion criteria for cochlear implantation have expanded and a whole array of implantable hearing devices have been introduced over the years. To date, more than 250 cochlear implantations have now been performed in the Philippines. In 2006, the first auditory brainstem implantation, and first vibroplasty or middle ear implantation in the country were done at the Philippine General Hospital (PGH). In 2008, the first electroacoustic stimulation or partial deafness cochlear implantation surgery in the country was performed at the Capitol Medical Center by Professor Joachim Müller of the University of Würzburg and the author. This concept that cochlear implantation can be performed for patients with residual hearing or only partial deafness is quite novel. There are patients whose low frequency hearing below 1.5 kHz is still be quite good while high frequency hearing loss above 1.5 kHz is in the severe to profound range . For such patients speech discrimination scores will typically fall below 60% at 65 dB sound pressure level (SPL) in the best aided condition. **(Author's abstract)**

**Keywords:** *Medicine, Cochlear implants, Electric stimulation, Acoustic stimulation, Sound pressure level (SPL)*

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 25 Issue No. 2, 52-56  
2010,  
(Filipiniana Analytics)  
NP

## **Comparison of cysteine string protein (Csp) and mutant $\alpha$ -SNAP overexpression reveals a role for Csp in late steps of membrane fusion in dense-core granule exocytosis in adrenal chromaffin cells**

*Burgoyne, Robert D. , Graham, Marga*

Assembly of the SNARE complex and its disassembly caused by the action of soluble *N*-ethylmaleimide-sensitive factor (NSF) attachment protein (SNAP) and NSF is crucial for the maintenance of vesicular traffic, including fusion of regulated exocytotic vesicles. Various other proteins may also have important roles in the processes leading to membrane fusion via interaction with the SNARE proteins, including the secretory vesicle cysteine string protein (Csp). Here we have examined the effect of overexpression of a dominant negative  $\alpha$ -SNAP mutant or Csp on exocytosis of dense-core granules in single chromaffin cells monitored using amperometry to detect released catecholamine. Exocytosis of trans-Golgi network (TGN)-derived dense-core granules was substantially inhibited by expression of  $\alpha$ -SNAP(L294A). The amplitude and characteristics of the individual release events were unaffected by expression of  $\alpha$ -SNAP(L294A), consistent with an essential role for  $\alpha$ -SNAP in early steps of priming but not in the fusion process. In contrast, Csp overexpression, which also inhibited the extent of exocytosis, also modified the kinetics of the individual release events seen as an increase in the rise time and a broadening of the residual amperometric spikes in Csp-transfected cells. These results suggest that unlike  $\alpha$ -SNAP, Csp plays a key role in the protein interactions close to the fusion process or fusion pore opening during  $\text{Ca}^{2+}$ -regulated exocytosis. **(Author's abstract)**

**Keywords:** *Medicine, Exocytosis, Secretion, SNAP, NSF, Csp, Amperometry*

## Comparison of the laminar distribution of input from areas 17 and 18 of the visual cortex to the lateral geniculate nucleus of the cat

*Duckett, S. G. , Murphy, P. C., Sillito, A*

The feedback from area 18 of the cat visual cortex to the lateral geniculate nucleus has been investigated by labeling and reconstructing seventeen axons of known receptive field position and eye preference. The distribution of boutons from each axon was quantified with respect to the compartments of the geniculate complex, and the results were compared with an equivalent analysis of fourteen area 17 axons. Area 18 axons form large, sparse arborizations that extend up to 1.9 mm laterally ( $1170 \pm 85 \mu\text{m}$ ; mean  $\pm$  SEM), with a core of relatively dense innervation spanning on average  $600 \pm 70 \mu\text{m}$  (mean  $\pm$  SEM). Thus, they have the potential to influence the transmission of visual information from well beyond their own classical receptive fields. In this respect, they are surprisingly similar to the axons from area 17, despite the fact that the two cortical areas have very different retinotopy. However, there are important differences between the pathways. Area 18 axons project more heavily to the C layers and medial interlaminar nucleus. Whereas the input from both areas to the A layers is biased toward the layer appropriate to the eye preference of each axon, the area 18 input to magnocellular layer C is not. The distribution of area 18 boutons favors the bottom of their preferred A layer, and the area 17 boutons favor the top. These differences mirror those seen in the afferent pathways, suggesting that each cortical area preferentially targets the cells from which it receives input. Finally, their greater diameter suggests that area 18 axons provide the earliest feedback signal in the corticogeniculate loop. (**Author's abstract**)

**Keywords:** *Medicine, Lateral geniculate nucleus, Visual cortex, Corticofugal feedback, Functional connectivity, Ocular dominance, Visual responses*

## Complications of head and neck reconstructive surgery using axial pedicled flap

*Chiong, Jr., Armando M. , Alfanta, Eduard M. , Dy, Alexander Edw*

**Objectives:** Axial flap surgery is associated with numerous complications. The purpose of this study is to determine the frequency of these complications, and identify possible factors contributory to their occurrence.

**Methods:**

<b>Design:</b>	Cross-Sectional	Study		
<b>Setting:</b>	Tertiary	Public	University	Hospital

Subjects: Records of all patients who underwent axial pedicled  $\bar{r}$ ,ap reconstruction at the otorhinolaryngology ward of our tertiary public university hospital from January 2013 to July 2015 were retrospectively reviewed, and data consisting of age, sex, diagnosis, disease stage, smoking history, alcohol intake, co-morbidities, past operations, pre-operative hemoglobin and albumin, total operative time, total blood loss, location and total area of the surgical defect and length of hospitalization were tabulated. All complications were listed. Data were analyzed for any potential trends.

**Results:** A total of 38 patients underwent axial pedicled  $\bar{r}$ ,ap reconstruction in the study period. Nineteen out of 38 (50%) cases involved complications. The most common complication was infection. Most of the complications occurred in males with history of alcohol intake, advanced cancer stage, significant blood loss, recurrent tumors, low pre-operative hemoglobin and albumin levels, and a large area of surgical defect.

**Conclusions:** The complication rate for axial  $\bar{r}$ ,ap surgery in our series was significant at 50%. Potential risk factors identified were male gender, advanced cancer stage, tumor recurrence, alcohol intake, low pre-operative hemoglobin and albumin levels, significant blood loss, longer operative time and a larger surgical defect. (Authors' abstract)

**Keywords:** *Medicine, Surgical flaps, Myocutaneous flap, Axial flap, Complications, Risk factors*

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 30 Issue No. 2, 19-24  
2015,  
(Filipiniana Analytics)  
NP

0306

## **Compound odontoma of the maxillary sinus**

*Vital, Lei-Joan , Villalon, Ma. Meli*

In 1863, the term odontoma was introduced by Paul Broca which he described as a tumor formed by overgrowth of transitory or complete dental tissue. The World Health Organization classified them under mixed benign odontogenic tumors because of their origin from epithelial and mesenchymal cells exhibiting different structures of dental tissue (enamel, dentin, cementum and pulp). There are two distinct types: compound and complex. Compound odontoma is composed of all odontogenic tissue in an orderly fashion resulting in many teeth-like structures but with no morphological resemblance to normal teeth whereas a complex odontoma appears as an irregular mass with no similarity even to rudimentary teeth.

The pathogenesis of odontomas has not been completely established although the most accepted etiology is related to trauma, infection, growth pressure and genetic mutations in one or more genes that cause disturbances in the mechanism controlling tooth development.

Patients with compound odontoma are often asymptomatic. It is usually detected on routine radiography upon examination of an unerupted tooth. Odontomas can occur anywhere in the jaws and are usually found associated with or within the alveolar process.<sup>7</sup> However, the presence of an odontoma in the maxillary sinus is very rare.

We present a female patient with a compound odontoma in the maxillary sinus initially managed as nasal vestibulitis with maxillary sinusitis. (**Authors' abstract**)

**Keywords:** *Medicine, Odontoma, Odontogenic tissue, Rudimentary teeth, Maxillary sinus*

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0307

### **Congenital nasal chondromesenchymal hamartoma**

*Zafra, Mario Adrian M. , Estimar, Ruth S., Lopa, Ramon Antoni*

**Objectives:** To report the case of a congenital nasal chondromesenchymal hamartoma in a one year-old female and review the literature, identifying problems encountered in confirming the diagnosis and in treatment of this patient.

**Methods:**

Design:		Case		Report
Setting:	Tertiary	Public	General	Hospital
Patient:				One

**Results:** A one-year-old female with an intranasal mass noted at birth and with subsequent unilateral maxillary enlargement is described. Computed tomography showed calcifications and erosion of adjacent bony structures. Histopathology and immunohistochemistry of an intranasal biopsy were interpreted as chordoma, a malignant tumor. Following surgical excision, the final histopathologic diagnosis was chondroid hamartoma.

**Conclusion:** Only 20 cases of nasal chondromesenchymal hamartoma have been reported in the literature worldwide. These tumors may present clinically, histopathologically and radiologically as malignant tumors and may mislead even the experts. The whole clinical picture should be taken together to avoid misdiagnosis as a malignancy and to facilitate appropriate management. **(Author's abstract)**

**Keywords:** *Medicine, Nasal chondromesenchymal hamartoma, Nasal masses in infancy, Nasal chondroid lesions*

0308

### **Congenital oval window aplasia: an unusual cause of conductive hearing loss in an adult**

*Abes, Franco Louie L. , Perez, Mary Ellen C. , Chiong, Alessandra E. , Mercado-Evasco, Rachel T. , Chiong, Charlotte M., Chan, Abne*

**Objectives:** To report a case of congenital oval window aplasia (COWA) in a Filipino adult presenting with unilateral maximal conductive hearing loss and discuss the diagnostic considerations, pathophysiology and management.

**Methods:**

Design:		Case		Report
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**Setting:** Tertiary Public Referral Center

**Patient:** One

**Results:** Audiometric evaluation showed a maximal unilateral left conductive hearing loss. High resolution temporal bone CT showed absence of the oval window on the left along with facial and stapes abnormalities. Exploratory tympanotomy showed an aberrant facial nerve, monopodal and abnormally located stapes and absent oval window. Postoperative hearing gain achieved after a neo-oval window and Schuknecht piston wire prosthesis remained stable over two years.

**Conclusion:** A congenital minor ear anomaly classified as Cremers Class 4a in which a congenital oval window aplasia was associated with an aberrant facial nerve anomaly and a monopodal stapes is reported. Recent literature supported the view that congenital oval window aplasia can in selected cases be amenable to various surgical approaches and a stable postoperative hearing gain is achievable in the long term. **(Authors' abstract)**

**Keywords:** *Medicine, Oval window absence, Cremers classification, Congenital middle ear*

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2016,  
(Filipiniana Analytics)  
NP

0309

## **Consequences of neural cell adhesion molecule deficiency on cell migration in the rostral migratory stream of the mouse**

*Rougon, Geneviève, Jankovski, Aleksandar, Durbec, Pascale, Chazal, Geneviève, Cremer, Ha*

In vertebrates, interneurons of the olfactory bulb (OB) are generated postnatally and throughout life at the subventricular zone of the forebrain. The neuronal precursors migrate tangentially through the forebrain using a well defined pathway, the rostral migratory stream (RMS), and a particular mode of migration in a chain-like organization. A severe size reduction of the OB represents the most striking morphological phenotype in neural cell adhesion molecule (NCAM)-deficient mice. This defect has been traced back to a migration deficit of the precursors in the RMS and linked to the lack of the polysialylated form of NCAM. In this study we investigate the morphological alterations and functional properties of the RMS in mice totally devoid of all isoforms of NCAM and polysialic acid (PSA). We show that a morphologically altered, but defined and continuous pathway exists in mutants, and we present *in vivo* and *in vitro* evidence that PSA–NCAM in the RMS is not essential for the formation and migration of chains. Instead, we find a massive gliosis associated with the formation of membrane specializations in a heterotypic manner, linking precursors to astrocytes. This finding and the over-representation and defasciculation of axons in the pathway suggest that important interactions between migrating cells and their stationary environment are perturbed in the mutants. Finally, we used transplantation experiments to demonstrate that lack of PSA–NCAM leads to a decrease but not a total blockade of migration and demonstrate that the mutant RMS is functional in transporting normal neuronal precursors to the OB. **(Author's abstract)**

**Keywords:** *Medicine, Cell adhesion molecules, Subventricular zone, Olfactory bulb, Neurogenesis, Tangential cell migration, Polysialic acid*

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2000 February,  
(Filipiniana Analytics)  
NP

## Control of GluR1 AMPA receptor function by cAMP-dependent protein kinase

*Traynelis, S. F. , Lee, R. L. Haganir, Schousboe, A. , Bowie, H.-K. , Banke, T.*

Modulation of postsynaptic AMPA receptors in the brain by phosphorylation may play a role in the expression of synaptic plasticity at central excitatory synapses. It is known from biochemical studies that GluR1 AMPA receptor subunits can be phosphorylated within their C terminal by cAMP-dependent protein kinase A (PKA), which is colocalized with the phosphatase calcineurin (i.e., phosphatase 2B). We have examined the effect of PKA and calcineurin on the time course, peak open probability ( $P_{O,PEAK}$ ), and single-channel properties of glutamate-evoked responses for neuronal AMPA receptors and homomeric GluR1(flip) receptors recorded in outside-out patches. Inclusion of purified catalytic subunit  $\alpha$ -PKA in the pipette solution increased neuronal AMPA receptor  $P_{O,PEAK}$  (0.92) compared with recordings made with calcineurin included in the pipette ( $P_{O,PEAK}$  0.39). Similarly,  $\alpha$ -PKA increased  $P_{O,PEAK}$  for recombinant GluR1 receptors (0.78) compared with patches excised from cells cotransfected with a cDNA encoding the PKA peptide inhibitor PKI ( $P_{O,PEAK}$  0.50) or patches with calcineurin included in the pipette ( $P_{O,PEAK}$  0.42). Neither PKA nor calcineurin altered the amplitude of single-channel subconductance levels, weighted mean unitary current, mean channel open period, burst length, or macroscopic response waveform for recombinant GluR1 receptors. Substitution of an amino acid at the PKA phosphorylation site (S845A) on GluR1 eliminated the PKA-induced increase in  $P_{O,PEAK}$ , whereas the mutation of a  $Ca^{2+}$ -calmodulin-dependent kinase II and PKC phosphorylation site (S831A) was without effect. These results suggest that AMPA receptor peak response open probability can be increased by PKA through phosphorylation of GluR1 Ser845. (**Author's abstract**)

**Keywords:** *Medicine, AMPA receptors, Glutamate, LTD, PKA, Calcineurin, Open probability, GluR1*

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JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 1, 89-102  
2000 January,  
(Filipiniana Analytics)  
NP

## Critical dependence of cAMP response element-binding protein phosphorylation on L-type calcium channels supports a selective response to EPSPs in preference to action potentials

*Deisseroth, Karl , Bito, Haruhiko , Mermelstein, Paul G., Tsien, Richar*

Activity-dependent gene expression in neurons shows a remarkable ability to differentiate between different types of stimulation: orthodromic inputs that engage synaptic transmission are much more effective than antidromic stimuli that do not. We have studied the basis of such selectivity in cultured hippocampal neurons in which nuclear cAMP response element-binding protein (CREB) phosphorylation is induced by synaptic activity but not by action potential (AP) stimulation in the absence of EPSPs, although spikes by themselves generate large elevations in intracellular  $Ca^{2+}$ . Previous work has shown that  $Ca^{2+}$  entry through L-type  $Ca^{2+}$  channels plays a dominant role in triggering calmodulin mobilization and activation of calmodulin-dependent kinases that phosphorylate CREB, raising the possibility that L-type channels contribute to the selective response to EPSPs rather than APs. Accordingly, we performed voltage-clamp experiments to compare the currents carried by L-type channels during depolarizing waveforms that approximated APs or dendritic EPSPs. The integrated current generated by L-type channels was significantly less after mock APs than with EPSP-like depolarizations. The difference was traced to two distinct factors. Compared with other channels, L-type channels activated at relatively negative potentials, favoring their opening with EPSP stimulation; they also exhibited relatively slow activation kinetics, weighing

against their contribution during an AP. The relative ineffectiveness of APs as a stimulus for CREB phosphorylation could be overcome by exposure to the agonist Bay K8644, which potentiated the AP-induced influx through L-type channels by ~10-fold. Under normal conditions, the unique biophysical properties of L-type channels allow them to act as a kinetic filter to support spike–EPSP discrimination. **(Author's abstract)**

**Keywords:** *Medicine, Calmodulin, CREB, Hippocampus, Calcium channels, Gene expression, Dihydropyridine, NMDA, Bay K8644*

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2000 January,  
(Filipiniana Analytics)  
NP

0312

### **A cross sectional study on the postural low back pain**

*Siddique, Muhammad*

Postural back pain in the lumbosacral area is main type of commonly occurring back pain due to poor posture adopted during any work or exertion. According to statistical calculations every second person in the US is suffering from it. The community has to face a loss of 700 million dollars due to back pain mainly due to posture. The association of height with the postural low back pain has been tested. The reference height taken for these results was 5 ft 7 Inches considering the fact that in Pakistan it is the average height of a person. It is more common in the taller persons or the persons who have height more than 5 ft 7 inches.  $\chi^2$  method has been used to conclude the results. I reject the null hypothesis in favour of the research hypothesis. So height plays an important role in the development of postural backache and the people who have height more than 5ft 7in are more at the risk of developing postural back pain or it is more common in tall people i.e. who have height more than 5ft 7in than the persons who have height less than the required limit of height. The taller person who tries to adjust himself in any environment which is not suitable for him often develops the bad posture which eventually results in the postural back pain. As in Pakistan, the average height of a person is 5ft 7in . When taller person tries to fit himself in the society, he may be more at the risk of postural back pain than the average height person here. It can also be concluded that males are taller than females on the average. So males are more at the risk of developing postural back pain. (Author's abstract)

**Keywords:** *Medicine, Postural low back pain, Bad posture, Pakistan*

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IAMURE International Journal of Health Education, Volume No. 1 Issue No. 1, 14-31  
2012,  
(Filipiniana Analytics)  
NP

0313

### **Culture-based beliefs and practices on pregnancy and childbirth among Sorsoguenos, Philippines**

*Ocbian, Magdal*

This study documented the cultural beliefs and practices of Sorsoguenos related to pregnancy and childbirth through interviews to 233 respondents. The cultural beliefs were classified as prescriptive, restrictive, taboos and



predictive. Examples of prescriptive beliefs are: conceiving mother is encouraged to be happy for this will have an effect on the baby; food cravings of the conceiving mother should be provided and lactating mother should be given warm bath with water previously boiled with guava and other medicinal leaves. Wearing anything around the neck of a conceiving mother like a shawl and a necklace is a restrictive belief; while watching scary movies or ugly images by the conceiving mothers is prohibited because it would cause the baby to resemble that person or object. A pregnant women should avoid witnessing an eclipse since it is believed to cause stillbirth. Determining the sex of the baby through the appearance and behavior of the mother and shape of her abdomen is a popular predictive belief. These cultural beliefs may be considered in implementing maternal care and other health programs that would fit in with their cultural practices. (Author's abstract)

**Keywords:** *Medicine, Culture, Beliefs, Practices, Pregnancy, Childbirth, Sorsoguenos, Philippines*

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2012,  
(Filipiniana Analytics)  
NP

0314

**Cutaneous metastases from Nasopharyngeal carcinoma: a rare manifestation**  
*Sabir Husin Athar, Primuharsa Putra , Ai, Ong Cheng , Sawali, Halimuddin , Yunus, Mohd Razif M*

**Objectives:** In this article, we report on two unusual cases of advanced nasopharyngeal carcinoma (NPC) with distant cutaneous metastases.

**Methods:**

<b>Design:</b>	Case	Report
<b>Setting:</b>	Tertiary	Center
<b>Patients:</b>	Referral	Two

**Results:** Two patients with advanced NPC developed multiple nodular skin metastases, one after completing radiotherapy and another during concurrent chemo-radiotherapy. Biopsies of these skin lesions confirmed metastatic NPC and both patients succumbed to the disease.

**Conclusion:** Nasopharyngeal carcinoma with skin metastases carries a very poor prognosis. Early detection, diagnosis and treatment are still the best management strategy for nasopharyngeal carcinoma. (**Authors' abstract**)

**Keywords:** *Medicine, Nasopharyngeal carcinoma, Nasopharynx, Skin metastases, Cutaneous metastases*

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 25 Issue No. 2, 32-36  
2010,  
(Filipiniana Analytics)  
NP

0315

**Cyclooxygenase-2 contributes to functional hyperemia in whisker-barrel cortex**  
*Ross, Elizabeth , Morham, Scott G. , Araki, Eiichi , Niwa, Kiyoshi, Iadecola, Costan*

The prostanoid-synthesizing enzyme cyclooxygenase-2 (COX-2) is expressed in selected cerebral cortical neurons and is involved in synaptic signaling. We sought to determine whether COX-2 participates in the increase in cerebral blood flow produced by synaptic activity in the somatosensory cortex. In anesthetized mice, the vibrissae were stimulated mechanically, and cerebral blood flow was recorded in the contralateral somatosensory cortex by a laser-Doppler probe. We found that the COX-2 inhibitor NS-398 attenuates the increase in somatosensory cortex blood flow produced by vibrissal stimulation. Furthermore, the flow response was impaired in mice lacking the COX-2 gene, whereas the associated increase in whisker-barrel cortex glucose use was not affected. The increases in cerebral blood flow produced by hypercapnia, acetylcholine, or bradykinin were not attenuated by NS-398, nor did they differ between wild-type and COX-2 null mice. The findings provide evidence for a previously unrecognized role of COX-2 in the mechanisms coupling synaptic activity to neocortical blood flow and provide an insight into one of the functions of constitutive COX-2 in the CNS. **(Author's abstract)**

**Keywords:** *Medicine, Cerebral blood flow, Somatosensory activation, Glucose use, Prostanoids, 2-deoxyglucose, COX-2 knock-out mice, NS-398*

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JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 2, 763-770  
2000 January,  
(Filipiniana Analytics)  
NP

0316

### **Cystic cochleovestibular malformation (incomplete partition type 1)**

*Yang, Nathan*

A 5-year-old female with bilateral profound hearing loss underwent computerized tomographic imaging of the temporal bone as part of the work-up to determine the etiology of her deafness and to delineate middle and inner ear anatomy prior to cochlear implantation. The examination revealed an inner ear malformation which based on the newest classification of cochleovestibular malformations by Sennaroglu and Saatci, is called an incomplete partition type I (IP-1) or cystic cochleovestibular malformation. This condition is characterized by: (1) a cochlea that is lacking the entire modiolus and cribriform area resulting in a cystic appearance; and (2) a large cystic vestibule. **(Author's abstract)**

**Keywords:** *Medicine, Incomplete partition type (IP-1), Cystic cochleovestibular malformation, Cochlea, Cystic vestibule*

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 25 Issue No. 1, 41-42  
2010,  
(Filipiniana Analytics)  
NP

0317

### **Cytopathologic herpes simplex virus features in Laryngeal squamous cell carcinoma**

*Chang, Jimmy V. , Devilleres-Mendoza, Dona*

Laryngeal SCCA usually presents with hoarseness when the glottis is involved, dysphagia if the supraglottis is involved, and difficulty of breathing and stridor in subglottic involvement. A neck mass as an initial presentation of laryngeal carcinoma is commonly linked to the involvement of the supraglottis due to its rich lymphatic drainage.

About 70% of supraglottic tumours present with advanced disease (stages III-IV),1 while 75% of glottic tumours present with localized disease (stages I-II).

Smoking and alcohol consumption are considered highly significant etiologic factors but evidence has suggested a possible role for human papilloma virus (HPV) infection, ras oncogene activation, and gastroesophageal reflux as well. To the best of our knowledge, laryngeal squamous cell carcinoma has not been associated with herpes simplex virus (HSV).

We report a case of laryngeal squamous cell carcinoma with an unusual presentation and peculiar histopathology, and discuss its potential association with herpes simplex virus. **(Authors' abstract)**

**Keywords:** *Medicine, Cytopathologic herpes simplex virus, Laryngeal squamous cell carcinoma, Peculiar histopathology*

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0318

### **Decoding temporal information: a model based on short-term synaptic plasticity** *Buonomano, D*

In the current paper it is proposed that short-term plasticity and dynamic changes in the balance of excitatory–inhibitory interactions may underlie the decoding of temporal information, that is, the generation of temporally selective neurons. Our initial approach was to simulate excitatory–inhibitory disynaptic circuits. Such circuits were composed of a single excitatory and inhibitory neuron and incorporated short-term plasticity of EPSPs and IPSPs and slow IPSPs. We first showed that it is possible to tune cells to respond selectively to different intervals by changing the synaptic weights of different synapses in parallel. In other words, temporal tuning can rely on long-term changes in synaptic strength and does not require changes in the time constants of the temporal properties. When the units studied in disynaptic circuits were incorporated into a larger single-layer network, the units exhibited a broad range of temporal selectivity ranging from no interval tuning to interval-selective tuning. The variability in temporal tuning relied on the variability of synaptic strengths. The network as a whole contained a robust population code for a wide range of intervals. Importantly, the same network was able to discriminate simple temporal sequences. These results argue that neural circuits are intrinsically able to process temporal information on the time scale of tens to hundreds of milliseconds and that specialized mechanisms, such as delay lines or oscillators, may not be necessary. **(Author's abstract)**

**Keywords:** *Medicine, Interval, Short-term plasticity, Paired-pulse facilitation, Paired-pulse depression, Timing, Temporal processing*

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0319

## Dependence of GABAergic synaptic areas on the interneuron type and target size

*Kubota, Yoshiyuki, Kawaguchi, Ya*

In the neostriatum, several types of interneuron with distinct firing patterns and expression of neuroactive substances are known to exist. We found two types of neostriatal interneurons, parvalbumin-containing fast-spiking (FS) cells and somatostatin-containing low-threshold spike (LTS) cells to both be immunoreactive for GABA at their axon terminals in immersion-fixed brain slices from rat. To reveal the differences in synaptic connections between these two types of GABAergic interneurons, the postsynaptic target and their synaptic structure were compared by three-dimensional reconstructions from electron microscopic images of intracellularly stained axon terminals. FS cells made a greater proportion of synaptic contacts onto somata than LTS cells. Although terminal boutons of FS and LTS cells were similar in volume, their synaptic junctional areas differed in size distribution and relation to the dimensions of postsynaptic dendritic shafts or spines. Whereas the synaptic junctional areas of FS cells ( $0.024\text{--}0.435\ \mu\text{m}^2$ ;  $n = 28$ ) sharply and linearly increased with the circumference of the postsynaptic dendrites or spines ( $0.939\text{--}5.146\ \mu\text{m}$ ), the slope for the junctional area of LTS cells ( $0.02\text{--}0.103\ \mu\text{m}^2$ ;  $n = 29$ ) against circumference ( $0.844\text{--}4.252\ \mu\text{m}$ ) was less steep, and a much weaker correlation was seen. In addition to the differences in firing patterns, expressed molecules, axonal arborizations, and postsynaptic targets, this variation in dependency of the synaptic area on the target size suggests functional differentiation of GABAergic interneurons.

**(Author's abstract)**

**Keywords:** *Medicine, Neostriatum, Interneuron, GABA, Parvalbumin, Somatostatin, Fast spiking cel, Low threshold spike, Postsynaptic structure, Synaptic junctional area*

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NP

0320

## Dermal metastasis from *Nasopharyngeal carcinoma*: a rare form of metastasis

*CaA±al, Johanna Patri*

**Objective:** To report a rare form of metastasis from a primary nasopharyngeal carcinoma, a creeping form of dermal metastasis.

**Methods:**

<b>Design:</b>		Case		Report
<b>Setting:</b>	Tertiary	Public	University	Hospital
<b>Patient:</b>				One

**Results:** A 47-year-old male referred for radiotherapy after having undergone a selective neck dissection for multiple cervical lymphadenopathy with histopathologic diagnosis of undifferentiated carcinoma and no known primary underwent a four-quadrant nasopharyngeal biopsy which confirmed the presence of nasopharyngeal carcinoma. Subsequent radiotherapy resolved the primary mass, and a new posterior cervical lymph node that appeared five months after completion of radiotherapy also resolved with additional radiotherapy. He was asymptomatic for two years until he noted thickening of the skin in his left supraclavicular area. A Computed Tomography (CT) scan showed deep cervical adenopathy and skin thickening, and biopsy confirmed dermal metastatic carcinoma. Two courses of radiotherapy to the affected skin and left axilla where a lymph node had developed resulted in resolution and he was referred for chemotherapy.

**Conclusion:** Dermal metastasis from nasopharyngeal carcinoma is rare and does not present with pathognomonic symptomatology. It may therefore be confused for a benign side effect (dermatitis), not the malignant manifestation

that forebodes a bad prognosis. Patients with dermal metastasis should receive treatment, and radiotherapy may play a significant part. Chemotherapy may also play a role in its management. **(Authors' abstract)**

**Keywords:** *Medicine, Nasopharyngeal carcinoma, Dermal metastasis, Radiotherapy, Cervical lymphadenopathy*

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0321

### **Destruction and creation of spatial tuning by disinhibition: GABAA blockade of prefrontal cortical neurons engaged by working memory**

*Goldman-Rakic, Patricia S. , Williams, Graham V. , Rao, Srin*

Local circuit neurons in the dorsolateral prefrontal cortex (dPFC) of monkeys have been implicated in the cellular basis of working memory. To further elucidate the role of inhibition in spatial tuning, we iontophoresed bicuculline methiodide (BMI) onto functionally characterized neurons in the dPFC of monkeys performing an oculomotor delayed response task. This GABAA blockade revealed that both putative interneurons and pyramidal cells possess significant inhibitory tone in the awake, behaving monkey. In addition, BMI application primarily resulted in the loss of previously extant spatial tuning in both cell types through reduction of both isodirectional and cross-directional inhibition. This tuning loss occurred in both the sensorimotor and mnemonic phases of the task, although the delay activity of prefrontal neurons appeared to be particularly affected. Finally, application of BMI also created significant spatial tuning in a sizable minority of units that were untuned in the control condition. Visual field analysis of such tuning suggests that it is likely caused by the unmasking of normally suppressed spatially tuned excitatory input. These findings provide the first direct evidence of directional inhibitory modulation of pyramidal cell and interneuron firing in both the mnemonic and sensorimotor phases of the working memory process, and they implicate a further role for GABAergic interneurons in the construction of spatial tuning in prefrontal cortex. **(Author's abstract)**

**Keywords:** *Medicine, Primate, Inhibition, Prefrontal cortex, Interneurons, Spatial tuning, Bicuculline, Working memory, Fast spiking*

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NP

0322

### **A developmental change in NMDA receptor-associated proteins at hippocampal synapses**

*Hell, Johannes W. , Blahos, Jaroslav , Wang, Ya-Xian , Petralia, Ronald S. , Sans, Nathalie, Wenthold, Rober*

The membrane-associated guanylate kinases [Chapsyn-110/postsynaptic density-93 (PSD-93), synapse-associated protein-90 (SAP-90)/PSD-95, and SAP-102] are believed to cluster and anchor NMDA receptors at the synapse and to play a role in signal transduction. We have investigated the developmental changes in expression of these proteins in rat hippocampus using biochemical analyses and quantitative immunogold electron microscopy. At postnatal day 2 (P2), SAP-102 was highly expressed, whereas PSD-93 and PSD-95 were low. SAP-102 expression

increased during the first week, stayed stable through P35, and showed a reduced expression at 6 months. From P2 through 6 months, PSD-93 and PSD-95 increased. For PSD-95, the percent of labeled synapses increased almost threefold with age, whereas the number of gold particles per labeled synapse did not change significantly, suggesting that the increase in PSD-95 is attributable primarily to an increase in the number of synapses containing PSD-95. In contrast, for SAP-102, both percent labeled synapses and the number of gold particles per labeled synapse decreased during this time. From Western blots of hippocampus and immunogold analysis of CA1 synapses, the high expression of NR2B at P2 coincides with the high level of SAP-102 at synapses, whereas the later expression of NR2A coincides with that of PSD-93 and PSD-95. To determine whether the changes in PSD-93/95 and SAP-102 reflect preferred associations with NR2A and NR2B, respectively, we measured co-immunoprecipitation in the adult hippocampus. These studies suggest that there is a preference for complexes of NR2A/PSD-93/95 and NR2B/SAP-102. These results indicate that individual receptor-associated proteins may have specific functions that are critical to synapse development. **(Author's abstract)**

**Keywords:** *Medicine, MAGUKs, PSD-93, PSD-95, SAP-102, Glutamate receptors, Postsynaptic density, Hippocampus*

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0323

### **Developmental changes in calcium channel types mediating central synaptic transmission**

*Takahashi Tomoyuki, Uchitel, Osvaldo D., Momiyama, Akiko, Iwasaki, Sh*

Multiple types of high-voltage-activated  $\text{Ca}^{2+}$  channels trigger neurotransmitter release at the mammalian central synapse. Among them, the  $\omega$ -conotoxin GVIA-sensitive N-type channels and the  $\omega$ -Aga-IVA-sensitive P/Q-type channels mediate fast synaptic transmission. However, at most central synapses, it is not known whether the contributions of different  $\text{Ca}^{2+}$  channel types to synaptic transmission remain stable throughout postnatal development. We have addressed this question by testing type-specific  $\text{Ca}^{2+}$  channel blockers at developing central synapses. Our results indicate that N-type channels contribute to thalamic and cerebellar IPSCs only transiently during early postnatal period and P/Q-type channels predominantly mediate mature synaptic transmission, as we reported previously at the brainstem auditory synapse formed by the calyx of Held. In fact,  $\text{Ca}^{2+}$  currents directly recorded from the auditory calyceal presynaptic terminal were identified as N-, P/Q-, and R-types at postnatal day 7 (P7) to P10 but became predominantly P/Q-type at P13. In contrast to thalamic and cerebellar IPSCs and brainstem auditory EPSCs, N-type  $\text{Ca}^{2+}$  channels persistently contribute to cerebral cortical EPSCs and spinal IPSCs throughout postnatal months. Thus, in adult animals, synaptic transmission is predominantly mediated by P/Q-type channels at a subset of synapses and mediated synergistically by multiple types of  $\text{Ca}^{2+}$  channels at other synapses. **(Author's abstract)**

**Keywords:** *Medicine, N-type calcium channels, P/Q-type calcium channels, Postnatal development, Transmitter release, Central synapse, Slice*

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NP

## Developmental changes in eye-blink conditioning and neuronal activity in the cerebellar interpositus nucleus

*Nicholson, Daniel A. , Freeman, J*

Neuronal activity was recorded in the cerebellar interpositus nucleus in infant rats during classical conditioning of the eye-blink response. The percentage and amplitude of eye-blink conditioned responses increased as a function of postnatal age. Learning-specific neuronal activity in the cerebellum emerged ontogenetically in parallel with the eye-blink conditioned response. There were also age-specific changes in neuronal activity after the onset of the conditioned and unconditioned stimuli. The results indicate that the development of the eye-blink conditioned response may depend on the development of stimulus-evoked neuronal responses and learning-specific plasticity in the cerebellum. Functional immaturity in the afferent neural pathways may limit the induction of neural plasticity in the cerebellum and thereby limit the development of the eye-blink conditioned response. **(Author's abstract)**

**Keywords:** *Medicine, Ontogeny, Cerebellum, Interpositus, Learning, Conditioning, Eye-blink*

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NP

## Developmental changes in the transmitter properties of sympathetic neurons that innervate the periosteum

*Landis, Story C. , Parsons, Sarah , Asmus, Step*

During the development of sweat gland innervation, interactions with the target tissue induce a change from noradrenergic to cholinergic and peptidergic properties. To determine whether the change in neurotransmitter properties that occurs in the sweat gland innervation occurs more generally in sympathetic neurons, we identified a new target of cholinergic sympathetic neurons in rat, the periosteum, which is the connective tissue covering of bone, and characterized the development of periosteal innervation of the sternum. During development, sympathetic axons grow from thoracic sympathetic ganglia along rib periosteum to reach the sternum. All sympathetic axons displayed catecholaminergic properties when they reached the sternum, but these properties subsequently disappeared. Many axons lacked detectable immunoreactivities for vesicular acetylcholine transporter and vasoactive intestinal peptide when they reached the sternum and acquired them after arrival. To determine whether periosteum could direct changes in the neurotransmitter properties of sympathetic neurons that innervate it, we transplanted periosteum to the hairy skin, a noradrenergic sympathetic target. We found that the sympathetic innervation of the transplant underwent a noradrenergic to cholinergic and peptidergic change. These results suggest that periosteum, in addition to sweat glands, regulates the neurotransmitter properties of the sympathetic neurons that innervate it. **(Author's abstract)**

**Keywords:** *Medicine, Cholinergic differentiation factor, Neural crest, Sweat glands, Synapse formation, Neurotrophic cytokines, Transmitter plasticity, Autonomic neurons*

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NP

## Diagnostic value of computerized dynamic posturography in the assessment of peripheral vestibular disorders

*David, Reylan B. , Soriano, Ronaldo G. , Martinez, Norbe*

**Objectives:** This study aims to determine the sensitivity, specificity, positive predictive value and negative predictive value of Computerized Dynamic Posturography (CDP) in properly labeling patients with peripheral vestibular disorders by Videonystagmography (VNG) as having vestibular dysfunction.

### Methods:

<b>Design:</b>	Case	-	Control	Study
<b>Setting:</b>	Tertiary		Private	Hospital

**Subjects:** Twenty-three (23) patients aged 18 and above with no history of hypertension or cardiovascular disease and no intake of anti-vertigo medications for at least 48 hours prior to testing and with complete VNG and CDP results obtained on the same day or at least two days apart were included in the study. Cases were defined as those diagnosed with a peripheral vestibular disorder by VNG while controls were defined as those with normal VNG results. Sensitivity, specificity, positive predictive value and negative predictive value of CDP in labeling those with peripheral vestibular disorders as vestibular were determined using VNG as gold standard.

**Results:** There were 11 cases (4 males, 7 females) and 12 controls (8 males, 4 females). Using VNG as the gold standard for diagnosing peripheral vestibular disorders, CDP had a sensitivity of 45.45% and specificity of 66.67% with Positive Predictive Value (PPV) of 55.56% and Negative Predictive Value (NPV) of 57.14% in assessing peripheral vestibular disorders among the adults tested. Interestingly, 33.33% of patients with normal VNG may actually have had a vestibular dysfunction that could be detected by CDP.

**Conclusion:** Prospective studies with larger sample sizes utilizing VNG and CDP are recommended in order to verify our findings. **(Authors' abstract)**

**Keywords:** *Medicine, Dizziness, Posturography, Vertigo*

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## Differential activation in somatosensory cortex for different discrimination tasks

*Birbaumer, Niels , Elbert, Thomas , Schweizer, Renate , Braun, Christoph, Taub, Ed*

Maps of the body surface in somatosensory cortex have been shown to be highly plastic, altering their configuration in response to changes in use of body parts. The current study investigated alterations in the functional organization of the human somatosensory cortex resulting from massed practice. Over a period of 4 weeks, subjects were given synchronous tactile stimulation of thumb (D1) and little finger (D5) for 1 hr/d. They had to identify the



orientation of the stimuli. Neuroelectric source localization based on high-resolution EEG revealed that, when subjects received passive tactile stimulation of D1 or D5, the representations of the fingers in primary somatosensory cortex were closer together after training than before. There was also an apparently correlative tendency to anomalously mislocalize near-threshold tactile stimuli equally to the distant finger costimulated during training rather than preferentially to the finger nearest to the finger stimulated in a post-training test. However, when the stimulus discrimination had to be made, neuroelectric source imaging revealed that the digital representations of D1 and D5 were further apart after training than before. Thus, the same series of prolonged repetitive stimulations produced two different opposite effects on the spatial relationship of the cortical representations of the digits, suggesting that differential activation in the same region of somatosensory cortex is specific to different tasks.  
**(Author's abstract)**

**Keywords:** *Medicine, Cortical reorganization, Plasticity, Learning, Somatosensory evoked potentials, Dipole source analysis, Tactile sensation threshold, Human*

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NP

0328

### **Diffuse idiopathic skeletal hyperostosis: a rare cause of dysphagia** *Shahrul, Hitam , Anuar, Khairullah Bin, Brito â€“Mutuyanagam, Su*

Diffuse idiopathic skeletal hyperostosis (DISH) is a disease characterized by massive, non-inflammatory ossification with intensive formation of osteophytes affecting ligaments, tendons and fascia of the anterior part of the spinal column mostly in the middle and lower thoracic regions. However, isolated and predominant cervical spinal involvement may occur. It has predilection for men (65%) over 50 years of age and a prevalence of approximately 15-20% in elderly patients.<sup>1</sup> A CT scan is one of the diagnostic tools. The radiographic diagnostic criteria in the spine include: 1) osseous bridging along the anterolateral aspect of at least four vertebral bodies; 2) relative sparing of intervertebral disc heights with minimal or absent disc degeneration; and 3) absence of apophyseal joint ankylosis and sacroiliac sclerosis.<sup>2</sup> We present a rare case of dysphagia over two years duration due to DISH.  
**(Author's abstract)**

**Keywords:** *Medicine, Diffuse idiopathic skeletal hyperostosis (DISH), Dysphagia, Computed tomography (CT) scan*

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2014,  
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0329

### **The dimensions of the nasal septal cartilage: a preliminary study in adult filipino malay cadavers**

*Galvez, Joseph Amado C. , Pernia, NiÃ±a Eliza R. , Victoria, Franci*

**Objectives:** This study aimed to measure the dimensions of the nasal septal cartilage in adult Filipino Malay cadavers and calculate the cartilage area as well as the amount of graft material that can be harvested from the septal

cartilage.

**Methods:**

**Design:** Descriptive, cross-sectional  
**Setting:** Pamantasan ng Lungsod ng Maynila College of Medicine Anatomy Laboratory  
**Subjects:** Ten preserved adult cadavers dissected within a period from September 2010 to October 2010. The septal cartilages were harvested and the lengths of the cephalic margin, dorsal margin, caudal margin and ventral margin were measured. From these measurements, the total area of the cartilage and the amount of graft material that can be harvested were calculated.

**Results:** The mean length of each margin of the septal cartilage was 25.9mm (cephalic edge), 22.3 mm (dorsal edge), 21.4mm (caudal edge) and 33.1 mm (ventral edge). The area of the septal cartilage had a mean value of 652.5 mm<sup>2</sup>. The amount of septal cartilage which can be harvested had a mean area of 403mm<sup>2</sup>.

**Conclusion:** This study showed a slight decrease in septal cartilage area to 652.5 mm<sup>2</sup> and in available graft material to 403 mm<sup>2</sup>. While this decrease may reflect the apparently smaller noses of native Southeast Asians compared to East Asians and South Asians, the difference in values can also be due to the difference in the number of subjects or in methods of measurement and further studies are recommended to determine the extent of inter-racial variability. **(Authors' abstract)**

**Keywords:** *Medicine, Septal cartilage, Autologous graft, Cephalic margin, Dorsal margin, Caudal margin, Ventral margin*

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2011,  
(Filipiniana Analytics)  
NP

0330

**Discharge properties of juxtacellularly labeled and immunohistochemically identified cholinergic basal forebrain neurons recorded in association with the electroencephalogram in anesthetized rats**

*Alonso, Angel, Manns, Ian D., Jones, Barbara*

Multiple lines of evidence indicate that cholinergic basal forebrain neurons play an important role in the regulation of cortical activity and state. However, the discharge properties of cholinergic cells in relation to the electroencephalogram (EEG) are not yet known. In the present study, cells were recorded in the basal forebrain in association with cortical EEG activity in urethane-anesthetized rats, and their discharge was examined during EEG irregular slow activity and during stimulation-induced cortical activation, characterized by rhythmic slow (theta) and high-frequency (gamma) activities. Recorded cells were labeled with Neurobiotin (Nb), using the juxtacellular technique and identified as cholinergic by immunohistochemical staining for choline acetyltransferase (ChAT). Nb-positive/ChAT-positive neurons were distinctive and significantly different from Nb-positive/ChAT-negative neurons, which were heterogeneous in their discharge properties. All Nb+/ChAT+ cells increased their discharge rate with stimulation, and most shifted from an irregular tonic discharge during EEG slow irregular activity to a rhythmic burst discharge during rhythmic slow activity. The stimulation-induced rhythmic discharge was cross-correlated with the EEG rhythmic slow activity. In some units the rhythmic discharge matched the rhythmic slow activity of the retrosplenial cortex; in others, it matched that of the prefrontal cortex, which occurred at a slower frequency, suggesting that subsets of cholinergic neurons may influence their cortical target areas rhythmically at particular frequencies. Cholinergic basal forebrain neurons thus may evoke and enhance cortical activation via both an increase in rate and a change in pattern to rhythmic bursting that would stimulate rhythmic slow (theta-like) activity in cortical fields during active waking and paradoxical sleep states. **(Author's abstract)**

**Keywords:** *Medicine, Acetylcholine, Bursting, Choline acetyltransferase, Cortical activation, Slow rhythmic activity, Theta, Sleepwake states*

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NP

0331

**Distinct roles of synaptic and extrasynaptic NMDA receptors in excitotoxicity**  
*Tymianski, Michael, MacDonald, John F., Lu, Wei-Yang, Xiong, Zhigang, Sattler*

Excitatory synaptic activity governs excitotoxicity and modulates the distribution of NMDA receptors (NMDARs) among synaptic and extrasynaptic sites of central neurons. We investigated whether NMDAR localization was functionally linked to excitotoxicity by perturbing F-actin, a cytoskeletal protein that participates in targeting synaptic NMDARs in dendritic spines. Depolymerizing F-actin did not affect NMDA-evoked whole-cell currents. However, the number of dendritic NMDAR clusters and the NMDAR-mediated component of miniature spontaneous EPSCs were reduced, whereas the number of AMPA receptor clusters and AMPA receptor-mediated component of EPSCs was unchanged. This selective perturbation of synaptically activated NMDARs had no effect on neuronal death or the accumulation of  $45\text{Ca}^{2+}$  evoked by applying exogenous NMDA or l-glutamate, which reach both synaptic and extrasynaptic receptors. However, it increased survival and decreased  $45\text{Ca}^{2+}$  accumulation in neurons exposed to oxygen glucose deprivation, which causes excitotoxicity by glutamate release at synapses. Thus, synaptically and extrasynaptically activated NMDARs are equally capable of excitotoxicity. However, their relative contributions vary with the location of extracellular excitotoxin accumulation, a factor governed by the mechanism of extracellular neurotransmitter accumulation, not the synaptic activation of NMDARs. (**Author's abstract**)

**Keywords:** *Medicine, NMDA receptors, Actin filament, Latrunculin A, Cytochalasin D, Excitotoxicity, Oxygen glucose deprivation, Cortical neurons*

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0332

**Distinction among neuronal subtypes of voltage-activated sodium channels by  $\mu$ -Conotoxin PIIIA**

*Olivera, Baldomero M., Brehm, Paul, Toledo-Aral, Juan J., Han, Edward, Choi, Deog-Young, Shcherbatko, Anatoly, Rosenbaum, Tamara, Safo, Patrick, Mandel,*

The functional properties of most sodium channels are too similar to permit identification of specific sodium channel types underlying macroscopic current. Such discrimination would be particularly advantageous in the nervous system in which different sodium channel family isoforms are coexpressed in the same cell. To test whether members of the  $\mu$ -conotoxin family can discriminate among known neuronal sodium channel types, we examined six toxins for their ability to block different types of heterologously expressed sodium channels. PIIIA  $\mu$ -conotoxin

blocked rat brain type II/IIA (rBII/IIA) and skeletal muscle sodium current at concentrations that resulted in only slight inhibition of rat peripheral nerve (rPN1) sodium current. Recordings from variant lines of PC12 cells, which selectively express either rBII/IIA or rPN1 channel subtypes, verified that the differential block by PIIIA also applied to native sodium current. The sensitivity to block by PIIIA toxin was then used to discriminate between rBII/IIA and rPN1 sodium currents in NGF-treated PC12 cells in which both mRNAs are induced. During the first 24 hr of NGF-treatment, PN1 sodium channels accounted for over 90% of the sodium current. However, over the ensuing 48 hr period, a sharp rise in the proportion of rBII/IIA sodium current occurred, confirming the idea, based on previous mRNA measurements, that two distinct sodium channel types appear sequentially during neuronal differentiation of PC12 cells. **(Author's abstract)**

**Keywords:** *Medicine, PC12 cells, Ion channel, Sodium current, Growth factor, CNS, PNS*

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NP

0333

### **Dual responses of CNS mitochondria to elevated calcium**

*Brustovetsky, Nickolay, Dubinsky, Janet*

Isolated brain mitochondria were examined for their responses to calcium challenges under varying conditions. Mitochondrial membrane potential was monitored by following the distribution of tetraphenylphosphonium ions in the mitochondrial suspension, mitochondrial swelling by observing absorbance changes, calcium accumulation by an external calcium electrode, and oxygen consumption with an oxygen electrode. Both the extent and rate of calcium-induced mitochondrial swelling and depolarization varied greatly depending on the energy source provided to the mitochondria. When energized with succinate plus glutamate, after a calcium challenge, CNS mitochondria depolarized transiently, accumulated substantial calcium, and increased in volume, characteristic of a mitochondrial permeability transition. When energized with 3 mM succinate, CNS mitochondria maintained a sustained calcium-induced depolarization without appreciable swelling and were slow to accumulate calcium. Maximal oxygen consumption was also restricted under these conditions, preventing the electron transport chain from compensating for this increased proton permeability. In 3 mM succinate, cyclosporin A and ADP plus oligomycin restored potential and calcium uptake. This low conductance permeability was not effected by bongkreikic acid or carboxyatractylate, suggesting that the adenine nucleotide translocator was not directly involved. Fura-2FF measurements of  $[Ca^{2+}]_i$  suggest that in cultured hippocampal neurons glutamate-induced increases reached tens of micromolar levels, approaching those used with mitochondria. We propose that in the restricted substrate environment,  $Ca^{2+}$  activated a low-conductance permeability pathway responsible for the sustained mitochondrial depolarization. **(Author's abstract)**

**Keywords:** *Medicine, Permeability transition, Mitochondria, Fura-2FF, Tetraphenylphosphonium, Calcium, Neurodegeneration*

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0334

## **The effectiveness of intravenous tranexamic acid on blood loss and surgical time during endoscopic sinus surgery: a systematic review**

*Ligon, Jona Minette E. , Almazan, Nativi*

**Objective:** To review the effectiveness of intravenous tranexamic acid in reduction of blood loss, surgical time and field visualization among patients who underwent endoscopic sinus surgery (ESS) for chronic rhinosinusitis (CRS).

### **Methods:**

**Data Sources:** MEDLINE (PubMed), EMBASE, ScienceDirect, HERDIN, and the Cochrane Library.

**Eligibility Criteria:** Randomized controlled trials (RCT) between 2005-2014 that evaluated the effects of tranexamic acid or placebo in patients undergoing ESS for CRS.

**Appraisal and Synthesis Methods:** Articles were selected by 2 independent reviewers and methodological quality was blindly evaluated using a Jadad scale. Data were compiled in tables for analysis of outcome measures (estimated blood loss, length of surgery and intraoperative surgical field visualization).

**Results:** Two trials were included in the study, enrolling 128 patients. One arm of the study had been given tranexamic acid while the other arm was given placebo (saline solution). Results varied for both studies. The summary of the observed difference for blood loss had a standardized mean difference of -51.20 (CI 95 [-59.44, -42.95]) showing that the blood loss in milliliters was less in the tranexamic group compared to saline solution. The summary of the observed difference in surgical time had a standardized mean difference of -19.32 (CI95 [-24.21, -14.43]) showing that the surgical time in minutes was shorter in the tranexamic group compared to saline solution. The secondary outcome on surgical field visualization was not pooled together because the studies used different measurement scales.

**Limitations:** The most important weaknesses of the 2 included studies were the differences in dose of tranexamic acid, scales of measurement of field visibility and age groups of the patients.

**Conclusion:** Tranexamic acid reduced blood loss and shortened surgical time after ESS among patients with CRS. However, the additional benefit of tranexamic acid for better field visualization was not clear. Adverse effects were not considered in this study, however, results support the use of intravenous tranexamic acid intraoperatively as an option for ESS with blood loss as a concern. Further randomized clinical trials and an update on the systematic review will strengthen the evidence on the effectiveness of tranexamic acid for ESS. **(Authors' abstract)**

**Keywords:** *Medicine, Tranexamic acid, Endoscopic sinus surgery, Bleeding time*

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NP

0335

## **Effects of dexamethasone versus saline-impregnated nasal packing on the postoperative outcome of patients with *Chronic rhinosinusitis* and *Nasal polyps* after endoscopic sinus surgery: a randomized controlled trial**

*Campomanes, Benjamin SA. , Promentilla, Shella May A. , Onofre, Rubili*

**Objectives:** To evaluate the effects of Dexamethasone-impregnated absorbable nasal pack versus saline-impregnated nasal packing on postoperative outcome of nasal cavities after endoscopic sinus surgery using the Perioperative Sinus Evaluation Scoring System (POSE) and Lund and Kennedy Endoscopic Scoring System.

**Methods:**

**Design:** Prospective, randomized, double blinded, placebo-controlled trial Setting: Single Center Tertiary Government Hospital Participants: Nineteen (19) patients aged 15 years old and above, diagnosed with chronic rhinosinusitis, with nasal polyposis grade 3, who underwent endoscopic sinus surgery from January 2015 to August 2015

**Results:** Nasal cavities that received postoperative dexamethasone-impregnated nasal packs showed significantly lower POSE scores than placebo on post-op Days 14 (p value 0.0022; 95% CI: -2.113 to -0.5116) as well as lower Lund-Kennedy Scores on post-op day 14 (p value of 0.0180; 95% CI: -2.493 to -0.2571) and day 28 (p value of 0.007; 95% CI: -1.56275 to -0.2832).

**Conclusion:** Dexamethasone-impregnated absorbable nasal packing affords better postoperative outcomes: less edema, crusting, secretions, and synechia, than saline-impregnated absorbable packing in later postoperative days. **(Authors' abstract)**

**Keywords:** *Medicine, Dexamethasone, Endoscopy, Nasal polyp, Nasal cavity, Intranasal absorption*

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2016,  
(Filipiniana Analytics)  
NP

0336

## **Effects of halothane on GABA<sub>A</sub> receptor kinetics: evidence for slowed agonist unbinding** *Pearce, Robert A. , Li, Xi*

Many anesthetics, including the volatile agent halothane, prolong the decay of GABAA receptor-mediated IPSCs at central synapses. This effect is thought to be a major factor in the production of anesthesia. A variety of different kinetic mechanisms have been proposed for several intravenous agents, but for volatile agents the kinetic mechanisms underlying this change remain unknown. To address this question, we used rapid solution exchange techniques to apply GABA to recombinant GABAA receptors ( $\alpha_1\beta_2\gamma_{2s}$ ) expressed in HEK 293 cells, in the absence and presence of halothane. To differentiate between different microscopic kinetic steps that may be altered by the anesthetic, we studied a variety of measures, including peak concentration–response characteristics, macroscopic desensitization, recovery from desensitization, maximal current activation rates, and responses to the low-affinity agonist taurine. Experimentally observed alterations were compared with predictions based on a kinetic scheme that incorporated two agonist binding steps, and open and desensitized states. We found that, in addition to slowing deactivation after a brief pulse of GABA, halothane increased agonist sensitivity and slowed recovery from desensitization but did not alter macroscopic desensitization or maximal activation rate and only slightly slowed rapid deactivation after taurine application. This pattern of responses was found to be consistent with a reduction in the microscopic agonist unbinding rate ( $k_{off}$ ) but not with changes in channel gating steps, such as the channel opening rate ( $\beta$ ), closing rate ( $\alpha$ ), or microscopic desensitization. We conclude that halothane slows IPSC decay by slowing dissociation of agonist from the receptor. **(Author's abstract)**

**Keywords:** *Medicine, GABA, Halothane, Taurine, Synaptic inhibition, Anesthetics, Receptor kinetics*

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JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 3, 899-907  
2000 February,

**The electrogenic sodium bicarbonate cotransporter: developmental expression in rat brain and possible role in acid vulnerability**

*Giuffrida, Raffaella , Xu, Lijun , van Hooft, Johannes A. , Papadopoulos, Marios C. , Giffard, Rona G., Monyer, Ha*

The electrogenic sodium bicarbonate cotransporter (NBC) is expressed in glial cells in the brain and plays an important role in the regulation of both intracellular and extracellular pH. Differential vulnerability to acidosis between neurons and glia has been noted and may contribute to infarction after cerebral ischemia. Ionic substitution studies and inhibition of injury by 4,4'-di-isothiocyanostilbene-2,2'-disulfonic acid suggest that NBC is involved in astrocyte vulnerability to acidic injury. Recently two NBC cDNAs differing in 5'-untranslated and N-terminal coding sequence have been cloned from kidney and pancreas. We cloned one of these cDNAs from rat brain and demonstrate here that the clone is functional by expression in *Xenopus oocytes*. We determined the developmental and regional expression of NBC in the brain by *in situ* hybridization. Expression was observed in the spinal cord at embryonic day 17, whereas expression in brain was first seen at approximately postnatal day 0 (P0), increased at P15, and persisted in the adult brain. Expression was widespread throughout the cerebellum, cortex, olfactory bulb, and subcortical structures. Cellular resolution of the *in situ* hybridization signal and double labeling for glial fibrillary acidic protein were consistent with a glial localization for NBC. Expression of NBC in 3T3 cells that do not normally express this transporter rendered them vulnerable to acid injury. The expression profile suggests that this transporter is critical during the later stages of brain development and could be one of the factors contributing to the different patterns of injury seen in perinatal versus adult cerebral ischemia. **(Author's abstract)**

**Keywords:** *Medicine, Bicarbonate transport, pH regulation, Development, Glial cells, Splice variant, Acid injury, Ischemia*

**Electrophysiological characterization of voltage-gated K<sup>+</sup> currents in cerebellar basket and purkinje cells: Kv1 and Kv3 channel subfamilies are present in basket cell nerve terminals**

*Robertson, Brian , Southan, And*

To understand the processes underlying fast synaptic transmission in the mammalian CNS, we must have detailed knowledge of the identity, location, and physiology of the ion channels in the neuronal membrane. From labeling studies we can get clues regarding the distribution of ion channels, but electrophysiological methods are required to determine the importance of each ion channel in CNS transmission. Dendrotoxin-sensitive potassium channel subunits are highly concentrated in cerebellar basket cell nerve terminals, and we have previously shown that they are responsible for a significant fraction of the voltage-gated potassium current in this region. Here, we further investigate the characteristics and pharmacology of the voltage-dependent potassium currents in these inhibitory nerve terminals and compare these observations with those obtained from somatic recordings in basket and Purkinje cell soma regions. We find that  $\alpha$ -DTX blocks basket cell nerve terminal currents and not somatic currents, and the

IC<sub>50</sub> for  $\alpha$ -DTX in basket cell terminals is 3.2 nM. There are at least two distinct types of potassium currents in the nerve terminal, a DTX-sensitive low-threshold component, and a second component that activates at much more positive voltages. Pharmacological experiments also reveal that nerve terminal potassium currents are also markedly reduced by 4-AP and TEA, with both high-sensitivity (micromolar) and low-sensitivity (millimolar) components present. We suggest that basket cell nerve terminals have potassium channels from both the Kv1 and Kv3 subfamilies, whereas somatic currents in basket cell and Purkinje cell bodies are more homogeneous. **(Author's abstract)**

**Keywords:** *Medicine, Potassium channels, Cerebellum, Synapse, Basket cell, Electrophysiology, Mouse*

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2000 January,  
(Filipiniana Analytics)  
NP

0339

### **Enhanced and impaired attentional performance after infusion of D1 dopaminergic receptor agents into rat prefrontal cortex**

*Everitt, Barry J. , Dalley, Jeffrey W. , Thomas, Kerrie L. , Passetti, Filippo , Granon, Sylvie, Robbins, Trevo*

The role in spatial divided and sustained attention of D1 and D2-like dopamine (DA) receptors in the rat prelimbic medial prefrontal cortex (mPFC) was investigated in a five-choice serial reaction time task. Rats were trained to detect brief flashes of light (0.5–0.25 sec) presented randomly in a spatial array of five apertures. When performance stabilized, animals received bilateral microinfusions of either the D1 DA receptor antagonist SCH 23390, the D1 DA receptor agonist SKF 38393, or the D2 DA antagonist sulpiride into the mPFC. Rats were divided into two groups, with low (<75% correct) and high (>75%) baseline levels of accuracy. Infusions of the D2 receptor antagonist sulpiride had no significant effect on any task variable. SCH 23390 (0.3  $\mu$ g) selectively impaired the accuracy of attentional performance in rats in the high baseline condition. By contrast, SKF 38393 (0.06  $\mu$ g) enhanced the accuracy of attentional performance in the low baseline condition, a lower dose (0.03  $\mu$ g) also increasing the speed of making correct responses. Finally, the beneficial effects of SKF-383893 on choice accuracy were antagonized by SCH 23390 (1.0  $\mu$ g).

The results provide apparently the first demonstration of enhanced cognitive function after local administration of a D1 receptor agonist to the mPFC and suggest dissociable roles of D1 and D2 DA receptors of the mPFC in modulating attentional function. **(Author's abstract)**

**Keywords:** *Medicine, Prefrontal cortex, Attention, Dopamine, Cognition, D1 receptor, D2 receptor, Sulpiride, SKF 38393, SCH 23390*

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JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 3, 1208-1215  
2000 February,  
(Filipiniana Analytics)  
NP

0340



## **The environmental sanitation, hygienic practices and the prevalence of intestinal parasitism among schoolchildren**

*Militante, Ivon Claire S. , Tagra, John Angel , Nuñez, Aldwyn A. , Pelayo, Jerald L. , Abordo,*

This paper presents the prevalence of parasitic infection three weeks after a de-worming process in August 2010 of a community in Valencia, Bukidnon, Philippines. Using mixed methods, the authors obtained data from the 203 schoolchildren and the parents of the infected school children. Thirteen schoolchildren had parasitic infections, and hookworm was the most prevalent parasite observed. This suggests resistant infection or rapid reinfection after the de-worming process. The infection could have occurred especially with the children playing barefooted in contaminated watery areas. The free-living pets that came in and out of their houses could have contributed to the rapid reinfection. The 13 infected children had cough and colds, abdominal pain, manifested pallor, and suffered body weakness. Five of the infected children experienced loss of appetite and four had BMI below the normal range based on the Philippine BMI standards. No differences were found in the environmental sanitation and hygienic practices between those schoolchildren who were (13) and were not (190) infected with parasites. The parents interviewed reacted with wonder, worry, and anger, and received confirmation for their suspicions about their children's condition. They were happy that May 2011 is scheduled for another de-worming procedure. **(Author's abstract)**

**Keywords:** *Medicine, Environmental sanitation, Hygienic practices, Intestinal parasitism, De-worming*

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Asian Journal of Health, Volume No. 1 Issue No. 1, 194-213  
2011,  
(Filipiniana Analytics)  
NP

0341

## **Eosinophilia and incidence of soil-transmitted helminthic infections of secondary students of an indigenous school**

*Emverda, Floricel M. , Sumagaysay, Ja*

The incidence of STHI and its relation to eosinophilia were examined in 74 students of a secondary school for the indigenous people (IP) in Bukidnon, Northern Mindanao, Philippines. After obtaining necessary permission and consent, blood and stool samples were collected and examined. Kato-Katz method was used to determine and quantify helminths. Differential WBC count identified the manifestation of eosinophilia. Incidence of blood eosinophilia among the participants was 58% (43/74) with 12.2% mean eosinophil WBC count. Percentage of eosinophil among infected and non-infected varied significantly ( $p < 0.05$ ), except for *Trichuris* infection. Cumulative morbidity of STHI is 37.8% (28/74) with mean ova count of 1266 EPGF. Females have significantly higher parasite load than males ( $t = 2.663$ ;  $p = 0.015$ ). Single and co-infections occurred among the participants. Occurrence of single infection was 14.7% (11/74) for *Ancylostoma duodenale*, 14.7% (11/74) for *Ascaris lumbricoides*, 1.4% (1/74) for *Trichuris trichura*, 6.8% (5/74) for co-infections. Light infection occurred in 35.1% (26/74) of the participants while 2.7% (2/74) suffered moderate infection. There was a moderate association ( $r = 0.328$ ;  $p = 0.004$ ) between eosinophilia and parasitism. Because STHI aggravate health, IP groups must be ensured of access to health services and health education. Regular implementation of effective helminthic-disease management and prevention programs is crucial to eliminate the prevalence and persistence of STHI in the area. **(Author's abstract)**

**Keywords:** *Medicine, Eosinophilia, Soil-transmitted helminthic infections, Intestinal parasitism, Helminthiasis, Indigenous people, Bukidnon*

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### **Epitheloid hemangioendothelioma of the submandibular region**

*Suhaili Dayangku Norsuhaznah Pengiran , Madhusudan, Parekh Nayan , Ranjit, Peter , Bickle,*

**Objectives:** To present an uncommon cause for a submandibular mass and review of the literature.

**Methods:**

<b>Design:</b>	Case	Report	
<b>Setting:</b>	Tertiary	Government	Hospital
<b>Patient:</b>		One	

**Results:** A 25-year-old lady presented with a painless chronic submandibular swelling. Ultrasound identified a solid mass following which an uncomplicated core biopsy was performed obtaining an accurate pre-operative histopathological diagnosis. Pre-operative arterial embolization of this vascular mass led to a relatively bloodless wide local excision. Radiological imaging for distant metastases was negative.

**Conclusion:** Epitheloid Hemangioendothelioma is an uncommon cause for a submandibular mass. A malignant vascular soft tissue tumor with morphologic characteristics similar to carcinomas, melanomas and epitheloid sarcomas, it has a high rate of metastasis and morbidity when it affects the soft tissues and viscera. Immunohistochemistry provides clues to differentiation and recommended treatment consists of a surgical wide local excision with regional lymph node resection. As there are no established standard therapeutic protocols for this disease due to its rarity, an individual case-by-case approach and follow-up needs to be undertaken. **(Authors' abstract)**

**Keywords:** *Medicine, Epitheloid hemangioendothelioma, Malignant vascular tumor, Submandibular mass*

### **Estrogen selectively regulates spine density within the dendritic arbor of rat ventromedial hypothalamic neurons**

*Flanagan-Cato, Loretta M. , Calizo, Lyng*

Estrogen acts in the hypothalamic ventromedial nucleus (VMH) to promote female sexual behavior. One potential mechanism through which estrogen may facilitate this behavior is by reconfiguring synaptic connections within the VMH. Estrogen treatment increases the number of synapses and dendritic spines in the VMH, but how

this remodeling occurs within the context of the local, behaviorally relevant microcircuitry is unknown. The goal of this study was to localize estrogen-induced changes in spine density within the VMH and relate these to dendritic morphology and the presence of nuclear estrogen receptor. The hypothalami from ovariectomized rats, treated with either vehicle or estradiol, were lightly fixed, and VMH neurons were iontophoretically filled with Lucifer yellow. Confocal microscopy was used to examine neuronal morphology. Estrogen treatment increased dendritic spine density by 48% in the ventrolateral VMH but had no effect on spine density in the dorsal VMH. The primary dendrites of VMH neurons were differentially affected by estrogen. Estrogen treatment increased spine density twofold on the short primary dendrites but did not affect spine density on long primary dendrites. Immunocytochemical staining showed that none of the filled neurons expressed estrogen receptor- $\alpha$ . Thus, although the effect of estrogen on spine density is localized to a VMH subdivision where estrogen receptor is expressed, estrogen treatment induces spines on neurons that lack estrogen receptor. Taken together, our results suggest that the effect of estrogen on ventrolateral VMH spines is selective within the dendritic arbor of a neuron and may be mediated by an indirect, possibly transynaptic, mechanism. **(Author's abstract)**

**Keywords:** *Medicine, Dendritic spines, Estrogen, Female sexual behavior, Lordosis, Lucifer yellow cell filling, VMH*

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JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 4, 1589-1596  
2000 February,  
(Filipiniana Analytics)  
NP

0344

## **Evaluation of mandibular fractures in a tertiary military hospital: a 10-year retrospective study**

*Galvan, Grace Na*

**Objectives:** The study aimed to evaluate mandibular fractures in a tertiary military hospital, to determine the age group in which injury occurred most often, to examine the various mechanisms of injury, to determine the anatomical part of the mandible most frequently affected and to determine if there were significant relationships between the various mechanisms of injury and the different fracture sites.

### **Methods:**

**Design:** Cross-sectional retrospective study  
**Setting:** Tertiary Public Military Hospital

**Patients:** Medical records of 328 active military personnel and their dependents, treated for mandibular fracture at the Department of Otorhinolaryngology – Head and Neck Surgery, Armed Forces of the Philippines Medical Center from January 1999 – December 2009 were retrospectively reviewed for data regarding sex, age, various mechanisms of injury and fractured anatomical part of the mandible. The number of fractures per site according to mechanism of injury was tabulated and prevalence ratios (95% confidence intervals) and p values were computed for the different fracture sites among the various mechanisms of injury. The probability or risk of sustaining fractures in these sites based on mechanism of injury was then computed.

**Results:** The most fractured anatomical part of the mandible was the body (28%), followed by the parasymphysis (24%), angle (17%), symphysis (12%), ramus (8%), condyle (7%), alveolar ridge (3%) and coronoid (1%). There were associated injuries in 54% of those with mandibular fractures. In these patients, zygomaticomaxillary complex fractures occurred in 25%, head and neck abrasions and lacerations in 30%, head injuries in 28%, ocular injuries in 10%, nasal fractures in 8% and cervical spine fractures in 5%. Other injuries present were extremity trauma in 60%, thoracic trauma in 5% and abdominal trauma in 3%. Males dominated with a ratio of 99:1. Males 21 to 30 years of age sustained the most mandible fractures. Most fractures were caused by vehicular accidents (60%), followed by gunshot wounds (31%), falls (4%), violent assault (4%) and sports activities (1%). Alcohol was a contributing factor

at the time of injury in 20.6% of fractures. All cases were treated by open reduction and internal fixation with plating or wiring.

**Conclusion:** The body was the most commonly fractured anatomic region of the mandible in this series. There appeared to be a statistically significant relationship between violent assault and fractures of the ramus, but not between the other mechanisms of injury and the site of fracture. Its prevalence ratio of 3.32 (95% confidence interval: 1.13; 9.74, p value 0.039) suggests that the prevalence of fractures of the ramus among those exposed to violent assault was 3 times higher than those who were not. **(Authors' abstract)**

**Keywords:** *Medicine, Mandibular fractures, Etiology, Maxillofacial injuries, Trauma*

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 26 Issue No. 1, 16-20  
2011,  
(Filipiniana Analytics)  
NP

0345

### **Evidence that brain-derived neurotrophic factor from presynaptic nerve terminals regulates the phenotype of calbindin-containing neurons in the lateral septum**

*Murphy, Richard A. , Sadikot, Abbas F. , Miller, Freda D. , Morris, Stephen J. , Alonso-Vanegas, Mario A. , Fawcett, Ja*

Brain-derived neurotrophic factor (BDNF) is transported anterogradely in neurons of the CNS and can be released by activity-dependent mechanisms to regulate synaptic plasticity. However, few neural networks have been identified in which the production, transport, and effects of BDNF on postsynaptic neurons can be analyzed in detail. In this study, we have identified such a network. BDNF has been colocalized by immunocytochemistry with tyrosine hydroxylase (TH) in nerve fibers and nerve terminals within the lateral septum of rats. BDNF-containing nerve fibers terminate on a population of calbindin-containing neurons in lateral septum that contain TrkB, the high-affinity receptor for BDNF. Overexpression of BDNF in noradrenergic neurons increased levels of calbindin in septum, as well as in whole-brain lysates. Septal levels of calbindin and BDNF partially decreased after unilateral lesions of the medial forebrain bundle (MFB), induced with 6-hydroxydopamine, a treatment that abolished TH staining. These data suggest that BDNF is anterogradely transported within the MFB in catecholaminergic neurons arising from brainstem nuclei. To determine whether BDNF affects the production of calbindin in lateral septal neurons directly, we tested the effects of BDNF on cultures of septal neurons from embryonic day 16–17 rats. BDNF promoted the expression of calbindin, as well as the arborization of calbindin-containing neurons, but BDNF had no effect on cell division or survival. Together, these results suggest that BDNF, anterogradely transported in catecholaminergic neurons, regulates calbindin expression within the lateral septum. **(Author's abstract)**

**Keywords:** *Medicine, BDNF, Calbindin, Catecholaminergic neurons, Septum, Anterograde transport, TrkB*

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2000 January,  
(Filipiniana Analytics)  
NP

0346

## An experimental study on maximum sound output capabilities and preferred listening levels using different earphone types

*Enriquez, Howard M. , De Castro, Roderick B. , Destriza, Waynn N*

**Objective:** The study aims to compare the maximum sound output capabilities of different earphone types/music style combinations. The study also intends to assess the preferred listening levels (PLL) of test subjects using different earphone types with background noise accession. The study also seeks to determine the presence or absence of a threshold shift on headphone/music style combination PLLs that exceed the recommended noise limit.

### Methods:

<b>Design:</b>	Experimental	Study	
<b>Setting:</b>	Tertiary	Government	Hospital

**Subjects:** Thirty (30) hearing healthy volunteers were sampled from hospital staff aged 18-40 years with no known history of ear pathology and/or use of any known ototoxic drugs, with normal otoscopy, audiograms of less than 20dB from 125Hz to 8000Hz and no exposure to loud noise from any source within the previous three days. The sound pressure levels (SPL) delivered by three (3) types of earphones (earbud type, in-ear type, supra-aural type) were measured at maximum volume setting of a personal media player (iPod, Apple Inc.), while playing different music genres. The test subjects were asked to listen at their preferred listening levels (PLL) using the different types of earphones at increasing background noise accession.

**Results:** The earbud type averaged the greatest SPL among the earphone types and pop music averaged the greatest SPL among the music styles. Comparison of the maximum output capabilities revealed that there was a significant difference among different brands of earphones of the same type. However, no significant difference were found among songs of similar music style and across different music styles in all earphones except the in-ear type. PLL average was at 90.4dB in a silent environment with increasing intensity as background noise accentuated. Supra-aural earphones registered the least increase in PLL in a loud environment due to its higher background noise-attenuating capabilities.

**Conclusion:** Having a significant difference among earphone types with regard their maximum output capabilities, it is recommended to check the specifications of the earphone type one intends to use. In using personal media players (PMP), the volume should be set at the lowest comfortable level. While choice of music style remains the discretion of the listener, the choice of music style should be considered for long periods of listening. Because the PLL of test subjects were alarmingly high, the authors recommend intervention in their listening habits. Background noise attenuating capabilities of earphones play a factor in reducing excessive sound energy from reaching the ear reducing the PLL and decreasing the risk for noise induced hearing loss. **(Authors' abstract)**

**Keywords:** *Medicine, Earphones, Music styles, Personal media players, Preferred listening levels, Recreational noise, Noise-induced hearing loss*

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 30 Issue No. 1, 6-13  
2015,  
(Filipiniana Analytics)  
NP

0347

## Expression of neurotrophin-3 (NT-3) and anterograde axonal transport of endogenous NT-3 by retinal ganglion cells in chick embryos

*Butowt, Rafal , von Bartheld, Christop*

Anterograde axonal transport of neurotrophins has been demonstrated recently, but to date such transport has only been shown for brain-derived neurotrophic factor and no other endogenous neurotrophin. Endogenous neurotrophin-3 (NT-3) protein is present in the ganglion cell layer of the chicken retina, as well as the superficial layers of the optic tectum. NT-3 immunolabel in these tectal layers is largely reduced or abolished after treatment of the eye with colchicine or monensin, demonstrating that endogenous NT-3 is transported to the optic tectum by retinal ganglion cells (RGCs). Reverse transcription-PCR analysis of RGCs purified to 100% shows that RGCs, but not tectal cells, express NT-3 mRNA. Blockade of the intercellular transfer of NT-3 within the retina does not reduce the anterograde transport of endogenous NT-3 to the tectum, indicating that a major fraction of the anterogradely transported NT-3 is produced by RGCs rather than taken up from other retinal cells. Immunolabel for the neurotrophin receptor p75, but not trkB or trkC, in the superficial tectum coincides with the NT-3 label. The p75 label in the neuropil of superficial tectal layers is largely reduced or eliminated by injection of monensin in the eye, indicating that p75 protein is exported along RGC axons to the retinotectal terminals and may act as a neurotrophin carrier. These results show that NT-3 is produced by RGCs and that some of this NT-3 is transported anterogradely along the axons to the superficial layers of the tectum, possibly to regulate the survival, synapse formation, or dendritic growth of tectal neurons. **(Author's abstract)**

**Keywords:** *Medicine, Anterograde transport, NT-3, BDNF, Retina, Optic tectum, p75 neurotrophin receptor, Neurotrophic factor, Visual system, RT-PCR*

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JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 2, 736-748  
2000 January,  
(Filipiniana Analytics)  
NP

0348

### **Extramedullary plasmacytoma in the maxillary sinus**

*Llanes, Erasmo Gonzalo DV. , Ricalde, Rosario R. , Claridad, Jose Roberto V. , De Silva-Leonardo, Je*

**Objective:** To describe an intranasal mass initially diagnosed and treated as benign that eventually turned out to be a malignant extramedullary plasmacytoma of the maxillary sinus and to review the literature on its presenting signs and symptoms, diagnosis, management and pathophysiology.

**Methods:**

Design:	Case	Report	
Setting:	Tertiary	Public	Hospital
Patient:			One

**Results:** A 45-year-old male with persistent nasal obstruction and intermittent epistaxis underwent several biopsies of a mass shown on computed tomography scans as heterogeneously enhancing, expansile, occupying the left maxillary sinus with extension into the left nasal cavity with areas of erosion. Immunohistochemical staining was negative for cytokeratin (CK) and leukocyte common antigen (LCA). Complete excision yielded a final histopathologic interpretation of plasmacytoma. Laboratory examinations excluded multiple myeloma. The final diagnosis was extramedullary plasmacytoma and he was treated with post-operative adjuvant radiotherapy.

**Conclusion:** Plasmacytoma may present in the sinu-nasal region and be part of a systemic disease like multiple myeloma. A high index of suspicion and thorough initial histopathological work-up may help in establishing a definitive diagnosis and providing optimum treatment. **(Author's abstract)**

**Keywords:** *Medicine, Plasmacytoma, Plasma cell tumor, Multiple myeloma, Plasma cell myeloma, Extramedullary plasmacytoma*

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0349

### **Extramedullary plasmacytoma of the nasopharynx: a rare tumour with 7-year follow up**

*Mat Ali, Siti Aishah , Gendeh, Balwant Singh , Azman, Ma*

**Objective:** To report a case of extramedullary plasmacytoma, a rare localized tumour involving the head and neck region in a 56-year-old gentleman.

**Methods:**

**Design:** Case Report  
**Setting:** Tertiary University Referral Center  
**Patient:** One

**Result:** The patient presented with a 5-month history of right-sided nasal obstruction and intermittent epistaxis in 2003. Nasal endoscopy revealed a friable, dark red mass arising from the roof of the nasopharynx, occluding the right choana. No invasion of adjacent tissues or cervical lymphadenopathy was evident. A biopsy of the mass was diagnosed as plasmacytoma. Serum and urine electrophoresis failed to detect any monoclonal bands. All other screening tests to rule out multiple myeloma were negative. These findings confirmed the diagnosis of extramedullary plasmacytoma. He received radiotherapy to the nasopharynx of 50 Gy for a total of 23 fractions. No recurrence was noted at 7-year follow-up.

**Conclusion:** Extramedullary plasmacytoma of the nasopharynx represents a tumour with good prognosis but requires long term follow up in anticipation of local recurrence and progression to Multiple Myeloma. **(Authors' abstract)**

**Keywords:** *Medicine, Extramedullary, Plasmacytoma, Nasopharynx*

0350

### **Extranasopharyngeal angiofibroma of the larynx**

*Trinidad, Connie Angel J. , David, Michael Joseph C., Chua, Antonio*

**Objective:** To present a rare case of laryngeal extranasopharyngeal angiofibroma, discussing its diagnosis, treatment and differences from the more typical juvenile angiofibroma.

**Methods:**

**Design:** Case Report  
**Setting:** Tertiary Government Hospital  
**Patient:** One

**Results:** A 51-year-old male with a two-year history of hoarseness developed difficulty of breathing. Direct laryngoscopy showed a 2x2x1cm glistening, multinodular, pedunculated, firm, pink mass attached to the posterior half of the right true vocal fold obstructing the glottic opening and extending superiorly to the ventricle. Microlaryngeal excision was done. Histopathology showing numerous vascular channels surrounded by dense paucicellular fibrous tissue was consistent with angiofibroma.

**Conclusion:** Primary extranasopharyngeal angiofibroma is rare, with only four previously reported cases occurring in the larynx. We presented what may possibly be the first locally reported case. Although histopathologically similar to the more common juvenile nasopharyngeal angiofibroma, this was atypically seen in the larynx of an older adult patient. Direct laryngoscopy provided excellent exposure for identification as well as complete surgical resection. Unlike the nasopharyngeal type, no massive bleeding was encountered. Prognosis for this extranasopharyngeal angiofibroma is excellent as recurrence is noted to be rare, however, long term follow-up is recommended. **(Author's abstract)**

**Keywords:** *Medicine, Extranasopharyngeal angiofibroma, Laryngeal angiofibroma, Larynx*

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 25 Issue No. 1, 23-25  
2010,  
(Filipiniana Analytics)  
NP

0351

### **Factors affecting medication errors among staff nurses: basis in the formulation of medication information guide**

*Dumo, Anndra Margar*

Medication errors seriously affect patient safety, hospital costs and integrity of nursing profession. Proper understanding of the contributing factors that increase medication errors is the first step toward preventing them. The study is quantitative-descriptive type using researcher-made questionnaire. Total enumeration was used involving 210 nurses participated in the study. The data were statistically treated using frequency, percentages, average weighted mean, one way ANOVA, and Pearson r-correlation. Based on the key findings of the study, it found out that professional factors is the number one cause of medication errors, followed by managerial factors, work-related factors, and lastly personal factors. Furthermore, there were identified significant differences between the respondents profile, competency level, and factors affecting medication errors. There was a very-low correlation between respondent competency level and factors affecting medication errors. In conclusion, the longer the hospital experience and the proficient a nurse is in the standards of care on medication management, the higher is the ability of the nurse to handle factors affecting medication errors. The researcher recommended utilization of medication information guide for nurses, self-report logbook, and enhanced course syllabus in Nursing Pharmacology. (Author's abstract)

**Keywords:** *Medicine, Medication, Medication errors, Factors, Patient safety, Self-report, Nurse, Competency, Cause*

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IAMURE International Journal of Health Education, Volume No. 1 Issue No. 1, 88-149  
2012,  
(Filipiniana Analytics)  
NP



### **Fos protein expression and cocaine-seeking behavior in rats after exposure to a cocaine self-administration environment**

*Palmer, Art , Tran-Nguyen, Ly T. L. , Fuchs, Rita A. , Baker, David A. , Neisewander, Janet L., Marshall, Joh*

To examine neuronal activation associated with incentive motivation for cocaine, cocaine-seeking behavior (operant responding without cocaine reinforcement) and Fos expression were examined in rats exposed to saline and cocaine priming injections and/or a self-administration environment. Rats were first trained to self-administer cocaine or received yoked saline administration (“control”). They then received 21 daily exposures to either the self-administration environment (“extinction”) or a different environment (“no extinction”) without cocaine available. Extinction training, used to decrease incentive motivation for cocaine elicited by the self-administration environment, decreased cocaine-seeking behavior elicited by both the environment and the cocaine priming injection. Exposure to the self-administration environment enhanced Fos expression in the no extinction group relative to control and extinction groups in the anterior cingulate, basolateral amygdala, hippocampal CA1 region, dentate gyrus, nucleus accumbens shell and core, and central gray area, regardless of whether or not priming injections were given. The priming injections enhanced Fos expression in the ventral tegmental area, caudate putamen, substantia nigra pars reticulata, entorhinal cortex, central amygdala, lateral amygdala, arcuate nucleus, and central gray area, regardless of group. Thus, these changes likely reflect an unconditioned effect from either cocaine or injection stress. The priming injections also enhanced Fos expression in the anterior cingulate, but only in cocaine-experienced groups, suggesting that this enhancement reflects an experience-dependent motivational effect of the priming injections. The results suggest that different neural circuits may be involved in the incentive motivational effects of cocaine-paired environmental stimuli versus priming injections and that the anterior cingulate may be part of a common pathway for both. **(Author's abstract)**

**Keywords:** *Medicine, Cocaine, Cocaine-seeking behavior, Incentive motivation, Self-administration, Reinstatement, Priming injections, Cocaine conditioning, Cocaine-paired stimuli, Limbic system, Basal ganglia, Amygdala, Anterior cingulate, Fos protein expression, Neuronal activation, Immediate early genes*

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2000 January,  
(Filipiniana Analytics)  
NP

### **Frontolateral laryngectomy with imbrication laryngoplasty for stage I glottic carcinoma**

*Artates, Anne Marg*

Good prognosis has been associated with early detection of Squamous Cell Carcinoma of the larynx. The patient's choice for any treatment modality depends highly on the cure rate, larynx preservation rate, post-treatment voice quality, morbidity, and treatment cost.<sup>1</sup> Regardless of which stage of disease, the choice of treatment centers mainly on the maintenance of quality of life and minimal adverse effects. **(Author's abstract)**

**Keywords:** *Squamous cell carcinoma, Imbrication laryngoplasty, Larynx, Medicine, Frontolateral laryngectomy, Glottic carcinoma*

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 27 Issue No. 1, 31-34  
2012,  
(Filipiniana Analytics)  
NP

## GABA<sub>C</sub> receptors control adaptive changes in a glycinergic inhibitory pathway in salamander retina

*McReynolds, John S. , Lukasiewicz, Peter D. , Cook, P*

We studied the role of GABA in adaptive changes in a lateral inhibitory system in the tiger salamander retina. In dark-adapted retinal slice preparations picrotoxin caused a slow enhancement of glycine-mediated IPSCs in ganglion cells. The enhancement of glycinergic IPSCs developed slowly over the course of 5–20 min, even though picrotoxin blocked both GABA<sub>A</sub> and GABA<sub>C</sub> receptors within a few seconds. The slow enhancement of glycinergic IPSCs by picrotoxin was much weaker in light-adapted preparations. The slow enhancement of glycinergic inhibitory inputs was not produced by bicuculline, indicating that it involved GABA<sub>C</sub> receptors. The responses of ganglion cells to direct application of glycine were not enhanced by picrotoxin, indicating that the enhancement was not caused by an action on glycine receptors. In dark-adapted eyecup preparations picrotoxin caused a slow enhancement of glycinergic IPSPs and transient lateral inhibition produced by a rotating windmill pattern, similar to the effect of light adaptation. The results suggest that the glycinergic inhibitory inputs are modulated by an unknown substance whose synthesis and/or release is inhibited in dark-adapted retinas by GABA acting at GABA<sub>C</sub> receptors. **(Author's abstract)**

**Keywords:** *Medicine, Retina, Adaptation, GABAC receptors, Neuromodulator, Glycine, Salamander*

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JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 2, 806-812  
2000 January,  
(Filipiniana Analytics)  
NP

## Gap arthroplasty of bilateral temporomandibular joint ankylosis

*David, Joselito F. , Guintu, Ferdinand Z. , Laoag, Alexan*

**Objectives:** To present a case of bilateral temporomandibular joint ankylosis that was managed successfully through gap arthroplasty.

**Methods:**

**Design:** Case Report

**Setting:** Tertiary Government Hospital

**Patient:** One

**Results:** A 25-year-old man presented with inability to open his mouth for 18 years after direct trauma to his chin. CT scan showed bilateral bony fusion of condyles to glenoid fossae, hypertrophic sclerosis and fusion of the condylar heads to the temporal bones. He underwent bilateral gap arthroplasty via preauricular approach with creation of a 15 mm space on the mandibular fossa. As of latest follow up, the patient maintained an inter-alveolar distance of 30 mm for five months postoperatively through continuous aggressive mouth opening exercises.

**Conclusion:** Gap arthroplasty may be an efficient procedure for temporomandibular joint ankylosis in achieving satisfactory post-operative inter-alveolar opening and articular function. Early and meticulous rehabilitation is required to prevent relapse. Long-term follow up is recommended to document possible recurrence. **(Authors' abstract)**

**Keywords:** *Medicine, Temporomandibular joint ankylosis, Gap arthroplasty, TMJ ankylosis, Ankylosis*

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 29 Issue No. 2, 28-31  
2014,  
(Filipiniana Analytics)  
NP

0357

### **Gap junctions linking the dendritic network of GABAergic interneurons in the hippocampus**

*Kosaka, Toshio , Fukuda, Ta*

The network of GABAergic interneurons connected by chemical synapses is a candidate for the generator of synchronized oscillations in the hippocampus. We present evidence that parvalbumin (PV)-containing GABAergic neurons in the rat hippocampal CA1 region, known to form a network by mutual synaptic contacts, also form another network connected by dendrodendritic gap junctions. Distal dendrites of PV neurons run parallel to the alveus (hippocampal white matter) and establish multiple contacts with one another at the border between the stratum oriens and the alveus. In electron microscopic serial section analysis, gap junctions could be identified clearly at 24% of these contact sites. A dendrodendritic chemical synapse and a mixed synapse also were found between PV-immunoreactive dendrites. Three-dimensional reconstruction of the dendritic arborization revealed that both PV neurons of the well known vertical type (presumptive basket cells and axoaxonic cells) and those of another horizontal type constitute the dendritic network at the light microscopic level. The extent of dendritic fields of single PV neurons in the lateral direction was  $538 \pm 201 \mu\text{m}$  ( $n = 5$ ) in the vertical type and  $838 \pm 159 \mu\text{m}$  ( $n = 6$ ) in the horizontal type. Our previous and present observations indicate that PV-containing GABAergic neurons in the hippocampus form the dual networks connected by chemical and electrical synapses located at axosomatic and dendrodendritic contact sites, respectively. Gap junctions linking the dendritic network may mediate coherent synaptic inputs to distant interneurons and thereby facilitate the synchronization of oscillatory activities generated in the interneuron network. **(Author's abstract)**

**Keywords:** *Medicine, Gap junctions, GABA, Parvalbumin, Hippocampus, Electron microscopy, Oscillation, Synchronization*

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JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 4, 1519-1528  
2000 February,  
(Filipiniana Analytics)  
NP

0358

### **Giant cell tumor of the maxilla** *Saha, Padmini V. , Sen, Sharmila , Saha, S*

**Objective:** To present a rare case of maxillary swelling; its investigation and management.

**Methods:**

**Design:** Case Report  
**Setting:** Tertiary Government Teaching Hospital  
**Patient:** One

**Results:** A 45-year-old female presented with a right maxillary swelling of six months duration. Radiological investigation revealed a radiolucent lesion arising from the inferior aspect of the right maxilla with no areas of calcification. Incisional biopsy report was consistent with giant cell tumor. The mass was excised via a Weber Ferguson incision under general anesthesia.

**Conclusion:** Though rare, giant cell tumor should be considered as one of the differential diagnosis in cases of maxillary swelling. Adequate surgical excision with long-term follow-up should be the treatment of choice for managing a giant cell lesion of the maxilla. **(Authors' abstract)**

**Keywords:** *Medicine, Maxillary swelling, Giant cell tumor, Maxilla*

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 27 Issue No. 2, 24-27  
2012,  
(Filipiniana Analytics)  
NP

0359

**The glial cell line-derived neurotrophic factor family receptor components are differentially regulated within sensory neurons after nerve injury**

*McMahon, Stephen B. , Phillips, Heidi S. , Priestley, John V. , Michael, Gregory J. , Poulsen, Kris T. , Armanini, Mark P. , Boucher, Timothy J. , Bennett, David L. H., Shelton, Davi*

Glial cell line-derived neurotrophic factor (GDNF) has potent trophic effects on adult sensory neurons after nerve injury and is one of a family of proteins that includes neurturin, persephin, and artemin. Sensitivity to these factors is conferred by a receptor complex consisting of a ligand binding domain (GFR $\alpha$ 1–GFR $\alpha$ 4) and a signal transducing domain RET. We have investigated the normal expression of GDNF family receptor components within sensory neurons and the response to nerve injury.

In normal rats, RET and GFR $\alpha$ 1 were expressed in a subpopulation of both small- and large-diameter afferents projecting through the sciatic nerve [60 and 40% of FluoroGold (FG)-labeled cells, respectively]. GFR $\alpha$ 2 and GFR $\alpha$ 3 were both expressed principally within small-diameter DRG cells (30 and 40% of FG-labeled cells, respectively). Two weeks after sciatic axotomy, the expression of GFR $\alpha$ 2 was markedly reduced (to 12% of sciatic afferents). In contrast, the proportion of sciatic afferents that expressed GFR $\alpha$ 1 increased (to 66% of sciatic afferents) so that virtually all large-diameter afferents expressed this receptor component, and the expression of GFR $\alpha$ 3 also increased (to 66% of sciatic afferents) so that almost all of the small-diameter afferents expressed this receptor component after axotomy. There was little change in RET expression.

The changes in the proportions of DRG cells expressing different receptor components were mirrored by alterations in the total RNA levels within the DRG. The changes in GFR $\alpha$ 1 and GFR $\alpha$ 2 expression after axotomy could be largely reversed by treatment with GDNF. **(Authors' abstract)**

**Keywords:** *Medicine, GDNF receptor expression, GFRA, RET, Axotomy, DRG, Rat*

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2000 January,  
(Filipiniana Analytics)  
NP

0360

### **GluR5 and GluR6 kainate receptor subunits coexist in hippocampal neurons and coassemble to form functional receptors**

*Lerma, Juan , Nieto, M. Angela , Herrera, María T. , Paternain,*

We have performed nonradioactive double *in situ* hybridization to study the expression of glutamic acid decarboxylase and GluR6 or GluR5 subunits in hippocampal slices. Our results indicate that although *GluR6* is primarily expressed by pyramidal cells and dentate granule neurons and *GluR5* is prominently expressed in nonpyramidal cells, there is a significant population of GABAergic interneurons that coexpress the two glutamate receptor subunits. To assess whether the two subunits could coassemble to form heteromeric receptors, we studied the electrophysiological responses when both subunits were coexpressed in HEK293 cells. Responses evoked by rapid application of either glutamate, (RS)- $\alpha$ -amino-3-hydroxy-5-tert-butyl-4-isoxazolepropionic acid (ATPA) (the selective agonist of GluR5 receptors), and AMPA in cells cotransfected with GluR6(R) and GluR5(Q) presented a similar degree of outward rectification. This can only be attributed to the fact that all receptors have at least one GluR6(R) subunit in their structure, conferring outward rectification, and at least one GluR5(Q) subunit to confer sensitivity to ATPA and AMPA. More than 80% of the receptors expressed by a single cell were found to be GluR5/R6 heteromers, presenting different desensitization and gating properties to homomeric R6 receptors. These results lead us to believe that a population of interneurons in the hippocampus express receptors made up of both GluR5 and GluR6 subunits and provide evidence for a greater diversity of kainate receptors in the brain than previously thought, that may account for a higher functional complexity. **(Author's abstract)**

**Keywords:** *Medicine, Heteromeric kainate receptors, Heteromeric glutamate receptor, ATPA, Coassembly, Desensitization, Hippocampus, Interneurons, Coexpression*

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(Filipiniana Analytics)  
NP

0361

### **Granulation tissue mimicking a glomus tumor in a patient with chronic middle ear infection**

*Ong, Kimberly Mae C. , Ricalde, Rosario R. , Carnate, Jr., Jose M. , Guevarra, Patrick John, Manasan, Criston Va*

**Objective:** To present an unusual cause of pulsatile tinnitus, presenting in a young adult suffering from chronic recurrent foul-smelling discharge from the same ear.

**Methods:**

**Design:** Case Report  
**Setting:** Tertiary National University Hospital  
**Patient:** One

**Results:** A 24-year-old woman presented with pulsatile tinnitus on a background of chronic recurrent foul-smelling discharge. Clinico-radiologic findings seemed consistent with a glomus tympanicum coexisting with chronic suppurative otitis media with cholesteatoma. She underwent tympanomastoidectomy with excision of the mass. Histopathologic evaluation revealed the mass to be granulation tissue.

**Conclusion:** Pulsatile tinnitus is rarely associated with chronic middle ear infection. Granulation tissue arising at the promontory may mimic glomus tumors when accompanied with this symptom. Despite this revelation, it would still be prudent to prepare for a possible glomus tumor intraoperatively so that profuse bleeding and complications may be avoided. (**Authors' abstract**)

**Keywords:** *Medicine, Tinnitus, Pulsatile, Otitis media, Suppurative, Glomus tympanicum*

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2016,  
(Filipiniana Analytics)  
NP

0362

## **Hebbian mechanisms revealed by electrical stimulation at developing rat neuromuscular junctions**

*Bellico, Francesco , Tognana, Enrico , Buffelli, Mario , Busetto, Giuseppe, Cangiano, Alb*

Synapse competition and elimination are widespread developmental processes, first demonstrated at neonatal neuromuscular junctions. Action potential activity was long shown to exert a powerful influence, but mechanisms and contribution relative to other factors are still not well understood. Here we show that replacement of natural motoneuronal discharge with synchronous activity suppresses elimination of polyneuronal innervation of myofibers. This requires the simultaneous chronic conduction block (tetrodotoxin) and distal electrical stimulation of motor axons during ectopic synaptogenesis in denervated adult soleus muscle. If in fact chronic stimulation is applied without central block of motor axons, the time course of synapse elimination is as fast as in control muscles undergoing natural activity. Our findings follow the prediction of Hebb's postulate and imply that asynchronous activity drives developmental synapse elimination in muscle. They further suggest that motoneurons could become transiently synchronized during development and regeneration, helping to establish the initial polyneuronal innervation. (Author's abstract)

**Keywords:** *Medicine, Synapse elimination, Synchronous activity, Synaptic competition, Neuromuscular junction, Polyneuronal innervation, Chronic conduction block, Chronic nerve electrical stimulation, Development of neural connections*

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2000,  
(Filipiniana Analytics)  
NP

### **Hepatocyte growth factor/scatter factor is a neurotrophic survival factor for lumbar but not for other somatic motoneurons in the chick embryo**

*Oppenheim, Ronald W. , Gould, Tom W. , Wang, Siwei , Prevet, David , Novak, Krist*

Hepatocyte growth factor/scatter factor (HGF/SF) is expressed in the developing limb muscles of the chick embryo during the period of spinal motoneuron (MN) programmed cell death, and its receptor c-met is expressed in lumbar MNs during this same period. Although cultured motoneurons from brachial, thoracic, and lumbar segments are all rescued from cell death by chick embryo muscle extract (CMX) as well as by other specific trophic agents, HGF/SF only promotes the survival of lumbar MNs. Similarly, treatment of embryos *in ovo* with exogenous HGF/SF rescues lumbar but not other somatic MNs from cell death. Blocking antibodies to HGF/SF (anti-HGF) reduce the effects of CMX on MN survival *in vitro* and decrease the number of lumbar MNs *in vivo*. The expression of c-met on MNs *in vivo* is regulated by a limb-derived trophic signal distinct from HGF/SF. HGF/SF is a potent, select, and physiologically relevant survival factor for a subpopulation of developing spinal MNs in the lumbar segments of the chick embryo. (Author's abstract)

**Keywords:** *Medicine, Cell death, Motoneurons, HGF/SF, Chick embryo, Spinal cord, Trophic factor*

JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 1, 326-337  
2000 January,  
(Filipiniana Analytics)  
NP

### **A highly conserved enhancer in the Dlx5/Dlx6 intergenic region is the site of cross-regulatory interactions between Dlx genes in the embryonic forebrain**

*Rubenstein, John L. R. , Schultz, Joshua R. , Gambarotta, Adrianna , Yu, Guoying , Long, Qiaoming , Park, Byung K. , StA/hmer, Thorsten , Hatch, Gary , Zerucha, Ted, Ekker,*

Four Dlx homeobox genes, Dlx1, Dlx2, Dlx5, and Dlx6 are expressed in the same primordia of the mouse forebrain with temporally overlapping patterns. The four genes are organized as two tail-to-tail pairs, Dlx1/Dlx2 and Dlx5/Dlx6, a genomic arrangement conserved in distantly related vertebrates like zebrafish. The Dlx5/Dlx6 intergenic region contains two sequences of a few hundred base pairs, remarkably well conserved between mouse and zebrafish. Reporter transgenes containing these two sequences are expressed in the forebrain of transgenic mice and zebrafish with patterns highly similar to endogenous Dlx5 and Dlx6 expression. The activity of the transgene is drastically reduced in mouse mutants lacking both Dlx1 and Dlx2, consistent with the decrease in endogenous Dlx5 and Dlx6 expression. These results suggest that cross-regulation by Dlx proteins, mediated by the intergenic sequences, is essential for Dlx5 and Dlx6 expression in the forebrain. This hypothesis is supported by cotransfection and DNA-protein binding experiments. We propose that the Dlx genes are part of a highly conserved developmental pathway that regulates forebrain development. (Author's abstract)

**Keywords:** *Medicine, Diencephalon, Evolution, Homeobox, Mouse, Striatum, Telencephalon, Zebra#64257sh*

JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 2, 709-721  
2000,  
(Filipiniana Analytics)  
NP

### Hoarseness due to cardiovascular disease: two cases of cardiovocal syndrome

Anuar, Khairullah Bin , Baki, Marina Mat , Husin Athar, Primuharsa Putra Sabir, Sani, Abdu

**Objective:** To report two cases of cardiovocal syndrome (or Ortner's syndrome) due to cardiovascular disease.

**Methods:**

<b>Design:</b>	Case	report
<b>Setting:</b>	Tertiary	University Hospital
<b>Subjects:</b>		Two

**Results:** Two patients with Cardiovocal syndrome, one due to an aortic saccular aneurysm and the other due to severe mitral stenosis underwent surgery to correct the underlying cardiovascular disease. Post-operatively, the hoarseness resolved completely in the patient with mitral stenosis but persisted in the patient with aortic saccular aneurysm.

**Conclusion:** Cardiovascular disease should be considered as a differential diagnosis in a patient with hoarseness. A high index of suspicion is needed to make an early diagnosis which can lead to surgical correction of the potentially life-threatening, underlying cardiovascular disease. **(Authors' abstract)**

**Keywords:** *Medicine, Cardiovocal hoarseness, Ortner's syndrome, Cardiovascular disease, Aortic aneurysm, Mitral stenosis*

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2011,  
(Filipiniana Analytics)  
NP

### Hoku cryokinetics for the reduction of pain during the active phase of labor

Bejoc, Jillian A. , Ysmael, Fleoy T. , Alforque, Jose Mari Louis, Elizon, Lagrima

Hoku is located on the medial midpoint of the first metacarpal, within 3 - 4 mm of the web of skin between the thumb and forefinger. The study evaluated the effectiveness of the use of ice massage on the energy meridian point, large intestine 4 (Hoku), during contractions to reduce the woman's perception of labor pain. This one-group, pretest-post test design was instituted among 30 primigravid Cebuano women. The study utilized a 100 mm Visual Analog Scale (VAS) to numerically measure pain levels before and after using ice massage on the left and right hand. Pain response difference being evaluated consisted of four elements: pain before and after ice massage of left hand and pain before and after ice massage of right hand. Results indicated significant pain reduction with a mean difference of 18.93 mm on the left hand and 20.87 cm on the right hand. Hoku Cryokinetics on the left Hoku point highly yield the same analgesic effect with that of the right Hoku point. The study concludes that ice massage on either hand is a cost-efficient, safe, non-invasive, non-pharmacologic and effective method in reducing labor pain. **(Author's abstract)**

**Keywords:** *Medicine, Hoku cryokinetics, Active phase of labor, Reduction of pain, Cebuano women*

Asian Journal of Health, Volume No. 2 Issue No. 1, 54-71  
2012,  
(Filipiniana Analytics)



**Human arm movements described by a low-dimensional superposition of principal components**  
*Sanger, Terence*

A new method for analyzing kinematic patterns during smooth movements is proposed. Subjects are asked to move the end of a two-joint manipulandum to copy a smooth initial target path. On subsequent trials the target path is the subject's actual movement from the preceding trial. Using Principal Components Analysis, it is shown that the trajectories have very low dimension and that they converge toward a linear superposition of the first few principal components. We show similar results for handwriting on an electronic pen tablet. We hypothesize that the low dimensionality and convergence are attributable to combined properties of the internal controller and the musculoskeletal system. The low dimensionality may allow for efficient descriptions of a large class of arm movements. **(Author's abstract)**

**Keywords:** *Medicine, Reaching, Human, Movement, Motor control, Convergence, Principal components, Linearity*

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JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 3, 1066-1072  
2000 February,  
(Filipiniana Analytics)  
NP

**Hyalinizing trabecular tumor of the thyroid gland**  
*Carnate, Jr., Jose M., Te, Vincent*

A 34-year-old woman with a 4-year history of a slowly enlarging thyroid gland underwent a total thyroidectomy. Histologic sections showed multinodular colloid goiter. In addition, a 1.2 centimeter diameter discrete mass with a solid white cut surface was noted within the left lobe. Sections from the left lobe mass show a well-demarcated tumor whose cells are arranged in trabecular and nested growth patterns. (Figure 1) The cells are polygonal to spindly and have ample eosinophilic, slightly granular cytoplasm and oval to angular nuclei that are often grooved. (Figure 2) Hyaline material and a delicate fibrovascular stroma surround the nests and trabeculae, and occasional psammoma bodies are seen. (Figure 3) These features led us to a diagnosis of hyalinizing trabecular tumor. **(Author's abstract)**

**Keywords:** *Medicine, Hyalinizing trabecular tumor, Thyroid gland, Thyroidectomy, Fibrovascular stroma*

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2016,  
(Filipiniana Analytics)  
NP

## Identification and characterization of proSAAS, a granin-like neuroendocrine peptide precursor that inhibits prohormone processing

Levin, Nancy , Richards, Bill , Courchesne, Paul L. , Patterson, Scott D. , Yan, Lin , Qian, Yimei , Curran, Eileen , Sun, Jilin , McKinzie, Audra A. , Fricker, Lloyd D., Mzhavia, Nino , Devi, Lakshmi A. , Douglass, J

Five novel peptides were identified in the brains of mice lacking active carboxypeptidase E, a neuropeptide-processing enzyme. These peptides are produced from a single precursor, termed proSAAS, which is present in human, mouse, and rat. ProSAAS mRNA is expressed primarily in brain and other neuroendocrine tissues (pituitary, adrenal, pancreas); within brain, the mRNA is broadly distributed among neurons. When expressed in AtT-20 cells, proSAAS is secreted via the regulated pathway and is also processed at paired-basic cleavage sites into smaller peptides. Overexpression of proSAAS in the AtT-20 cells substantially reduces the rate of processing of the endogenous prohormone proopiomelanocortin. Purified proSAAS inhibits prohormone convertase 1 activity with an IC50 of 590 nM but does not inhibit prohormone convertase 2. Taken together, proSAAS may represent an endogenous inhibitor of prohormone convertase 1. (Author's abstract)

**Keywords:** *Medicine, Carboxypeptidase E, Prohormone convertase, 7B2, Secretogranin, Chromogranin, Neuropeptide*

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2000,  
(Filipiniana Analytics)  
NP

0370

## Identification of an invariant response: stable contact with schwann cells induces veil extension in sensory growth cones

Tosney, Kathryn W. , Balazovich, Kenneth , Polinsky, M

Growth cones sense cues by filopodial contact, but how their motility is altered by contact remains unclear. Although contact could alter motile dynamics in complex ways, our analysis shows that stable contact with Schwann cells induces motility changes that are remarkably discrete and invariant. Filopodial contact invariably induces local veil extension. Even when contacts are brief, veils always extend before the filopodia retract. Contact at filopodial tips suffices for induction. Moreover, veils extend significantly sooner than on filopodia contacting laminin, which often detach without extending veils. The overall behavioral responses of the growth cone, such as increased area and turning, result from integrating multiple discrete responses. Cycles of veil induction enlarge the growth cone and often lead it onto the cell. Invariant veil induction is abolished by blocking *N*-cadherin signaling. We propose an axonal guidance model in which different guidance cues act by inducing different but discrete and invariant responses. (Author's abstract)

**Keywords:** *Medicine, Axonal guidance mechanisms, Filopodia, G-proteins, Growth cones, Guidance cues, N-cadherin, Pathfinding mechanisms, Schwann-neurite interactions, Sensory neuron guidance, Veils*

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JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 3, 1044-1055  
2000 February,  
(Filipiniana Analytics)  
NP

0371

## Immune deficiency in mouse models for inherited peripheral neuropathies leads to improved myelin maintenance

Schachner, Melitta , Toyka, Klaus V. , Gold, Ralf , Zielasek, J rgen , Oehen, Stephan , Bootz, Frank , Stienekemeier, Martina , Schmid, Christoph D., Martini, Rud

The adhesive cell surface molecule P<sub>0</sub> is the most abundant glycoprotein in peripheral nerve myelin and fulfills pivotal functions during myelin formation and maintenance. Mutations in the corresponding gene cause hereditary demyelinating neuropathies. In mice heterozygously deficient in P<sub>0</sub> (P<sub>0</sub><sup>+/-</sup> mice), an established animal model for a subtype of hereditary neuropathies, T-lymphocytes are present in the demyelinating nerves. To monitor the possible involvement of the immune system in myelin pathology, we cross-bred P<sub>0</sub><sup>+/-</sup> mice with null mutants for the recombination activating gene 1 (RAG-1) or with mice deficient in the T-cell receptor  $\alpha$ -subunit. We found that in P<sub>0</sub><sup>+/-</sup> mice myelin degeneration and impairment of nerve conduction properties is less severe when the immune system is deficient. Moreover, isolated T-lymphocytes from P<sub>0</sub><sup>+/-</sup> mice show enhanced reactivity to myelin components of the peripheral nerve, such as P<sub>0</sub>, P<sub>2</sub>, and myelin basic protein. We hypothesize that autoreactive immune cells can significantly foster the demyelinating phenotype of mice with a primarily genetically based peripheral neuropathy. **(Author's abstract)**

**Keywords:** *Medicine, Charcot-marie-tooth disease, Myelin degeneration, Schwann cell, P0, Myelin protein zero, Immune system, Immune deficiency, T-lymphocytes, Macrophages, Electron microscopy, Electrophysiology*

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2000 January,  
(Filipiniana Analytics)  
NP

0372

## Implications of all-or-none synaptic transmission and short-term depression beyond vesicle depletion: a computational study

Wang, Xiao-Jing , Matveev,

The all-or-none character of transmission at central synapses is commonly viewed as evidence that only one vesicle can be released per action potential at a single release site. This interpretation is still a matter of debate; its resolution is important for our understanding of the nature of quantal response. In this work we explore observable consequences of the univesicular release hypothesis by studying a stochastic model of synaptic transmission. We investigated several alternative mechanisms for the all-or-none response: (1) the univesicular release constraint realized through lateral inhibition across presynaptic membrane, (2) the constraint of a single releasable vesicle per active zone, and (3) the postsynaptic receptor saturation.

We show that both the univesicular release constraint and the postsynaptic receptor saturation lead to a limited amount of depression by vesicle depletion, so that depletion alone cannot account for the strong paired-pulse depression observed at some cortical synapses. Although depression can be rapid if there is only one releasable vesicle per active zone, this scenario leads to a limit on the transmission probability. We evaluate additional mechanisms beyond vesicle depletion, and our results suggest that the strong paired-pulse depression may be a result of activity-dependent inactivation of the exocytosis machinery.

Furthermore, we found that the statistical analysis of release events, in response to a long stimulus train, might allow one to distinguish experimentally between univesicular and multivesicular release scenarios. We show that without the univesicular release constraint, the temporal correlation between release events is always negative, whereas it is typically positive with such a constraint if the vesicle fusion probability is sufficiently large. **(Authors' abstract)**

**Keywords:** *Medicine, Central synapse, Short-term depression, Exocytosis, Univesicular release, Receptor saturation, Stochastic model*

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2000 February,  
(Filipiniana Analytics)  
NP

0373

### **An improvised tracheotomy speaking valve**

*Lim, KWilliam S. , Delovino, Kirt*

**Objective:** To design and test an improvised tracheotomy speaking valve fabricated from recycled parts of an anesthesia airway breathing circuit.

**Methods:**

**Design:** Surgical Instrumentation

**Setting:** Tertiary Private Hospital

**Subjects:** Speaking valves fabricated from discarded anesthesia breathing circuit parts were pilot-tested on three patients: one with vocal fold paralysis, another with a supraglottic mass and one post hemi-laryngectomy.

**Results:** The improvised tracheotomy speaking valve was inexpensive and relatively easy to assemble. All three patients tolerated speech well through the speaking valve and were pleased to reestablish their means of verbal communication. Maximum Phonation Time (MPT) averaged 8 seconds for all three subjects.

**Conclusion:** In our local setting, improving the quality of life of tracheotomized patients should be accessible to all, hence the value of an improvised speaking valve. It provides a more affordable means of restoring speech and because it is made from recycled materials, it is ecofriendly. Our improvised speaking valve is also a cheaper but viable alternative to more expensive commercially available ones. Clinical trials with standardized feedback questionnaires, multiobserver perceptual evaluation with a system such as the GRBAS and/or vocal acoustic measures in a speech laboratory should be made to assess long term use, efficiency and safety measures. **(Authors' abstract)**

**Keywords:** *Medicine, Tracheotomy, Tracheostomy, Speaking valve, Speaking device*

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 27 Issue No. 2, 26-31  
2012,  
(Filipiniana Analytics)  
NP

0374

### ***In vitro* antibacterial activity of Mometasone furoate, Fluticasone propionate and Fluticasone furoate nasal preparations against *Streptococcus pneumoniae*, *Hemophilus***

***influenzae, Streptococcus viridans, Staphylococcus aureus, Pseudomo***  
***Agbay, Rose Lou Marie C. , Liu, Philip Lance A. , Castañeda, Saman***

**Objective:** To test the antibacterial properties of three commercially available nasal corticosteroid preparations containing Mometasone Furoate (MF), Fluticasone Propionate (FP) and Fluticasone Furoate (FF) against *S. pneumoniae*, *S. viridans*, *S. aureus*, *H. influenza*, *P. aeruginosa* and *E. coli*.

**Methods:**

**Study Design:** Experimental *in vitro* study using the disc diffusion method. Clinical isolates of *Streptococcus pneumoniae*, *Hemophilus influenzae*, *Streptococcus viridans*, *Staphylococcus aureus*, *Pseudomonas aeruginosa*, and *Escherichia coli* were inoculated on separate plates. 0.15 ml of nasal corticosteroid preparations containing MF, FP and FF were applied to blank paper discs, then placed on the plates, including an empty disc. Following 24 and 48 hours of incubation, the inhibition zones were measured to the nearest mm from the point of abrupt inhibition of growth.

**Results:** After 24 and 48 hours of incubation, *S. pneumoniae*, *S. viridans*, and *S. aureus* showed inhibition zones to all three preparations. *S. aureus* and *S. viridans* show the largest zones of inhibition at 24 and 48 hours respectively. *H. influenza*, *P. aeruginosa* and *E. coli* were negative. The inhibition zones of each bacteria were shown to be statistically different. The preparation containing FP had the largest zone of inhibition at 24 and 48 hours, although *post hoc* tests showed their difference was not significant.

**Conclusion:** The present study demonstrates possible antimicrobial properties of commercially available nasal corticosteroid preparations. However, it is unclear whether these can be attributed to the steroids, their excipients, or both. Further studies testing each component may offer better insights into their therapeutic use. **(Author's abstract)**

**Keywords:** Medicine, Mometasone furoate, Fluticasone propionate, Fluticasone furoate, Antibacterial, Nasal corticosteroids, Allergic rhinitis, Acute bacterial rhinosinusitis

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 25 Issue No. 1, 13-16  
2010,  
(Filipiniana Analytics)  
NP

0375

***Inflammatory pseudotumor of the maxillary sinus***  
***Delovino, Kirt Areis , Concepcion, Jeffrey S. , Castañeda, Johann F. , Ramirez, Jr., Rica***

Inflammatory pseudotumor (IPT) is a rarely occurring lesion with no identifiable local or systemic cause. First described in 1905 by Birch-Hirschfeld,<sup>1</sup> it remains somewhat of an enigmatic disease entity despite multiple otolaryngologic, radiologic and pathologic reports. The term "pseudotumor" was used because these lesions mimic invasive malignant tumors both clinically and radiologically. IPT most commonly involves the lung and orbit but has also been reported to occur at sites that make biopsy or excision difficult or potentially disfiguring.<sup>2</sup> Its diagnosis and prompt recognition may help avoid radical surgery for this benign lesion. **(Author's abstract)**

**Keywords:** Medicine, Inflammatory pseudotumor, Maxillary sinus, Pseudotumor

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2009,  
(Filipiniana Analytics)  
NP

***Informed consent in patients undergoing ENT surgery: what do patients want to know?***  
*lal Shrestha,*

**Objective:** To determine patient satisfaction with the informed consent process in ear, nose and throat (ENT) diseases requiring surgery. Specifically, to determine relationships between educational levels of patients and their satisfaction with information given by doctors versus self-gathered information; whether complications of the operation were explained to, and could be listed by patients; the types of complications patients expected to be informed about and the importance of this information to them; their familiarity with the term “informed consent” and their preference for written or spoken information; and whether they were convinced about what they consented to.

**Methods:**

<b>Design:</b>	Cross-sectional	Descriptive	study
<b>Setting:</b>	Tertiary	Public	Hospital
<b>Population:</b>	One		Hundred

**Results:** There were 55 males and 45 females (average age 26.7 years, range 4 - 74 years). Ten percent (all children) had no formal education, 56% had primary to high school education, 23% had certificate level education and 11% had a baccalaureate or master’s degree. Ninety-five percent claimed they knew what informed consent was. Ninety percent were satisfied with the information given to them by doctors. Eighty percent, mainly with educational levels of high school and above preferred to receive written information from doctors. Twenty three percent accessed other sources of information. Those with certificate level education talked with previously operated patients (10%) or read magazines (2%) while the internet was favored by almost all of those with baccalaureate degrees (8%) and all those with master’s degrees (2%). Of those who accessed self-gathered information, 21% were not satisfied while only 2% were satisfied. Seventy percent considered the information given by doctors very important. Similarly, seventy percent (mostly from the higher educational levels) considered the impact of information provided by the doctor completely convincing for decision making while 30% (mostly from lower educational levels) only found the information partly convincing. Forty nine percent (again from the lower educational levels) could not list even a single complication. Nineteen percent with educational levels of certificate and above wanted to know all complications of surgery including those that were very rare while 56% wanted to know most of the complications.

**Conclusion:** We should not underestimate the importance of the outpatient consultation, the importance of written material and non-medical information sources as patients’ expectations are quite high and the majority of them want to be informed about most complications. We should also find ways to improve the provision of patient information where possible and appropriate as per specific patient groups. **(Authors’ abstract)**

**Keywords:** Medicine, Informed consent, Otorhinolaryngology, Surgical procedures

***An initial survey of Septorhinoplasty in crooked nose deformities***  
***Villafuerte, Jr., Cesar V. , Dy, Alexander Edward S. , Lapena, Jose Floren***

**Objective:** Crooked nose deformity is a commonly seen reason for septorhinoplasty in the otolaryngology clinic. The purpose of this study is to initially determine the different etiologies of patients with crooked nose deformities who underwent septorhinoplasty, and to describe the different types of crooked nose by their level of deviation and surgical management in our institution.

**Methods:**

**Design:** Case Series

**Setting:** Tertiary Public University Hospital

**Participants:** A chart review of all patients with a crooked nose deformity who were admitted at the otorhinolaryngology ward of the National University Hospital and underwent septorhinoplasty from January 2012 to January 2015 was conducted, and data consisting of age, sex, etiology of crooked nose deformity, level of deviation, cartilage source, and surgical intervention were obtained and analyzed.

**Results:** A total of 21 patients underwent septorhinoplasty for crooked nose deformity in the study period. The most common etiology for crooked nose was physical violence (13/21 or 62%), followed by sports injury (4/21 or 19%), vehicular accidents (2/21 or 9%), and accidental fall (1/21 or 5%). There were more upper and middle third deviations than lower third deviations. Sixteen out of 21 patients (76%) underwent open rhinoplasty, while the rest underwent an endonasal approach. Twelve (57%) underwent intervention on the nasal fracture after at least a year (old or neglected fracture) as compared to the 9 (43%) who had immediate intervention after less than two weeks. Thirteen used septal cartilage, while 4 used conchal cartilage, and 1 used tragal cartilage. The most common grafts used were spreader and camouflage, followed closely by dorsal onlay, and columellar strut grafts.

**Conclusions:** The majority of crooked nose deformities that were subjected to septorhinoplasty in our department were secondary to old nasal bone fractures caused by physical violence. Upper and middle third level deviations were more common, and most underwent open rhinoplasty with autologous cartilage grafts. Future studies may increase our understanding of, and improve our techniques in septorhinoplasty for crooked nose deformities in Filipino noses in particular, and Asian noses in general. **(Authors' abstract)**

**Keywords:** Medicine, Rhinoplasty, Deviated nose, Crooked nose, Septorhinoplasty, Nasal trauma

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 31 Issue No. 1, 31  
2016,  
(Filipiniana Analytics)  
NP

0378

***Insulin-like growth factor-I protects axotomized rat retinal ganglion cells from secondary death via PI3-K-dependent akt phosphorylation and inhibition of caspase-3 in vivo***  
***BÄhr, Mathias , Labes, Monika , KlÄcker, Nikolaj , Kermer,***

Recently we have shown that the majority of retinal ganglion cells (RGCs) dies via activation of caspase-3 after transection of the optic nerve (ON) in the adult rat. In the present study we investigated whether insulin-like growth factor-I (IGF-I), an important factor in retinal development, prevents secondary death of RGCs after axotomy. Moreover, we studied potential intracellular mechanisms of IGF-mediated neuroprotection in more detail. Our results indicate that intraocular application of IGF-I protects RGCs from death after ON transection in a dose-

dependent manner. We show reduced caspase-3 activity as one possible neuroprotective mechanism of IGF-I treatment in vivo. Caspase-3 mRNA expression remained unchanged. Because caspase inhibition can be mediated by Akt in vitro, we examined phosphorylation of Akt after axotomy and under IGF treatment. Western blot analysis revealed decreased Akt phosphorylation after axotomy without treatment and an increased phosphorylation of Akt under treatment with IGF-I. This strong increase could be reduced by simultaneous injection of wortmannin (WM), a potent inhibitor of phosphatidylinositol 3-kinase (PI3-K). To prove the pathway suggested by these experiments as relevant for the in vivo situation, we assessed the number of RGCs 14 d after ON transection under a combined treatment strategy of IGF-I and WM. As expected, WM significantly reduced the neuroprotective effects of IGF-I. In summary, we show for the first time in vivo that IGF is neuroprotective via PI3-K-dependent Akt phosphorylation and by inhibition of caspase-3. (Author's abstract)

**Keywords:** Medicine, Insulin-like growth factor-I, Retinal ganglion cells, Neuroprotection, PKB/Akt, PI3-K, Caspase-3, Apoptosis

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*JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 2, 722-728*  
2000,  
(Filipiniana Analytics)  
NP

0379

***Intercellular communication in spinal cord astrocytes: fine tuning between gap junctions and P2 nucleotide receptors in calcium wave propagation***

***Spray, David C. , Suadicani, Sylvia O. , Scemes,***

Electrophysiological properties of gap junction channels and mechanisms involved in the propagation of intercellular calcium waves were studied in cultured spinal cord astrocytes from sibling wild-type (WT) and connexin43 (Cx43) knock-out (KO) mice. Comparison of the strength of coupling between pairs of WT and Cx43 KO spinal cord astrocytes indicates that two-thirds of total coupling is attributable to channels formed by Cx43, with other connexins contributing the remaining one-third of junctional conductance. Although such a difference in junctional conductance was expected to result in the reduced diffusion of signaling molecules through the Cx43 KO spinal cord syncytium, intercellular calcium waves were found to propagate with the same velocity and amplitude and to the same number of cells as between WT astrocytes. Measurements of calcium wave propagation in the presence of purinoceptor blockers indicate that calcium waves in Cx43 KO spinal cord astrocytes are mediated primarily by extracellular diffusion of ATP; measurements of responses to purinoceptor agonists revealed that the functional P2Y receptor subtype is shifted in the Cx43 KO astrocytes, with a markedly potentiated response to ATP and UTP. Thus, the reduction in gap junctional communication in Cx43 KO astrocytes leads to an increase in autocrine communication, which is a consequence of a functional switch in the P2Y nucleotide receptor subtype. Intercellular communication via calcium waves therefore is sustained in Cx43 null mice by a finely tuned interaction between gap junction-dependent and independent mechanisms. (Author's abstract)

**Keywords:** Medicine, Glia, Connexin, Purinoceptor, Calcium waves, Spinal cord, Connexin43, Knock-out mice

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2000 February,  
(Filipiniana Analytics)  
NP

0380



## **Intermediate zone cells express calcium-permeable AMPA receptors and establish close contact with growing axons**

**MÃ©tin, Christine, Denizot, Jean-Pierre , Ropert, Nic**

Recent studies have shown that cells in the intermediate zone (IZ) of the embryonic neocortex originate in the basal telencephalon and migrate tangentially in the cortical wall (Anderson et al., 1997; Tamamaki et al., 1997; Wichterle et al., 1999). We had previously observed growing cortical axons closely apposed to calbindin-positive, tangentially oriented cells in the IZ (MÃ©tin and Godement, 1996), and it has been shown that neurites in the IZ express a glutamate transporter (Furuta et al., 1997). To test if glutamate released by corticofugal growth cones could influence the tangential IZ cells, we characterized the glutamate receptors expressed by IZ cells using patch-clamp techniques, histochemical labeling, and immunostaining on slices of embryonic mice forebrain. We show that tangential IZ cells express inwardly rectifying kainate responses, but not NMDA responses, and accumulate cobalt after AMPA receptor activation. We conclude that IZ cells express calcium-permeable AMPA receptors. This property correlates with our observation that the GluR2 subunit is not expressed in the IZ. AMPA receptors are activated by a millimolar concentration of glutamate. To know whether this high level of glutamate could occur at the surface of IZ cells, we examined contacts made by corticofugal growth cones and calbindin-positive IZ cells using electron microscopy. We show vesicle-containing neurites tightly apposed to calbindin-positive IZ cells over remarkably long length. This suggests that glutamate released by growing corticofugal axons could reach high concentrations close to AMPA receptors of tangential IZ cells and efficiently activate them to control the intracellular calcium in embryonic IZ cells. (Authors' abstract)

**Keywords:** Medicine, Cortex, Development, Tangential migration, Cortical plate, Glutamate, Calcium permeability, Cyclothiazide, LY303070, GYKI 53784, GABA, GABAA, Receptors, Mouse

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*JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 2, 696-708*  
2000,  
(Filipiniana Analytics)  
NP

**0381**

## **Interplay between facilitation, depression, and residual calcium at three presynaptic terminals**

**Regehr, Wade G. , Kreitzer, Anatol C. , Dittman, Jer**

Synapses display remarkable alterations in strength during repetitive use. Different types of synapses exhibit distinctive synaptic plasticity, but the factors giving rise to such diversity are not fully understood. To provide the experimental basis for a general model of short-term plasticity, we studied three synapses in rat brain slices at 34°C: the climbing fiber to Purkinje cell synapse, the parallel fiber to Purkinje cell synapse, and the Schaffer collateral to CA1 pyramidal cell synapse. These synapses exhibited a broad range of responses to regular and Poisson stimulus trains. Depression dominated at the climbing fiber synapse, facilitation was prominent at the parallel fiber synapse, and both depression and facilitation were apparent in the Schaffer collateral synapse. These synapses were modeled by incorporating mechanisms of short-term plasticity that are known to be driven by residual presynaptic calcium ( $Ca_{res}$ ). In our model, release is the product of two factors: facilitation and refractory depression. Facilitation is caused by a calcium-dependent increase in the probability of release. Refractory depression is a consequence of release sites becoming transiently ineffective after release. These sites recover with a time course that is accelerated by elevations of  $Ca_{res}$ . Facilitation and refractory depression are coupled by their common dependence on  $Ca_{res}$  and because increased transmitter release leads to greater synaptic depression. This model captures the behavior of three different synapses for various stimulus conditions. The interplay of facilitation and depression dictates synaptic strength and variability during repetitive activation. The resulting synaptic plasticity transforms the timing of presynaptic spikes into varying postsynaptic response amplitudes. (Author's abstract)

**Keywords:** *Medicine, Short-term plasticity, Residual calcium, Cerebellar granule cell, Cerebellar Purkinje cell, Climbing fiber, Schaffer collateral, Hippocampal CA1 pyramidal cel, Synaptic model*

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*JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 4, 1374-1385*  
2000 February,  
(Filipiniana Analytics)  
NP

0382

***Interstitial cells of cajal mediate Cholinergic neurotransmission from enteric motor neurons***  
***Sanders, Kenton M. , Khoyi, Mohammad , Baker, Fred , Wang, XuanYu , Beckett, Elizabeth A. H. , Ward, S***

*Interstitial cells of Cajal (ICC) are interposed between enteric neurons and smooth muscle cells in gastrointestinal muscles. The role of intramuscular ICC (IC-IM) in mediating enteric excitatory neural inputs was studied using gastric fundus muscles of wild-type animals and  $W/W^v$  mutant mice, which lack IC-IM. Excitatory motor neurons, labeled with antibodies to vesicular acetylcholine transporter or substance-P, were closely associated with IC-IM. Immunocytochemistry showed close contacts between enteric neurons and IC-IM. IC-IM also formed gap junctions with smooth muscle cells. Electrical field stimulation yielded fast excitatory junction potentials in the smooth muscle that were blocked by atropine. Neural responses were greatly reduced in muscles of  $W/W^v$  animals. Loss of cholinergic responses in  $W/W^v$  muscles seemed to be caused by the loss of close synaptic contacts between motor neurons and IC-IM, because these muscles were not less responsive to exogenous acetylcholine than were wild-type muscles.  $W/W^v$  muscles also responded to excitatory nerve stimulation when the breakdown of acetylcholine was blocked by neostigmine. The density of cholinergic nerve bundles within the muscles was not significantly different in wild-type and  $W/W^v$  muscles, and similar amounts of  $^4[C]$ choline were released from preloaded wild-type and  $W/W^v$  muscles in response to nerve stimulation. The impact of losing IC-IM on gastric compliance was also evaluated in intact stomachs. Pressure increased as a function of fluid volume and infusion rate in wild-type animals, but  $W/W^v$  animals showed little basal tone and minimal increases in pressure with fluid infusions. These data suggest that IC-IM play a major role in receiving cholinergic excitatory inputs from the enteric nervous system in the murine fundus. (Author's abstract)*

**Keywords:** *Medicine, Interstitial cells of Cajal, Enteric nervous system, Cholinergic neurotransmission, Neuromuscular junction, Acetylcholinesterase, Gastrointestinal tract*

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*JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 4, 1393-1403*  
2000 February,  
(Filipiniana Analytics)  
NP

0383

***Intraparotid facial nerve schwannoma with temporal bone extension***  
***Malanyaon, Jose A. , De Guzman, Thanh Vu T. , Laoag, Alexander T. , Castañeda, Samantha S. , Chua, Anto***

**Objective:** *To present a rare case of facial schwannoma manifesting as a parotid mass and discuss its diagnosis and treatment.*

**Methods:**

**Design:** Case Report  
**Setting:** Tertiary Government Hospital  
**Patient:** One

**Results:** A 48-year-old female was seen for a 2-year progressive left hemifacial paralysis and a 5-month gradually enlarging left infraauricular mass with episodes of tinnitus but intact hearing and balance. Physical examination showed a left-sided House-Brackmann grade VI facial paralysis and a 5 x 4 x 3 cm soft, ill-defined, slightly movable, non-tender, left infraauricular mass. Gadolinium-enhanced magnetic resonance imaging revealed a 5 cm heterogeneously enhancing lobulated mass centered within the deep lobe of the left parotid gland extending to the left mastoid, with facial nerve involvement. A diagnosis of a facial nerve tumor, probably a schwannoma, was entertained. Pure tone audiometry revealed normal hearing thresholds for both ears with dips at 6-8 KHz on the left. The patient underwent total parotidectomy with facial nerve tumor resection via transmastoid approach, with simultaneous facial – hypoglossal nerve anastomosis reconstruction. Histopathologic findings confirmed the diagnosis of a schwannoma. Postoperative facial function was Grade VI. Hearing and hypoglossal nerve function were preserved.

**Conclusion:** A progressive hemifacial paralysis of chronic duration with or without the presence of an infra-auricular mass should raise the suspicion of a facial nerve tumor. Gadolinium-enhanced magnetic resonance imaging is valuable since intraparotid facial nerve schwannomas are mostly diagnosed intraoperatively when the neoplasm and the nerve are exposed and determined to be contiguous. The clinician should be aware that not all parotid masses are salivary gland in origin. (**Authors' abstract**)

**Keywords:** Medicine, Intraparotid facial nerve schwannoma, Facial nerve paralysis, Parotid mass

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2012,  
(Filipiniana Analytics)  
NP

0384

### **Investigating the protective effect of *Solanum melongena* Gul, Humaira , Gul, Saima , Ahmed, Sagheer , Kaneez, Fatim**

The aim of this study is to investigate the protective effect of *Solanum melongena* (*S. Melongena*). Different solvent were used to extract the fractions. Antiplatelet activity was monitored using dual channel Lumi aggregometer, antioxidant enzymes were measured using kits purchased from RANDOX, UK while calcium channel blocking activity was screened on guinea pig ileum using isolated organ bath assembly. Aqueous fraction, Ethyl acetate fraction and Chloroform fraction potently inhibited platelet aggregation, antioxidant and calcium channel blocking activity respectively. These results indicated that all fractions of *S. Melongena* possesses antioxidant properties but aqueous fraction posses both AA and PAF antiplatelet activity and chloroform fraction acts as calcium channel blocker. We hypothesized that fractionation process may be responsible for the modification of the active compounds present in the extracts of *S. Melongena* and hence for their respective properties. Moreover, PAF aggregation cycle molecules which are involved in blocking may not be soluble either in ethyl acetate or chloroform. (**Author's abstract**)

**Keywords:** Medicine, *Solanum melongena*, Platelet aggregation, Antioxidant, Calcium channel blockers, Traditional medicine

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**Juvenile angiofibroma protruding from the nasal cavity**  
**Fong, Voon Hoong, Yunus, Mohd Razif M**

**Objective:** To describe a case of juvenile angiofibroma with unusual protrusion out of the nasal cavity, and its management with surgery and radiotherapy.

**Methods:**

**Design:** Case Report

**Setting:** Tertiary Public Referral Centre

**Patient:** One

**Results:** A 17-year-old gentleman presented with a huge tumor protruding from his left nostril, diagnosed with juvenile angiofibroma stage IIIA by MRI and angiography. Following successful pre-operative embolization, the protruding mass was ligated and truncated, followed by surgical resection via external approach. Post-operative residual tumor was treated with adjuvant radiotherapy. There was no evidence of recurrence after nine months.

**Conclusion:** A high index of suspicion is of paramount importance in the diagnosis of JA and avoids the possibility of an unwarranted biopsy which could spell disaster. The most useful tools for diagnosis are MRI and arterial angiography. Treatment is primarily surgical. Irradiation therapy has been reported to achieve satisfactory outcomes, especially for unresectable residual disease and/or intracranial extension, where total surgical resection is unlikely to be attained without unacceptable morbidity. (**Authors' abstract**)

**Keywords:** Medicine, Juvenile angiofibroma, Juvenile Nasopharyngeal angiofibroma, Head tumor, Neck tumor

**Kimura's disease initially diagnosed as malignancy then extra-pulmonary tuberculosis**  
**King-Chao, Nikki Lorraine Y., Castañeda, Samantha S., Sarte, Michae**

**Objective:** To describe a rare case of Kimura's disease initially misdiagnosed as malignancy then tuberculosis.

**Methods:**

**Design:** Case report

**Setting:** Tertiary Private Hospital

**Patient:** One

**Results:** A 30-year-old male with a 6-year history of gradually-enlarging right infra-auricular mass revealed an enlarged mass in the right infraauricular area and multiple cervical lymphadenopathies on physical examination. Initial fine-needle aspiration biopsy was interpreted as pleomorphic adenocarcinoma but succeeding work-ups and imaging studies led to treatment for tuberculosis. Subsequent biopsies finally led to the proper histopathologic diagnosis of Kimura's disease and the patient was shifted to appropriate treatment with oral prednisone.

**Conclusion:** Kimura's disease is rare and may be confused with other diseases such as malignancy or tuberculosis. Histopathologic diagnosis is necessary as its treatment differs from tuberculosis and other diseases. (**Authors' abstract**)

**Keywords:** Medicine, Kimuras disease, Parotid gland tumor, Angiolymphoid hyperplasia with eosinophilia

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2012,  
(Filipiniana Analytics)  
NP

0387

### **Kinetic differences between synaptic and extrasynaptic GABA<sub>A</sub> receptors in CA1 pyramidal cells**

**Pearce, Robert A. , Banks, Matt**

GABA<sub>A</sub>-mediated IPSCs typically decay more rapidly than receptors in excised patches in response to brief pulses of applied GABA. We have investigated the source of this discrepancy in CA1 pyramidal neurons. IPSCs in these cells decayed rapidly, with a weighted time constant  $\tau_{\text{Decay}}$  of  $\sim 18$  msec (24°C), whereas excised and nucleated patch responses to brief pulses of GABA (2 msec, 1 mM) decayed more than three times as slowly ( $\tau_{\text{Decay}}$ ,  $\sim 63$  msec). This discrepancy was not caused by differences between synaptic and exogenous transmitter transients because (1) there was no dependence of  $\tau_{\text{Decay}}$  on pulse duration for pulses of 0.6–4 msec, (2) responses to GABA at concentrations as low as 10  $\mu$ M were still slower to decay ( $\tau_{\text{Decay}}$ ,  $\sim 41$  msec) than IPSCs, and (3) responses of excised patches to synaptically released GABA had decay times similar to brief pulse responses. These data indicate that the receptors mediating synaptic versus brief pulse responses have different intrinsic properties. However, synaptic receptors were not altered by the patch excision process, because fast, spontaneous IPSCs could still be recorded in nucleated patches. Elevated calcium selectively modulated patch responses to GABA pulses, with no effect on IPSCs recorded in nucleated patches, demonstrating the presence of two receptor populations that are differentially regulated by intracellular second messengers. We conclude that two receptor populations with distinct kinetics coexist in CA1 pyramidal cells: slow extrasynaptic receptors that dominate the responses of excised patches to exogenous GABA applications and fast synaptic receptors that generate rapid IPSCs. (**Author's abstract**)

**Keywords:** Medicine, GABAA receptors, Hippocampus, Receptor kinetics, IPSCs, Patch-clamp, Extrasynaptic receptors

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2000 February,  
(Filipiniana Analytics)  
NP

***Kv4.2 mRNA abundance and A-Type K<sup>+</sup> current amplitude are linearly related in basal ganglia and basal forebrain neurons***

***Surmeier, James , Baranauskas, Gytis , Tkatch, T***

*A-type K<sup>+</sup> currents are key determinants of repetitive activity and synaptic integration. Although several gene families have been shown to code for A-type channel subunits, recent studies have suggested that Kv4 family channels are the principal contributors to A-type channels in the somatodendritic membrane of mammalian brain neurons. If this hypothesis is correct, there should be a strong correlation between Kv4 family mRNA and A-type channel protein or aggregate channel currents. To test this hypothesis, quantitative single-cell reverse transcription-PCR analysis of Kv4 family mRNA was combined with voltage-clamp analysis of A-type K<sup>+</sup> currents in acutely isolated neurons. These studies revealed that Kv4.2 mRNA abundance was linearly related to A-type K<sup>+</sup> current amplitude in neostriatal medium spiny neurons and cholinergic interneurons, in globus pallidus neurons, and in basal forebrain cholinergic neurons. In contrast, there was not a significant correlation between estimates of Kv4.1 or Kv4.3 mRNA abundance and A-type K<sup>+</sup> current amplitudes. These results argue that Kv4.2 subunits are major constituents of somatodendritic A-type K<sup>+</sup> channels in these four types of neuron. In spite of this common structural feature, there were significant differences in the voltage dependence and kinetics of A-type currents in the cell types studied, suggesting that other determinants may create important functional differences between A-type K<sup>+</sup> currents.*

***(Author's abstract)***

***Keywords:*** *Medicine, Kv4, A-type K<sup>+</sup> channel, Voltage clamp, Single cell RT-PCR, TEA, 4-AP, Potassium channels, mRNA*

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2000 January,  
(Filipiniana Analytics)  
NP*

***The landscape of health researches in Ilocos Region, Philippines***

***Cadorna, Edelyn A., Cadorna, Erwin***

*The content and methods of research adopted reflect the expertise of researchers and the capability of academic programs. This study analyzed the health researches conducted in the Ilocos Region and focused on quantity and quality. The descriptive research design was utilized in the study. The respondents were the health researchers in Ilocos Region. The data were gathered through the use of a questionnaire and supplemented by documentary analysis and interviews. The quality of the researches was evaluated by the researchers themselves and then validated by two research experts. Results showed that there were 241 health researchers and 248 health researches conducted in the region. The health researches conducted in the hospitals were mostly clinical, while those conducted in the academic institutions were theses and dissertations. Majority of the researches were conducted by individual authors and personally funded and mainly focused on local concerns. Most of the researches were published in research and scientific journals, disseminated through forums, conferences, research display and exhibits, but they were not actually utilized. In general, the health researches conducted in the region had average quality. The study concluded that researches were moderately relevant and responsive, highly effective, highly scientific, highly transferable, but slightly disseminated. Furthermore, the personal and professional variables of the*

respondents contributed significantly to the quantity and quality of the health researches conducted. (**Author's abstract**)

**Keywords:** Medicine, Health research, Documentary analysis, Scientific journals, Ilocos region

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2012,  
(Filipiniana Analytics)  
NP

0390

**Laryngeal trauma with phrenic nerve injury: a rare association**  
**Baki, Marina Mat , Yunus, Mohd Razif Mohamad , Hashim, Noor Dina , Ami,**

**Objectives:** To share our experience in managing a rare involvement of phrenic nerve injury in laryngeal trauma.

**Methods:**

Design:	Case	Referral	Report
Setting:	Tertiary		Centre
Patient:			One

**Results:** A 23-year-old male sustained blunt laryngeal trauma associated with phrenic nerve injury leading to silent traumatic diaphragmatic paralysis. He underwent tracheotomy and surgical repair of Schaeffer class IV laryngeal injuries, and conservative therapy for the diaphragmatic paralysis, which eventually resolved.

**Conclusion:** Patients with laryngeal trauma may have concomitant phrenic nerve injury causing diaphragmatic paralysis. The diagnosis should be considered particularly if the patient has respiratory problems despite securing the airway by tracheotomy. A high index of suspicion is required in diagnosing such an association. Patients should be closely monitored even though most will recover as some may present with later morbidities. A search of PubMed and OvidSP using the terms "larynx," "laryngeal trauma" and "phrenic nerve" did not yield any report of phrenic nerve injury in association with laryngeal trauma. To our knowledge, this is may be the first reported case of phrenic nerve injury in association with blunt laryngeal trauma. (**Author's abstract**)

**Keywords:** Medicine, Larynx, Trauma, Phrenic nerve

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 24 Issue No. 2, 39-41  
2009,  
(Filipiniana Analytics)  
NP

0391

**Lateral rhinotomy for a large, infected haller cell causing proptosis**  
**Goswami, Subodh Chandra , Baruah, Dilip Kumar , Ghosh, Debangshu, Basu, Sumit K**

**Objective:** To report a case of a large sinus Haller cell that presented with chronic rhinosinusitis and proptosis and its surgical management.

**Methods:**

**Design:** Case Report  
**Setting:** Tertiary Government Hospital  
**Patient:** One

**Results:** A 34-year-old lady with proptosis and secondary sinusitis due to a giant infected Haller cell was successfully treated by lateral rhinotomy approach and clearance of all diseased mucosa therein into the nasal cavity.

**Conclusion:** Approach to diseased sinonasal structures via lateral rhinotomy is an alternative to endoscopic sinus surgery in the presence of an unusually large Haller cell. (**Authors' abstract**)

**Keywords:** Medicine, Haller cell, Proptosis, Maxillary sinusitis, Lateral rhinotomy

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 30 Issue No. 1, 43-46  
2015,  
(Filipiniana Analytics)  
NP

0392

**The “Sail” excision technique: a modified alar lift procedure for Southeast Asian noses**  
**Olveda, Mildred B., Baladiang, Dennis Eusebio A., Yap, Eduard**

**Objective:** To describe a new “sail” shaped excision technique for alar lift surgery and present the outcome of this technique through photo documentation.

**Methods:**

**Design:** Surgical Innovation; Case series  
**Setting:** Tertiary Government Hospital  
**Participants:** Four patients underwent alar rim lift procedure using “sail” excision technique performed by the senior co-author. The indication for “sail” excision technique was a hanging ala (type IV) based on the classification of alar-columellar discrepancies by Gunter et al. The outcomes were described with comparison of pre-operative and post-operative photographs.

**Results:** Post-operative improvement of the alar-columellar relationship and counter-rotation of the tip, the “gull’s wing in flight” was further enhanced. There were no scar contracture or vestibular stenosis, and scars were aesthetically acceptable.

**Conclusion:** Alar lift surgery demands an accurate diagnosis and analysis of the alar-columellar discrepancies. In Southeast Asian noses, unlike Caucasian noses, the most common indication for alar surgery are wide and overhanging ala. Our proposed technique is an easy and safe method of correcting alar overhang. This procedure with its advantages represents a new, reliable and simple way of achieving predictable results in many rhinoplasty cases. (**Author's abstract**)

**Keywords:** Medicine, Alar lift, Hanging ala, Alar-columellar relationship, alar-columellar discrepancies, Counter rotation of tip, Vestibular stenosis

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0393

***Level of community awareness on selected medical imaging modalities on the availability of health care services in Canitoan Village***

***Flores, Khristy Joy L. , Ebcas, Eamme Fides U. , Cepeda, Brent Lloyd D. , Carbon, Niña Marie C. , Almajar, Ja***

*The study pertains to community awareness on selected medical imaging modalities. A study that answered questions of community on the benefits of diagnostic examinations in discovering illnesses, and delivery modes of health care services in the community. It sought answer the following objectives: 1) Identify respondents' profile, their level of awareness on the availability of and access ability of selection imaging modalities; 2) determine referral system practiced in the village; 3) identify the relationship between respondents' profile and their level of awareness; and relationship between referral systems used in the community. Study employed the descriptive method to describe the characteristics of respondents. The following conditions were derived from the study. Respondents' monthly incomes were significant in measuring level of awareness of the medical imaging modalities, while the rest of the variables were not. Majority of the respondents were less knowledgeable with new imaging modalities in the city such as CT Scan, MRI and Nuclear Medicine. Respondents relied on information from the neighborhood, health center provider and microteaching of health care students. Referral system used by respondents contributed to their low level of awareness since they most likely acquire information from personnel in the health care center, who refer them to hospital that could render needed service. (Author's abstract)*

**Keywords:** *Medicine*

0394

***The level of discomfort experienced among patients who undergone mammographic examination***

***Sabellina, Charisse Mae L. , Sabaña, Kareen June P. , Rosell, Diana Cristy B. , Ebcas, Erich Jan E. , Abugho, Jesyl D. , Almajar, Ja***

*The study was designed to measure the level of discomfort experienced among patients who have undergone mammographic examination. First, to identify the profile of the patients in terms of age, size of breast, marital status, and number of mammogram examinations experienced and family history of breast tumor. Second, to determine the perception of discomfort experienced by patients before, during, and after the procedure. Third, to determine the relationship between the profiles of patients and their perception of pain during the procedure. To achieve the objectives, the study used the descriptive survey since the researchers decided to determine the extent or the level of pain experienced by the patient during mammographic examination. The respondents of this research were patients, who have undergone mammographic examination in selected hospitals, in Cagayan de Oro City namely; Polymedic General Hospital, Cagayan de Oro Medical Center and Madonna and Child's Hospital. Majority of the respondents that had undergone mammographic examination belonged to the age bracket of 41-50*

years old, with cup size B (breast), married and first time to undergo mammographic examination. It showed that most of the respondents felt nervous before examination. Moreover, the results showed that there is a significant relationship between the size of breast and number of mammograms experienced whereas ages, marital status, family history of breast cancer were not significant. (Author's abstract)

**Keywords:** Medicine

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Advancing Radiologic Technology Research, Volume No. 1 Issue No. 1,  
2013,  
(Filipiniana Analytics)  
NP

0395

***Lipofibromatosis: an unusual head and neck mass in the paediatric age group***  
**Aggarwal, Shalini , Rattan, Kamal Nain , Singh Kadian, Yogender, Modi, Shilpi , Kalra, Rajn**

**Objective:** To describe a rare case of lipofibromatosis presenting as a head and neck mass in a 6-year-old child.

**Method:**

<b>Design:</b>	Case	Report		
<b>Setting:</b>	Tertiary	Public	General	Hospital
<b>Patient:</b>				One

**Result:** A six-year-old male child admitted with a large right head and neck region mass underwent complete excision of a possible soft tissue neoplasm following investigations which included Fine Needle Aspiration Cytology, Ultrasonography and Computed Tomography. Histopathological examination yielded lipofibromatosis, a very rare lesion with a distinctive fibrofatty pattern. The patient was well with no recurrence after three months of follow up.

**Conclusion:** Although lipofibromatosis is a rare lesion in children and has a predilection for distal extremities, it may also present as a mass in the head and neck area. Complete surgical excision is feasible and is the only treatment option available for this rare lesion. (Authors' abstract)

**Keywords:** Medicine, Lipofibromatosis, Head mass, Neck mass, Computed tomography (CT) scan, Fine needle aspiration cytology, Ultrasonography

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 26 Issue No. 1, 39-41  
2011,  
(Filipiniana Analytics)  
NP

0396

***Lived experiences of patients undergoing cardiac rehabilitation***  
**Sintay, Robert Kenn**

This qualitative study focused on the patients' lived experiences in cardiac rehabilitation. A phenomenological research design was the foundation of the study. The lived experiences of the patients directly discovered the uniqueness of the true meaning of cardiac rehabilitation experience in its physical and psychological aspects.

Participants were selected through purposive and snowball sampling. Key informant interview served as a method for data collection. Themes that emerged from the participants' unique encounter comprised of three (3) major themes: recovery, behavior modification and interpersonal relationship and fifteen (15) subthemes: physical recuperation, sexual activity, positive outlook in life, motivation, psychological recovery, gaining new knowledge, fear, openness, self-discipline, empathy, change in mood, willingness to participate, spiritually, safety, camaraderie, and family support. In conclusion, listening and learning the experiences from the patient who is in the process of CCRoP lead us to identify the physiologic and psychological aspect of recovery. This study on CCRoP provided an insight not only about clinical improvement but also about the body of the nursing profession. Greater encouragement to post operative cardiac surgery will allow patients to immerse themselves in the uniqueness of the experience and the positive physiological and psychological effect of cardiac rehabilitation. **(Author's abstract)**

**Keywords:** Medicine, Cardiac rehabilitation, Psychological recovery, Behavior modification, Physical recuperation

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Asian Journal of Health, Volume No. 1 Issue No. 1, 60-77  
2011,  
(Filipiniana Analytics)  
NP

0397

### ***Lived experiences with arthritis among older people*** ***Defensor, J***

Arthritis is one of the many disabling diseases in the Philippines today. Its effects on the older persons are paramount in terms of productivity and quality of life. This study identified the experiences of older people with arthritis in Cagayan de Oro City. A descriptive method was used. The study was conducted at the office of Senior Citizen's Organization, Cagayan de Oro City. The respondents were members of OSCA (Office of Senior Citizen Affairs) who are affected by arthritis. An interview schedule was used in the gathering of data. The majority of older people are still living under the debilitating and disabling effects of arthritis despite the advancement of medical management. Without proper medical management of arthritis, quality life for older people with arthritis shall remain to be attained. Effective ways must be done to deliver education, knowledge and understanding of arthritis to the older individuals. **(Author's abstract)**

**Keywords:** Medicine, Lived experiences, Arthritis, Older people

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Asian Journal of Health, Volume No. 1 Issue No. 1, 100-118  
2011,  
(Filipiniana Analytics)  
NP

0398

### ***Local control of acetylcholinesterase gene expression in multinucleated skeletal muscle fibers: individual nuclei respond to signals from the overlying plasma membrane*** ***Rotundo, Richard L. , Vazquez, Ana E. , Rossi, Sus***

Nuclei in multinucleated skeletal muscle fibers are capable of expressing different sets of muscle-specific genes depending on their locations within the fiber. Here we test the hypothesis that each nucleus can behave autonomously and responds to signals generated locally on the plasma membrane. We used acetylcholinesterase

(AChE) as a marker because its transcripts and protein are concentrated at the neuromuscular and myotendinous junctions. First, we show that tetrodotoxin (TTX) reversibly suppresses accumulation of cell surface AChE clusters, whereas veratridine or scorpion venom (ScVn) increase them. AChE mRNA levels are also regulated by membrane depolarization. We then designed chambered cultures that allow application of sodium channel agonists or antagonists to restricted regions of the myotube surface. When a segment of myotube is exposed to TTX, AChE cluster formation is suppressed only on that region. Conversely, ScVn increases AChE cluster formation only where in contact with the muscle surface. Likewise, both the synthesis and secretion of AChE are shown to be locally regulated. Moreover, using *in situ* hybridization, we show that the perinuclear accumulation of AChE transcripts also depends on signals that each nucleus receives locally. Thus AChE can be up- and downregulated in adjacent regions of the same myotubes. These results indicate that individual nuclei are responding to locally generated signals for cues regulating gene expression. **(Author's abstract)**

**Keywords:** Medicine, Neuromuscular junction, Skeletal muscle, Gene regulation, Muscle differentiation, Membrane depolarization, Acetylcholinesterase

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*JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 3, 919-928*  
2000 February,  
(Filipiniana Analytics)  
NP

0399

### **Local morphine withdrawal increases c-fos Gene, Fos Protein, and Oxytocin Gene expression in hypothalamic magnocellular neurosecretory cells**

**Brooks, Philip J. , Vuijst, Chr tienne L. , Meeren, Hanneke K. M. , Brown, Colin H. , Johnstone, Louise E., Leng, Gareth , Russell, Joh**

We measured stimulation of c-fos and oxytocin gene expression during excitation of oxytocin cells induced by systemic or local morphine withdrawal. Female rats were made morphine-dependent by intracerebroventricular morphine infusion over 5 d. Morphine withdrawal, induced by systemic injection of the opioid antagonist naloxone (5 mg/kg) in conscious or anesthetized rats, increased the density of c-fos messenger RNA and of oxytocin heterogeneous nuclear RNA in supraoptic nucleus cells compared with those of nonwithdrawn rats; c-fos messenger RNA was also increased in the magnocellular and parvocellular paraventricular nuclei of withdrawn rats. Morphine withdrawal increased the number of Fos-immunoreactive cells in the supraoptic and magnocellular paraventricular nuclei of conscious or pentobarbitone-anesthetized rats. Morphine withdrawal also increased Fos-immunoreactive cell numbers in the parvocellular paraventricular nucleus of conscious but not anesthetized rats. Central administration of the  $\alpha 1$ -adrenoreceptor antagonist benoxathian (5  $\mu$ g/min) did not prevent morphine withdrawal-induced increases in the numbers of Fos-immunoreactive neurons in the supraoptic or magnocellular paraventricular nucleus. Unilateral microdialysis administration of naloxone ( $10^{-5}$  M) into the supraoptic nucleus of anesthetized morphine-dependent rats increased Fos-immunoreactive cell numbers compared with the contralateral nucleus. Finally, we investigated whether dependence could be induced by chronic unilateral infusion of morphine into a supraoptic nucleus; systemic naloxone (5 mg/kg) increased Fos-immunoreactive cell numbers in the morphine-infused nucleus compared with the contralateral nucleus. Thus, morphine withdrawal excitation increases c-fos and oxytocin gene expression in supraoptic nucleus neurons. This occurs independently from excitation of their ascending noradrenergic inputs, and both dependence and withdrawal can be induced within the supraoptic nucleus. **(Author's abstract)**

**Keywords:** Medicine, Adrenoreceptors, Benoxathian, Dependence, Hypothalamic paraventricular nucleus, Microdialysis, Naloxone, Opioid, Supraoptic nucleus

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*JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 3, 1272-1280*  
2000 February,

**Localization and developmental expression patterns of the Neuronal K–Cl Cotransporter (KCC2) in the rat retina**

**Copenhagen, David R. , Payne, John A. , Vu, Ta**

*The processing of signals by integrative neurons in the retina and CNS relies strongly on inhibitory synaptic inputs, principally from GABAergic and glycinergic neurons that serve primarily to hyperpolarize postsynaptic neurons. Recent evidence indicates that the neuron-specific K–Cl cotransporter 2 (KCC2) is the major chloride extrusion system permitting hyperpolarizing inhibitory responses. It has been hypothesized that depolarizing GABA responses observed in immature neurons are converted to hyperpolarizing responses in large part by the expression of KCC2 during the second week of postnatal development. The cell-specific localization and developmental expression of KCC2 protein have been examined in relatively few neural tissues and have never been studied in retina, of which much is known physiologically and morphologically about inhibitory synaptic circuits. We examined the localization of KCC2 in adult rat retina with immunohistochemical techniques and determined the time course of its postnatal expression. KCC2 expression was localized in horizontal cells, bipolar cells, amacrine cells, and, most likely, ganglion cells, all of which are known to express GABA receptor subtypes. Developmentally, KCC2 expression in the retina increased gradually from postnatal day 1 (P1) until P14 in the inner retina, whereas expression was delayed in the outer plexiform layer until P7 but reached its adult level by P14. These data support the hypothesis that the function of KCC2 is intimately involved in GABAergic synaptic processing. Furthermore, the delayed temporal expression of KCC2 in the outer plexiform layer indicates that GABAergic function may be differentially regulated in retina during postnatal development and that GABA may produce depolarizing responses in the outer plexiform layer at times when it generates hyperpolarizing responses in the inner plexiform layer.*  
**(Author's abstract)**

**Keywords:** GABAergic excitation, Synaptogenesis, Medicine, Potassium chloride cotransporter, GABA receptors, Chloride gradient, Retinal development, Synaptic inhibition, Synaptic excitation

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*JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 4, 1414-1423  
2000 February,  
(Filipiniana Analytics)  
NP*

**Long-term depression and depotentiation in the sensorimotor cortex of the freely moving rat**  
**Trepel, Christopher , Chapman, Andrew , Froc, David J., Racine, Ronal**

*Activity-dependent reductions in synaptic efficacy are central components of recent models of cortical learning and memory. Here, we have examined long-term synaptic depression (LTD) and the reversal of long-term potentiation (depotentiation) of field potentials evoked in sensorimotor cortex by stimulation of the white matter in the adult, freely moving rat. Prolonged, low-frequency stimulation (1 Hz for 15 min) was used to induce either depotentiation or LTD. LTD was expressed as a reduction in the amplitude of both monosynaptic and polysynaptic field potential components. Both LTD and depotentiation were reliably induced by stimulation of the ipsilateral white matter. Stimulation of the contralateral neocortex induced only a depotentiation effect, which decayed more rapidly than that induced by ipsilateral stimulation (hours vs days). Although ipsilateral LTD was effectively*

induced by a single session of low-frequency stimulation, multiple sessions of stimulation, either massed or spaced, induced LTD effects that were larger in magnitude and longer lasting. Previously, we showed that the induction of long-term potentiation in the neocortex of chronic preparations required multiple, spaced stimulation sessions to reach asymptotic levels. Here, we report that LTD also required multiple stimulation sessions to reach asymptotic levels, but massed and spaced patterns of low-frequency stimulation were equally effective. **(Author's abstract)**

**Keywords:** Medicine, Neocortex, Long-term potentiation, LTP, LTD, Plasticity, Memory

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*JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 1, 438-445*  
2000 January,  
(Filipiniana Analytics)  
NP

0402

***The lower cheek flap combined with neurosurgical approach for infratemporal fossa tumour***  
***Bakar, Azizi Abu , Ami, Mazita , Hamizan, Aneza Khairiyah W., Yunus, Mohd Razif Moh***

**Objective:** To describe our experience in performing the lower cheek flap for access to the infratemporal fossa combined with the neurosurgical approach.

**Methods:**

Design:	Case	Report
Setting:	Tertiary	Center
Patients:	Referral	Two

**Result:** Two unusual tumours involving the infratemporal and middle cranial fossa were excised using this combined approach. The infratemporal fossa tumour was accessed via the lower cheek flap while the intracranial portion was resected from above via craniotomy.

**Conclusion:** The lower cheek flap in combination with the neurosurgical approach allows optimal exposure to tumours involving the infratemporal and middle cranial fossae. It has less complications and better aesthetic outcome compared to other approaches. **(Author's abstract)**

**Keywords:** Medicine, Lower cheek flap, Infratemporal fossa tumour, Neurosurgical approach

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*Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 25 Issue No. 1, 17-19*  
2010,  
(Filipiniana Analytics)  
NP

0403

***Mandibular ameloblastoma with lung metastasis 10 years after resection***  
***Guevara, Eutrapió S. , Carpella, Allan B. , Rabo, Justin Iohanne Siy , Romualdez, J***

**Objective:** To present a case of mandibular ameloblastoma with pulmonary metastasis after ten years and discuss the possible pathophysiology, diagnostic and therapeutic options.

**Methods:**

**Design:** Case Report  
**Setting:** Tertiary Private Hospital  
**Patient:** One

**Results:** A 27-year-old woman diagnosed with follicular variant ameloblastoma underwent left segmental mandibulectomy with iliac bone reconstruction in 2004. The titanium plates were removed in 2008 because of a recurrent orocutaneous fistula. She was apparently well until 2014, when she complained of intermittent, non-radiating, sharp and piercing, right upper back pains. Work-ups revealed multiple bilateral lung nodules. A CT scan-guided percutaneous needle biopsy of the right upper lung nodule revealed metastatic ameloblastoma. Opting for observation instead of chemoradiation, she remains asymptomatic on regular follow-ups with medical oncology, pulmonary medicine and otorhinolaryngology.

**Conclusion:** Though benign, ameloblastoma has a high propensity for local invasion and may metastasize. It is difficult to predict metastasis, even with adequate treatment of the primary lesion. There is no standard protocol to prevent or detect metastatic ameloblastoma, but regular and close follow up may ensure early diagnosis. (**Authors' abstract**)

**Keywords:** Medicine, Ameloblastoma, Metastatic ameloblastoma, Lung metastasis, Follicular type ameloblastoma, Odontogenic tumor

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 31 Issue No. 1, 53  
2016,  
(Filipiniana Analytics)  
NP

0404

**Mandibular metastasis from Nasopharyngeal carcinoma**  
**Chong, Hon Syn , Yunus, Mohd Razif Mohamad, Lum, Chee**

**Objective:** To describe a case of mandibular metastasis from nasopharyngeal carcinoma and review the literature.

**Methods:**

**Design:** Case Report  
**Setting:** Tertiary Public University Hospital  
**Patient:** One

**Result:** A 42-year-old Malay gentleman underwent concurrent chemoradiotherapy (CCRT) for T4N2M0 (Stage IVa) nasopharyngeal carcinoma (NPC) non-keratinizing type (WHO II). Upon completion of CCRT, he developed metastasis to the left body of the mandible that increased in size despite three cycles of adjuvant intravenous chemotherapy. Hemi-mandibulectomy was deferred due to recent irradiation and a further 15 fractions of boost radiotherapy reduced the mandibular metastasis in size but it has remained the same after six months follow up.

**Conclusion:** Nasopharyngeal carcinoma (NPC) is a common malignancy in Oriental Asia and the South East Asian regions. It has the highest rates of nodal and distant metastases among all head and neck cancers. Distant metastasis to bone is common but we could find no previous report of mandibular bone involvement in the literature. Radiotherapy remains the main treatment modality and combination with chemotherapy has been shown

to improve survival of patients. There are studies on nasopharyngeal carcinoma tumour markers for diagnosis and disease process follow up but these are still inconclusive. (**Authors' abstract**)

**Keywords:** Medicine, Nasopharyngeal carcinoma, Bones, Mandible, Metastasis

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 26 Issue No. 2, 18-20  
2011,  
(Filipiniana Analytics)  
NP

0405

**Maternal and child health care practices of the Matigsalug Tribe in Simsimon, Kalagangan, Bukidnon, Philippines**  
**Ramos, Arnú**

This study was conducted to document the practices on maternal and child health care along the areas of pregnancy, dietary systems, birthing, feeding, baptismal rituals, illnesses and discipline among the Matigsalug tribe in Sitio Simsimon, community Kalagangan, Bukidnon. The gathering of the data was obtained from actual fieldwork. Key informant interview, participant observation and photography were triangulated in this study. Findings show that Sitio Simsimon is a mountainous area. Houses are made of rattan and the people are practicing slash-burn farming. A Matigsalug pregnant woman observes taboos to protect the infant's life and health. Many beliefs and practices on food have desirable effects on maternal and child health. The mothers practiced breast feeding although working mother sometimes trained the child to eat solid food. Circumcision, tattoo, and the chewing of betel nut are practiced in the area. Illnesses are diagnosed as caused by evil spirits. The Matigsalug taught their children to value honesty, cultivate their farm and helped their father in food hunting. It was concluded that the Matigsalug still possessed certain indigenous maternal and child health care. It is recommended that the Matigsalug mothers need adequate knowledge in hygiene and nutrition to improve their maternal and child health care. (Author's abstract)

**Keywords:** Medicine, Maternal and child health care practices, Matigsalug Tribe, Pregnancy, Dietary systems, Birthing, Feeding, Baptismal rituals, Illnesses, Discipline

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IAMURE International Journal of Health Education, Volume No. 1 Issue No. 1,  
2012,  
(Filipiniana Analytics)  
NP

0406

**Measurement of the handicap of dysphonic patients using the Filipino voice handicap index**  
**Llanes, Erasmo Gonzalo DV., Lim, Aimee Caroline E., Hernandez, Melfred**

**Objective:** 1) To describe patterns of Filipino Voice Handicap Index (VHI) scores in relation to the demographic data of dysphonic patients; 2) To describe patterns of Filipino VHI scores in relation to the different pathologies of dysphonia as determined by videostroboscopy.

**Methods:**

Design: Cross-sectional study.



Setting: Tertiary Government Hospital.  
Population: Adult patients ( $\geq 18$  years old), proficient in Filipino.

A group of 124 dysphonic patients seen at the Videostroboscopy Unit completed the Filipino VHI. Demographic data were collected. Videostroboscopy diagnoses were classified into six groups: normal, mass lesions, inflammatory, mucosal irregularities, functional and neurogenic. The T-test was used to determine differences in scores among the demographic parameters and the pathology groups. ANOVA one-way factor was used to determine difference of subscale scores within each pathology group, and to determine difference of pathology scores in each subscale. Differences were considered statistically significant if  $p < 0.05$ .

**Results:** Statistical analyses showed that Filipino VHI scores were affected by age, gender, educational status and occupation. Younger patients significantly scored higher than patients  $>40$  years old. Females had significantly higher scores than males in the functional, physical and total subscales. Patients with lower educational status scored higher compared to college graduates. Voice professionals significantly scored higher than the non-voice professionals. Dysphonic patients significantly scored higher than normal volunteers. Among the pathological groups, neurogenic lesions had the highest scores. Physical subscale scores were significantly higher in all lesions except in functional lesions.

**Conclusion:** The Filipino VHI is comparable to the other versions of the VHI, with patterns similar to other versions. It gives the clinician a measure of a dysphonic patient's handicap, and is an invaluable tool in quantifying severity of dysphonia. (**Author's abstract**)

**Keywords:** Medicine, Dysphonia, Voice handicap index, Videostroboscopy

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 25 Issue No. 1, 7-12  
2009,  
(Filipiniana Analytics)  
NP

0407

### **Mechanisms of ionotropic glutamate receptor-mediated excitotoxicity in isolated spinal cord white matter** **Stys, Peter K. , Li,**

Spinal cord injury involves a component of glutamate-mediated white matter damage, but the cellular targets, receptors, and ions involved are poorly understood. Mechanisms of excitotoxicity were examined in an *in vitro* model of isolated spinal dorsal columns. Compound action potentials (CAPs) were irreversibly reduced to 43% of control after 3 hr of 1 mM glutamate exposure at 37°C. AMPA (100  $\mu\text{M}$ ) and kainate (500  $\mu\text{M}$ ) had similar effects. Antagonists (1 mM kynurenic acid, 10  $\mu\text{M}$  NBQX, 30  $\mu\text{M}$  GYKI52466) were each equally protective against a glutamate challenge, improving mean CAP amplitude to  $\sim 80\%$  versus  $\sim 40\%$  without antagonist. Joro spider toxin (0.75  $\mu\text{M}$ ), a selective blocker of  $\text{Ca}^{2+}$ -permeable AMPA receptors, was also protective to a similar degree.  $\text{Ca}^{2+}$ -free perfusate virtually abolished glutamate-induced injury ( $\sim 90\%$  vs  $\sim 40\%$ ). MK-801 (10  $\mu\text{M}$ ) had no effect. Glutamate caused damage (assayed immunohistochemically by spectrin breakdown products) to astrocytes and oligodendrocytes consistent with the presence of GluR2/3 and GluR4 in these cells. Myelin was also damaged by glutamate likely mediated by GluR4 receptors detected in this region; however, axon cylinders were unaffected by glutamate, showing no increase in the level of spectrin breakdown. These data may guide the development of more effective treatment for acute spinal cord injury by addressing the additional excitotoxic component of spinal white matter damage. (**Author's abstract**)

**Keywords:** Medicine, Glutamate, Excitotoxicity, AMPA receptor, Spinal cord white matter, Myelin, Axon, Glia, Oligodendrocyte, Astrocyte, Spectrin, Joro spider toxin, GYKI52466, NBQX, MK-801, Kainate

***Medial frontal cortex in action monitoring***  
***Tucker, Don M. , Flaisch, Tobias , Luu***

*Effective behavior requires continuous action monitoring. Electrophysiological studies in both monkeys and humans have shown activity in the medial frontal cortex that reflects dynamic control and monitoring of behavioral acts. In humans, the centromedial frontal cortex shows an electrical response within 100 msec of an error, the error-related negativity (ERN). The ERN occurs only when subjects are aware of making an error, suggesting that a critical factor may be self-monitoring of the action process. In the present study, we examined late responses in a deadline reaction time task, in which the subject becomes increasingly aware of making an error as the response becomes increasingly late. We found evidence of response conflict before errors defined by late responses but not before errors defined by incorrect responses. The results also show a linear increase in the amplitude of the ERN with increasingly late responses. These data suggest that frontal networks provide dynamic representations that monitor and evaluate the unfolding action plan. (Author's abstract)*

**Keywords:** *Medicine, Anterior cingulate, Error-related negativity, Action monitoring, Awareness, Response conflict, Event-related potential*

***Medialization thyroplasty using a pocket and silicone implant technique***  
***Ibay, Emmanuel L. , Taningco, Maria Margar***

**Objective:** *To describe a new method of medialization thyroplasty using a modified preformed nasal silicone implant.*

**Methods:**

**Design:** *Surgical Innovation*

**Setting:** *Tertiary Private Hospital*

**Participants:** *Four patients underwent medialization thyroplasty using a pocket and nasal implant technique performed by the senior co-author. The indication for medialization thyroplasty for these patients was hoarseness secondary to unilateral vocal fold paralysis of more than 6 months duration, and documented by flexible fiberoptic laryngoscopy. The outcomes were described with comparison of pre- and post-operative subjective voice assessment.*

**Results:** Operative time was 15–30 minutes. Postoperative subjective improvement of voice quality was evident. Scars were minimal and aesthetically acceptable. The procedure could be done on an outpatient basis.

**Conclusion:** Medialization thyroplasty via a pocket and silicone implant technique is initially effective and may be a worthwhile alternative to the usual window technique. **(Authors' abstract)**

**Keywords:** Medicine, Unilateral vocal cord paralysis, Medialization thyroplasty, Isshiki thyroplasty, Silicone implant

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 31 Issue No. 2, 54-57  
2016,  
(Filipiniana Analytics)  
NP

0410

### **Melanotic neuroectodermal tumor of infancy**

**Enriquez, Anjelane M. , Carnate, Jr., J**

A case of melanotic neuroectodermal tumor of infancy (MNETI) is presented. The salient histopathologic features of this unusual neoplasm are discussed including post-chemotherapy morphologic changes. **(Author's abstract)**

**Keywords:** Medicine, Melanotic neuroectodermal tumor of infancy, Retinal anlage tumor, Progonoma, Neuroectodermal tumors

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2011,  
(Filipiniana Analytics)  
NP

0411

### **Membrane potential and firing rate in cat primary visual cortex**

**Ferster, David , Carandini,**

We have investigated the relationship between membrane potential and firing rate in cat visual cortex and found that the spike threshold contributes substantially to the sharpness of orientation tuning. The half-width at half-height of the tuning of the spike responses was  $23 \pm 8^\circ$ , compared with  $38 \pm 15^\circ$  for the membrane potential responses. Direction selectivity was also greater in spike responses (direction index,  $0.61 \pm 0.35$ ) than in membrane potential responses  $(0.28 \pm 0.21)$ .

Threshold also increased the distinction between simple and complex cells, which is commonly based on the linearity of the spike responses to drifting sinusoidal gratings. In many simple cells, such stimuli evoked substantial elevations in the mean potential, which are nonlinear. Being subthreshold, these elevations would be hard to detect in the firing rate responses. Moreover, just as simple cells displayed various degrees of nonlinearity, complex cells displayed various degrees of linearity.

We fitted the firing rates with a classic rectification model in which firing rate is zero at potentials below a

threshold and grows linearly with the potential above threshold. When the model was applied to a low-pass-filtered version of the membrane potential (with spikes removed), the estimated values of threshold ( $-54.4 \pm 1.4$  mV) and linear gain ( $7.2 \pm 0.6$  spikes  $\cdot$  sec $^{-1}$   $\cdot$  mV $^{-1}$ ) were similar across the population. The predicted firing rates matched the observed firing rates well and accounted for the sharpening of orientation tuning of the spike responses relative to that of the membrane potential.

As it was for stimulus orientation, threshold was also independent of stimulus contrast. The rectification model accounted for the dependence of spike responses on contrast and, because of a stimulus-induced tonic hyperpolarization, for the response adaptation induced by prolonged stimulation. Because gain and threshold are unaffected by visual stimulation and by adaptation, we suggest that they are constant under all conditions. **(Authors' abstract)**

**Keywords:** Medicine, Threshold, Summation, Iceberg, Tuning, Linearity, Orientation, Contrast, Adaptation, Simple cells, Complex cells

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2000 January,  
(Filipiniana Analytics)  
NP

0412

### ***Mice deficient in cellular glutathione peroxidase show increased vulnerability to malonate, 3-Nitropropionic Acid, and 1-Methyl-4-Phenyl-1,2,5,6-Tetrahydropyridine***

***Andersen, Julie K. , Bogdanov, Mikhail , Lancelot, Eric , Mueller, Gerald , Dedeoglu, Alpaslan , Ferrante, Robert J. , Andreassen, Ole A. , Klivenyi, Peter, Jiang, Dongmei , Flint Bea***

Glutathione peroxidase (GSHPx) is a critical intracellular enzyme involved in detoxification of hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>) to water. In the present study we examined the susceptibility of mice with a disruption of the glutathione peroxidase gene to the neurotoxic effects of malonate, 3-nitropropionic acid (3-NP), and 1-methyl-4-phenyl-1,2,5,6-tetrahydropyridine (MPTP). Glutathione peroxidase knock-out mice showed no evidence of neuropathological or behavioral abnormalities at 2–3 months of age. Intrastratial injections of malonate resulted in a significant twofold increase in lesion volume in homozygote GSHPx knock-out mice as compared to both heterozygote GSHPx knock-out and wild-type control mice. Malonate-induced increases in conversion of salicylate to 2,3- and 2,5-dihydroxybenzoic acid, an index of hydroxyl radical generation, were greater in homozygote GSHPx knock-out mice as compared with both heterozygote GSHPx knock-out and wild-type control mice. Administration of MPTP resulted in significantly greater depletions of dopamine, 3,4-dihydroxybenzoic acid, and homovanillic acid in GSHPx knock-out mice than those seen in wild-type control mice. Striatal 3-nitrotyrosine (3-NT) concentrations after MPTP were significantly increased in GSHPx knock-out mice as compared with wild-type control mice. Systemic 3-NP administration resulted in significantly greater striatal damage and increases in 3-NT in GSHPx knock-out mice as compared to wild-type control mice. The present results indicate that a knock-out of GSHPx may be adequately compensated under nonstressed conditions, but that after administration of mitochondrial toxins GSHPx plays an important role in detoxifying increases in oxygen radicals. **(Author's abstract)**

**Keywords:** Medicine, MPTP, 3-Nitropropionic acid, Malonate, Oxidative damage, Free radicals, Glutathione, Parkinsons, Huntingtons

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*JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 1, 1-7*  
2000 January,  
(Filipiniana Analytics)  
NP

### **Middle ear carcinoma masquerading as an aural polyp**

**Goh, Bee See , Nasir, Abd Majid Md , Yong, Doh**

**Objective:** To present a case of middle ear carcinoma masquerading as an aural polyp and describe our experience with the clinical presentation, management and outcome of an elderly patient with this pathology.

**Methods:**

**Design:** Case Report

**Setting:** Tertiary Public Hospital

**Patient:** One

**Results:** A 63-year-old female presented with an aural polyp and preceding symptoms of inner ear disturbances followed by otorrhea and otalgia. CT scans revealed an erosive lesion occupying the entire middle ear cleft, external ear canal and mastoid cavity with involvement of inner structures. A repeat biopsy subsequently revealed malignancy leading to a diagnosis of middle ear carcinoma. The patient was offered surgical treatment but opted for radiotherapy and subsequently defaulted follow-up.

**Conclusion:** Middle ear carcinoma is rare and can masquerade as a benign aural polyp. Symptoms of severe otalgia and inner ear disturbances are indicators of possible malignancy, as are recent onset symptoms of otitis media developing over a relatively short course later in life. A high index of suspicion is needed to avoid late diagnosis. Repeat deeper aural tissue biopsy is needed to exclude malignancy. Computed tomography imaging is indispensable in delineating tumor extent and aids in tumor staging as well as prognostication. Surgical resection with clear tumor margins, followed by postoperative radiotherapy, is the preferred choice of treatment. Sole radiotherapy is reserved for tumors of small volume as well as in cases where surgery is not feasible. **(Authors' abstract)**

**Keywords:** Medicine, Middle ear carcinoma, Aural polyp, Temporal bone carcinoma

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2012,  
(Filipiniana Analytics)  
NP

### **Modulation of transmission during trains at a cerebellar synapse**

**Regehr, Wade G. , Kreitzer, Ana**

Activity-dependent processes dynamically regulate synapses on the time scale of milliseconds to seconds. Here, we examine the factors governing synaptic strength during repetitive stimulation, both in control conditions and during presynaptic inhibition. Field recordings of presynaptic volleys, optical measurements of presynaptic calcium, and voltage-clamp recordings of postsynaptic currents were used to examine parallel fiber to Purkinje cell synapses in cerebellar brain slices at 34°C. In control conditions, regular stimulus trains (1–50 Hz) evoked up to a 250%

peak synaptic enhancement, whereas during irregular stimulation, a threefold variability in EPSC amplitude was observed. When initial EPSC amplitudes were reduced by 50%, either by lowering external calcium or by activating adenosine A1 or GABAB receptors, the peak enhancement during regular trains was 500%, and synaptic variability during irregular trains was nearly sixfold. By contrast, changes in fiber excitability and calcium influx per pulse were small during trains. Presynaptic calcium measurements indicated that by pulse 10, stimulus-evoked calcium influx had increased by ~15%, which on the basis of the measured relationship between calcium influx and release corresponds to an EPSC enhancement of 50%. This enhancement was the same in all experimental conditions, even in the presence of  $N^6$ -cyclopentyladenosine or baclofen, suggesting that repetitive stimulation does not relieve the G-protein inhibition of calcium channels by these modulators. Therefore, for our experimental conditions, changes in synaptic strength during trains are primarily attributable to residual calcium ( $Ca_{res}$ )-dependent short-term plasticities, and the actions of neuromodulators during repetitive stimulation result from their inhibition of initial calcium influx and the resulting effects on  $Ca_{res}$  and calcium-driven processes. **(Author's abstract)**

**Keywords:** Medicine, GABAB receptor, Adenosine A1 receptor, Presynaptic inhibition, Short-term plasticity, Residual calcium, Cerebellar granule cell, Cerebellar Purkinje cell

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2000 February,  
(Filipiniana Analytics)  
NP

0415

### ***Molecular cloning and functional characterization of a new modulatory cyclic nucleotide-gated channel subunit from mouse retina***

***Hofmann, Franz , Zong, Xiangang , Gerstner, Andrea, Biel, Ma***

Cyclic nucleotide-gated (CNG) channels play a key role in olfactory and visual transduction. Native CNG channels are heteromeric complexes consisting of the principal  $\alpha$  subunits (CNG1–3), which can form functional channels by themselves, and the modulatory  $\beta$  subunits (CNG4–5). The individual  $\alpha$  and  $\beta$  subunits that combine to form the CNG channels in rod photoreceptors (CNG1 + CNG4) and olfactory neurons (CNG2 + CNG4 + CNG5) have been characterized. In contrast, only an  $\alpha$  subunit (CNG3) has been identified so far in cone photoreceptors. Here we report the molecular cloning of a new CNG channel subunit (CNG6) from mouse retina. The cDNA of CNG6 encodes a peptide of 694 amino acids with a predicted molecular weight of 80 kDa. Among the CNG channel subunits, CNG6 has the highest overall similarity to the CNG4  $\beta$  subunit (47% sequence identity). CNG6 transcripts are present in a small subset of retinal photoreceptor cells and also in testis. Heterologous expression of CNG6 in human embryonic kidney 293 cells did not lead to detectable currents. However, when coexpressed with the cone photoreceptor  $\alpha$  subunit, CNG6 induced a flickering channel gating, weakened the outward rectification in the presence of extracellular  $Ca^{2+}$ , increased the sensitivity for L-cis diltiazem, and enhanced the cAMP efficacy of the channel. Taken together, the data indicate that CNG6 represents a new CNG channel  $\beta$  subunit that may associate with the CNG3  $\alpha$  subunit to form the native cone channel. **(Author's abstract)**

**Keywords:** Medicine, Cone photoreceptor, Cyclic nucleotide, Cation channel, L-cis diltiazem, Single-channel recording

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2000 February,  
(Filipiniana Analytics)  
NP

***Molecular cloning and functional expression of the potassium-dependent sodium–calcium exchanger from human and chicken retinal cone photoreceptors***

***Schnetkamp, Paul P. M. , Szerencsei, Robert T. , Prinsen, Clemens***

*Light causes a rapid lowering of cytosolic free calcium in the outer segments of both retinal rod and cone photoreceptors. This light-induced lowering of calcium is caused by extrusion via a Na–Ca exchanger located in the rod and cone outer segment plasma membrane and plays a key role in the process of light adaptation. The Na–Ca exchanger in retinal rod outer segment was shown earlier to be a novel Na–Ca+K exchanger (NCKX), and its cDNA was obtained by molecular cloning from several mammalian species. On the other hand, the proper identity of the retinal cone Na–Ca exchanger, in terms of both functional characteristics (e.g., requirement for and transport of potassium) and molecular identity, has not yet been elucidated. Here, we report the molecular cloning, intraretinal localization by in situ hybridization, and initial functional characterization of the chicken and human cone-specific Na–Ca exchangers. In addition we report the chicken rod-specific NCKX. We identified NCKX transcripts in both human and chicken cones and observed strong potassium-dependent Na–Ca exchange activity after heterologous expression of human and chicken cone NCKX cDNAs in cultured insect cells. In situ hybridization in chicken retina showed abundant rod NCKX transcripts only in rod photoreceptors, whereas abundant cone NCKX transcripts were found in most, if not all, cone photoreceptors and also in a subpopulation of retinal ganglion cells. A detailed comparison with the previously described retinal rod and brain NCKX cDNAs is presented. (Author's abstract)*

**Keywords:** *Medicine, Sodium-calcium exchange, Retina, Photoreceptor cells, Ganglion cells, Chicken, Human, Calcium homeostasis, In situ hybridization*

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2000 February,  
(Filipiniana Analytics)  
NP*

***A molecular link between inward rectification and calcium permeability of neuronal nicotinic acetylcholine  $\alpha 3\beta 4$  and  $\alpha 4\beta 2$  receptors***

***Cooper, Ellis , Haghghi, Ali***

*Many nicotinic acetylcholine receptors (nAChRs) expressed by central neurons are located at presynaptic nerve terminals. These receptors have high calcium permeability and exhibit strong inward rectification, two important physiological features that enable them to facilitate transmitter release. Previously, we showed that intracellular polyamines act as gating molecules to block neuronal nAChRs in a voltage-dependent manner, leading to inward rectification. Our goal is to identify the structural determinants that underlie the block by intracellular polyamines and govern calcium permeability of neuronal nAChRs. We hypothesize that two ring-like collections of negatively charged amino acids (cytoplasmic and intermediate rings) near the intracellular mouth of the pore mediate the interaction with intracellular polyamines and also influence calcium permeability. Using site-directed mutagenesis and electrophysiology on  $\alpha 4\beta 2$  and  $\alpha 3\beta 4$  receptors expressed in *Xenopus* oocytes, we observed that removing the five negative charges of the cytoplasmic ring had little effect on either inward rectification or calcium permeability. However, partial removal of negative charges of the intermediate ring diminished the high-affinity, voltage-dependent interaction between intracellular polyamines and the receptor, abolishing inward rectification. In addition, these nonrectifying mutant receptors showed a drastic reduction in calcium permeability. Our results indicate that the negatively charged glutamic acid residues at the intermediate ring form both a high-affinity binding site for intracellular polyamines and a selectivity filter for inflowing calcium ions; that is, a common site*

links inward rectification and calcium permeability of neuronal nAChRs. Physiologically, this molecular mechanism provides insight into how presynaptic nAChRs act to influence transmitter release. **(Author's abstract)**

**Keywords:** Medicine, Nicotinic acetylcholine receptor, Presynaptic receptors, Transmitter release, Ion permeation, Gating particles

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2000 January,  
(Filipiniana Analytics)  
NP

0418

***Motorcycle related cranio-maxillofacial injuries at a Tertiary Hospital in the Philippines***  
***Tuazon, Rene S. , de la Cruz, Rhodieleen A***

**Objective:** To describe the type and determine the number of motorcycle related craniomaxillofacial injuries that were seen by the ORL service in the emergency room of a tertiary hospital from January 2013 to December 2013.

**Methods:**

**Design:** Cross sectional retrospective chart review

**Setting:** Tertiary National University Hospital

**Participants:** One hundred nine (109) charts of patients seen at the emergency room from January 2013 to December 2013 were reviewed

**Results:** Of the 109 charts of patients involved in vehicular accidents, there were 76 documented cases of motorcycle related accidents. Of these, 91% involved males and 9% involved females. Seventy one percent (71%) did not wear helmets, of whom 36% were young adult males between the ages of 18-30 years. Those that wore helmets had a total of 27 different facial fracture sites: 19% zygomatic tripod fractures, 15% temporal bone fractures and 11% with no fractures noted. Among those who did not wear helmets 75 fractures were noted. Twenty four percent (24%) were tripod fractures, 15% temporal bone fractures and 12% maxillary fractures. Only one did not incur any fractures.

**Conclusion:** Most cranio-maxillofacial fractures seen at the emergency room were from motorcycle related injuries (70%). Despite implementation of Republic Act 10054 (The Motorcycle Helmet Act of 2009) majority of motorcycle-related accidents are still incurred by riders without helmets. **(Authors' abstract)**

**Keywords:** Medicine, Cranio-maxillofacial fractures, Motorcycle accidents, Helmet, Tripod fracture, Temporal bone fracture

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2016,  
(Filipiniana Analytics)  
NP

0419



**Music on the second stage of labor among women in their first pregnancy**  
*Elizon, Lagrimas G. , Gonzaga, Joni Inocencia , Cañada, Hazel , Bejoc, Jillian A. , Ysmael, Fleoy T. , Palompon,*

This study determined the effects of music on the duration of the second stage of labor among primigravida or women in their first pregnancy at Cebu City Medical Center. An experimental design was utilized in this study with experimental and control group. A random sampling was utilized with the following criteria considered: a) primigravida or women on their first pregnancy admitted at the Delivery Room; b) age bracket: 20-30 years old; c) no complications of pregnancy. All respondents had Normal Spontaneous Vaginal Delivery (NSVD). Each qualified respondent was chosen randomly to three conditions. A total of forty-five respondents (15 for classical music group, 15 fast music group and 15 for silence or control group) was selected. The shorter the second stage of labor, the more effective is the treatment provided. Findings revealed that the group of mothers who had no music has the shortest duration of the second stage of labor, followed by the group using fast music and the longest duration was that of the group using slow music. ANOVA computation was done which was significant at  $p=.05$ . Scheffe's Test further showed that fast music is more effective in hastening the second stage of labor than slow music and a significant difference between the slow music group and the no music group was also identified. **(Author's abstract)**

**Keywords:** Medicine, Normal Spontaneous Vaginal Delivery (NSVD), Music, Primigravida, Scheffes Test

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2011,  
(Filipiniana Analytics)  
NP

**0420**

**Naso-glabello-frontal advancement reconstruction for Chondroid syringoma of the nasal tip**  
*Ayahao, Felixberto D. , Tangco,*

**Objective:** To present a naso-glabello-frontal advancement modification of the dorsal advancement (Rintala) flap for reconstruction of an unusual case of chondroid syringoma occurring at the nasal tip.

**Methods:**

**Design:** Case Report

**Setting:** Tertiary Government Training hospital

**Patient:** One

**Results:** A 23-year-old man who presented with a nasal tip mass initially diagnosed as a benign adnexal tumor underwent excision and reconstruction with a naso-glabello-frontal advancement flap modification of the dorsal advancement flap with median brow lift. The procedure resulted in nasal tip reconstruction with minimal scars, including a horizontal upper medial brow margin scar that eventually became less apparent. Final histopathology revealed a rare benign mixed tumor, chondroid syringoma.

**Conclusion:** The naso-glabello-frontal advancement flap is a one-stage procedure that can be used to reconstruct such a cutaneous nasal defect after tumor excision. The modification observes nasal aesthetic subunits and may have a better aesthetic outcome than traditional rotational or advancement flaps. **(Authors' abstract)**

**Keywords:** Medicine, Rhinoplasty, Surgical flaps, Sweat gland neoplasm

0421

***Nasopharyngeal tuberculosis in a patient presenting with upper airway obstruction***  
***Gutierrez, Rene Louie C. , Aberin-Roldan, Fortuna Corazon A. , Onofre, Rubiliza DC. , Nieves, Crist***

**Objective:** To report a rare case of upper airway obstruction from multiple pharyngeal masses due to nasopharyngeal tuberculosis in a 22-year-old male.

**Methods:**

Design:	Case	Report	
Setting:	Tertiary	Government	Hospital
Patient:		One	

**Result:** A 22-year-old Filipino male with upper airway obstruction from multiple pharyngeal masses was diagnosed to have nasopharyngeal tuberculosis by histopathology. He improved after six months of anti-tuberculosis medications.

**Conclusion:** Tuberculosis should not be overlooked in the differential diagnoses of nasopharyngeal masses because of the difference in its management, and swift and adequate cure, compared to other nasopharyngeal pathologies. (Author's abstract)

**Keywords:** Medicine, Tuberculosis, Nasopharynx, Mycobacteria, Hypopharyngeal mass, Upper airway obstruction

0422

***Nerve growth factor (NGF) augments cortical and hippocampal cholinergic functioning after p75NGF receptor-mediated deafferentation but impairs inhibitory avoidance and induces fear-related behaviors***

***Thal, Leon J. , Ramirez, Gilbert A. , Winkler, JÃ¼rgen, Waite, Jeren***

Nerve growth factor (NGF) enhances cholinergic functioning in animals with a compromised cholinergic basal forebrain (CBF). Immunotoxic lesions targeting low-affinity NGF receptor (p75NGF receptor)-bearing CBF neurons provide a selective model for testing the effects of NGF on residual cholinergic neurons. Rats received PBS or the immunotoxin 192IgG-saporin (192Sap) intracerebroventricularly at two doses (1 or 2.7 µg) known to produce different degrees of cholinergic deficit. Seven weeks after lesioning, half of each group received either NGF or cytochrome c intracerebroventricularly for 7 weeks. The two doses of 192Sap produced 50 and 80% depletions of choline acetyltransferase (ChAT) activity in the neocortex and hippocampus. NGF produced the greatest increase in ChAT activity in controls, intermediate in low-lesioned, and smallest in highly lesioned animals. NGF-treated

animals showed reduced weight gain, hyper-responsiveness to acoustic stimuli, and decreased inhibitory avoidance. Although general motor behavior was affected by neither 192Sap nor NGF in an open field task, highly lesioned rats took longer to reach the platform during water maze testing. Impaired spatial orientation in finding a hidden platform at the previously acquired position was mitigated by NGF. Hypertrophic changes of residual CBF neurons, Schwann cell hyperplasia, and aberrant axonal sprouting around the medulla were observed in NGF-treated animals only, independent of the preexisting lesion. Our results indicate that NGF has a limited capacity to enhance functioning of residual CBF neurons. More importantly, NGF augmented fear-related behaviors and adverse neuroproliferative changes that may restrict its therapeutic use. (**Author's abstract**)

**Keywords:** Medicine, Basal forebrain, Immunotoxin, 192IgG-saporin, NGF, Water maze, Inhibitory avoidance, Startle response, Choline acetyltransferase, Low-affinity nerve growth factor receptor

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(Filipiniana Analytics)  
NP

0423

***Nerve injury induces gap junctional coupling among axotomized adult motor neurons***  
***Pinter, Martin J. , Pereda, Alberto , Chang, Qiang, Balice-Gordon, Rit***

Neonatal spinal motor neurons are electrically and dye-coupled by gap junctions, but coupling is transient and disappears rapidly after birth. Here we report that adult motor neurons become recoupled by gap junctions after peripheral nerve injury. One and 4–6 weeks after nerve cut, clusters of dye-coupled motor neurons were observed among axotomized, but not control, lumbar spinal motor neurons in adult cats. Electrical coupling was not apparent, probably because of the electrotonic distance between dendrodendritic gap junctions and the somatic recording location. Analyses of gap junction protein expression in cat and rat showed that the repertoire of connexins expressed by normal adult motor neurons, Cx36, Cx37, Cx40, Cx43, and Cx45, was unchanged after axotomy. Our results suggest that the reestablishment of gap junctional coupling among axotomized adult motor neurons may occur by modulation of existing gap junction proteins that are constitutively expressed by motor neurons. After injury, interneuronal gap junctional coupling may mediate signaling that maintains the viability of axotomized motor neurons until synaptic connections are reestablished within their targets. (**Author's abstract**)

**Keywords:** Medicine, Gap junction, Motor neuron, Skeletal muscle, Nerve, Connexin, Axotomy, Injury

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2000,  
(Filipiniana Analytics)  
NP

0424

***Neural sensitivity to interaural time differences: beyond the jeffress model***

Interaural time differences (ITDs) are a major cue for localizing the azimuthal position of sounds. The dominant models for processing ITDs are based on the Jeffress model and predict neurons that fire maximally at a common ITD across their responsive frequency range. Such neurons are indeed found in the binaural pathways and are referred to as “peak-type.” However, other neurons discharge minimally at a common ITD (trough-type), and

others do not display a common ITD at the maxima or minima (intermediate-type). From recordings of neurons in the auditory cortex of the unanesthetized rabbit to low-frequency tones and envelopes of high-frequency sounds, we show that the different response types combine to form a continuous axis of best ITD. This axis extends to ITDs well beyond that allowed by the head width. In Jeffress-type models, sensitivity to large ITDs would require neural delay lines with large differences in path lengths between the two ears. Our results suggest instead that sensitivity to large ITDs is created with short delay lines, using neurons that display intermediate- and trough-type responses. We demonstrate that a neuron's best ITD can be predicted from (1) its characteristic delay, a rough measure of the delay line, (2) its characteristic phase, which defines the response type, and (3) its best frequency for ITD sensitivity. The intermediate- and trough-type neurons that have large best ITDs are predicted to be most active when sounds at the two ears are decorrelated and may transmit information about auditory space other than sound localization. **(Author's abstract)**

**Keywords:** Medicine, Auditory neurophysiology, Auditory pathways, Interaural temporal disparities, Sound localization, Low-frequency hearing, Low-frequency signals

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(Filipiniana Analytics)  
NP

0425

***Neural systems underlying the recognition of familiar and newly learned faces***  
**Binder, Jeffrey R. , Mead, Larissa A. , Mayer, Andrew R. , Seidenberg, Michael , Leveroni, Catherine L., Rao, Stephe**

Memory for famous faces can be used to examine the neural systems underlying retrieval from long-term memory. To date, there have been a limited number of functional neuroimaging investigations examining famous face recognition. In this study, we compared recognition of famous faces to recognition of newly learned faces. Whole-brain, event-related functional magnetic resonance imaging was used to image regional changes in neural activity in 11 subjects during the encoding of unfamiliar faces and during familiarity judgments for: (1) newly learned faces, (2) unfamiliar face distractors, and (3) famous faces. Image analyses were restricted to correct recognition trials. Recognition accuracy and response time to famous and recently learned faces were equivalent. Recognition of famous faces was associated with a widespread network of bilateral brain activations involving the prefrontal, lateral temporal, and mesial temporal (hippocampal and parahippocampal regions) regions compared to recognition of recently encoded faces or unfamiliar faces seen for the first time. Findings are discussed in relation to current proposals concerning the neural regions thought to participate in long-term memory retrieval and, more specifically, in relation to retrieval of information from the person identity semantic system. **(Author's abstract)**

**Keywords:** Medicine, Event-related fMR, Famous faces, Frontal, Temporal, Hippocampus, Recognition memory, Person-identity system, Memory, Face recognition, Temporofrontal cortex

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NP

0426

**Neuronal  $\alpha$ -Bungarotoxin receptors are  $\alpha 7$  subunit homomers**  
**Drisdell, Renaldo C., Green, William**

Nicotinic acetylcholine receptors in the nervous system are heterogeneous with distinct pharmacological and functional properties resulting from differences in post-translational processing and subunit composition. Because of nicotinic receptor diversity, receptor purification and biochemical characterization have been difficult, and the precise subunit composition of each receptor subtype is poorly characterized. Evidence is presented that  $\alpha$ -bungarotoxin (Bgt)-binding nicotinic receptors found in pheochromocytoma 12 (PC12) cells are pentamers composed solely of  $\alpha 7$  subunits. Metabolically labeled, affinity-purified Bgt receptors (BgtRs) consisted of a single 55 kDa band on SDS gels, which was recognized by anti- $\alpha 7$  antibodies on immunoblots. Isoelectric focusing separated the 55 kDa band into multiple spots, all recognized by anti- $\alpha 7$  antibodies and, therefore, each a differentially processed  $\alpha 7$  subunit. Cell-surface BgtR subunits, cross-linked to each other and  $^{125}\text{I}$ -Bgt, migrated on gels as a ladder of five bands with each band a multiple of an  $\alpha 7$  subunit monomer. Similar characteristics of BgtRs from rat brain suggest that they, like PC12 BgtRs, are  $\alpha 7$  pentamers containing differentially processed  $\alpha 7$  subunits. **(Author's abstract)**

**Keywords:** Medicine,  $\alpha$ -bungarotoxin, Nicotine, Neuronal nicotinic receptors, PC12 cells, Rat brain, Protein structure, Posttranslational modification

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*JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 1, 133-139*  
2000 January,  
(Filipiniana Analytics)  
NP

0427

**Neuronal correlates for preparatory set associated with pro-saccades and anti-saccades in the primate frontal eye field**  
**Munoz, Douglas P., Everling,**

Diversity in behavioral responses to sensory stimuli has been attributed to variations in preparatory set. Variability in oculomotor responses toward identical visual stimuli has been well documented, but the neuronal processes underlying this variability are poorly understood. Here, we report evidence for set-related activity for saccadic eye movements in single neurons in the frontal eye field (FEF) in monkeys trained on a task in which they either had to look toward a visual stimulus (pro-saccade) or away from the stimulus (anti-saccade) depending on a previous instruction. A portion of FEF neurons were identified as neurons projecting directly to the superior colliculus (SC) with antidromic activation techniques. Saccade-related neurons in the FEF had lower prestimulus and stimulus-related activity on anti-saccade trials compared with pro-saccade trials. The level of prestimulus activity correlated with saccadic reaction times, express saccade occurrence, and errors in the anti-saccade task. In addition, saccade-related activity in the FEF was higher for pro-saccades than for anti-saccades. These results demonstrate that the direct descending pathway from the FEF to the SC carries preparatory set-related activity for pro-saccades and anti-saccades. The results also provide insights into the neuronal basis of variations in saccadic reaction times and in the control of the prepotent response to glance to a flashed stimulus. **(Author's abstract)**

**Keywords:** Medicine, Frontal eye field, Eye movement, Anti-saccade, Motor preparation, Saccade, Frontal lobe, Superior colliculus, Monkey

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*JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 1, 387-400*  
2000 January,  
(Filipiniana Analytics)  
NP

**Neuronal inwardly rectifying K<sup>+</sup> channels differentially couple to PDZ proteins of the PSD-95/SAP90 family**

Sheng, Morgan , Karschin, Andreas , Veh, RÃ¼diger W. , DÃ¶ring, Frank , Wischmeyer, Erhard , Nehring, R

Several signaling proteins clustered at the postsynaptic density specialization in neurons harbor a conserved C-terminal PDZ domain recognition sequence (X-S/T-X-V/I) that mediates binding to members of the PSD-95/SAP90 protein family. This motif is also present in the C termini of some inwardly rectifying K<sup>+</sup> (Kir) channels. Constitutively active Kir2 channels as well as G protein-gated Kir3 channels, which are fundamental for neuronal excitability, were analyzed as candidates for binding to PSD-95/SAP90 family members. Therefore C termini of Kir2.1(+), Kir2.3(+), Kir2.4(-), Kir3.1(-), Kir3.2(+), Kir3.3(+) and Kir3.4(-) subunits (+, motif present; -, motif absent) were used as baits in the yeast two-hybrid assay to screen for in vivo interaction with PDZ domains 1-3 of PSD-95/SAP90. In contrast to Kir2.1 and Kir2.3, all Kir3 fragments failed to bind PSD-95 in this assay, which was supported by the lack of coimmunoprecipitation and colocalization of the entire proteins in mammalian cells. A detailed analysis of interaction domains demonstrated that the C-terminal motif in Kir3 channels is insufficient for binding PDZ domains. Kir2.1 and Kir2.3 subunits on the other hand coprecipitate with PSD-95. When coexpressed in a bicistronic internal ribosome entry site expression vector in HEK-293 cells macroscopic and elementary current analysis revealed that PSD-95 suppressed the activity of Kir2.3 channels by >50%. This inhibitory action of PSD-95, which predominantly affects the single-channel conductance, is likely attributable to a molecular association with additional internal interaction sites in the Kir2.3 protein. **(Author's abstract)**

**Keywords:** Medicine, Inwardly rectifying, Kir channel, GIRK, Postsynaptic density, Chapsyns, MAGUK, Yeast two-hybrid

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NP*

**Neuronal pyruvate carboxylation supports formation of transmitter glutamate**

BrÃ¼hne, Anders , Hassel, Bj

Release of transmitter glutamate implies a drain of  $\alpha$ -ketoglutarate from neurons, because glutamate, which is formed from  $\alpha$ -ketoglutarate, is taken up by astrocytes. It is generally believed that this drain is compensated by uptake of glutamine from astrocytes, because neurons are considered incapable of de novo synthesis of tricarboxylic acid cycle intermediates, which requires pyruvate carboxylation. Here we show that cultured cerebellar granule neurons form releasable [<sup>14</sup>C]glutamate from H<sup>14</sup>CO<sub>3</sub> - and [1-<sup>14</sup>C]pyruvate via pyruvate carboxylation, probably mediated by malic enzyme. The activity of pyruvate carboxylation was calculated to be approximately one-third of the pyruvate dehydrogenase activity in neurons. Furthermore, intrastriatal injection of NaH<sup>14</sup>CO<sub>3</sub> or [1-<sup>14</sup>C]pyruvate labeled glutamate better than glutamine, showing that pyruvate carboxylation occurs in neurons in vivo. This means that neurons themselves to a large extent may support their release of glutamate, and thus entails a revision of the current view of glial-neuronal interactions and the importance of the glutamine cycle. **(Author's abstract)**

**Keywords:** Medicine, Transmitter glutamate, Pyruvate carboxylation, CO<sub>2</sub> fixation, Malic enzyme, Anaplerosis, 3-Nitropropionic acid

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NP

0430

**Neuronal–Glial interactions mediated by Interleukin-1 enhance neuronal acetylcholinesterase activity and mRNA expression**

**Mrak, Robert E. , Barger, Steven W. , Sheng, Jin G. , Kang, Jinsong , Liu, Ling , Li, Yuekui, Griffin W. S**

Cholinergic dysfunction in Alzheimer's disease has been attributed to stress-induced increases in acetylcholinesterase (AChE) activity. Interleukin-1 (IL-1) is overexpressed in Alzheimer's disease, and stress-related changes in long-term potentiation, an ACh-related cerebral function, are triggered by interleukin-1. Microglial cultures (N9) synthesized and released IL-1 in response to conditioned media obtained from glutamate-treated primary neuron cultures or PC12 cells. This conditioned media contained elevated levels of secreted  $\beta$ -amyloid precursor protein (sAPP). Naive PC12 cells cocultured with stimulated N9 cultures showed increased AChE activity and mRNA expression. These effects on AChE expression and activity could be blocked by either preincubating the glutamate-treated PC12 supernatants with anti-sAPP antibodies or preincubating naive PC12 cells with IL-1 receptor antagonist. These findings were confirmed in vivo; IL-1-containing pellets implanted into rat cortex also increased AChE mRNA levels. Neuronal stress in Alzheimer's disease may induce increases in AChE expression and activity through a molecular cascade that is mediated by sAPP-induced microglial activation and consequent overexpression of IL-1. (**Author's abstract**)

**Keywords:** Medicine, Acetylcholinesterase, Alzheimer's disease,  $\beta$ -amyloid precursor protein, Choline acetyltransferase, Cholinergic systems, Interleukin-1, Neuronal cultures, Neuronal stress, PC12 cells

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0431

**Nicotine enhances the biosynthesis and secretion of transthyretin from the choroid plexus in rats: implications for B-Amyloid formation**

**Sharp, Burt M. , Blaner, William S. , Matta, Shannon G. , Kane, Justin K. , Li, M**

Epidemiological studies indicated that cigarette smoking protects against the development of several neurodegenerative disorders, including Alzheimer's disease (AD). However, the molecular mechanism(s) underlying this is poorly understood. To gain insight into these protective effects, we used differential display PCR (DD-PCR) to amplify RNA from various brain regions of rats self-administering (SA) nicotine compared with yoked-saline controls. We found that the transthyretin (TTR) gene, whose product has been shown to bind to amyloid  $\beta$  (A $\beta$ ) protein and prevent A $\beta$  aggregation, was more abundantly expressed (~1.5- to 2.0-fold) in the brainstem and hippocampus (areas containing choroid plexus) of nicotine SA rats. Subsequently, quantitative reverse

transcription-PCR analysis confirmed these DD-PCR findings and demonstrated that nicotine increased TTR mRNA levels in these regions in a time- and dose-dependent manner. Significantly higher TTR protein concentrations were also detected in the ventricular CSF of nicotine-treated rats. In contrast, no differences either in plasma TTR or in CSF and plasma retinol-binding protein were detected. Immunohistochemical analysis showed that immunoreactive TTR was 41.5% lower in the choroid plexus of nicotine-treated rats compared with the saline controls. On the basis of these data, we speculate that the protective effects of nicotine on the development of AD may be attributable, in part, to the increased biosynthesis and secretion of TTR from the choroid plexus. These findings also point toward new approaches that may take advantage of the potentially novel therapeutic effects of nicotinic agonists in patients with AD. **(Author's abstract)**

**Keywords:** Medicine, Nicotine, Transthyretin, B-amyloid, Alzheimers disease, Choroid plexus, Differential display PCR

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0432

***Nicotinic receptor activation in human cerebral cortical interneurons: a mechanism for inhibition and disinhibition of neuronal networks***

***Eisenberg, Howard M. , Pereira, Edna F. R. , Alkondon, Manickavasagom, Albuquerque, Eds***

Cholinergic control of the activity of human cerebral cortical circuits has long been thought to be accounted for by the interaction of acetylcholine (ACh) with muscarinic receptors. Here we report the discovery of functional nicotinic receptors (nAChRs) in interneurons of the human cerebral cortex and discuss the physiological and clinical implications of these findings. The whole-cell mode of the patch-clamp technique was used to record responses triggered by U-tube application of the nonselective agonist ACh and of the  $\alpha 7$ -nAChR-selective agonist choline to interneurons visualized by means of infrared-assisted videomicroscopy in slices of the human cerebral cortex. Choline induced rapidly desensitizing whole-cell currents that, being sensitive to blockade by methyllycaconitine (MLA; 50 nM), were most likely subserved by an  $\alpha 7$ -like nAChR. In contrast, ACh evoked slowly decaying whole-cell currents that, being sensitive to blockade by dihydro- $\beta$ -erythroidine (DH $\beta$ E; 10  $\mu$ M), were most likely subserved by an  $\alpha 4\beta 2$ -like nAChR. Application of ACh (but not choline) to the slices also triggered GABAergic postsynaptic currents (PSCs). Evidence is provided that ACh-evoked PSCs are the result of activation of  $\alpha 4\beta 2$ -like nAChRs present in preterminal axon segments and/or in presynaptic terminals of interneurons. Thus, nAChRs can relay inhibitory and/or disinhibitory signals to pyramidal neurons and thereby modulate the activity of neuronal circuits in the human cerebral cortex. These mechanisms, which appear to be retained across species, can account for the involvement of nAChRs in cognitive functions and in certain neuropathological conditions. **(Author's abstract)**

**Keywords:** Medicine, Acetylcholine, Choline, GABA, Patch-clamp, Methyllycaconitine, Dihydro- $\beta$ -erythroidine

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0433



## ***Ninjurin2, a novel homophilic adhesion molecule, is expressed in mature sensory and enteric neurons and promotes neurite outgrowth***

***Milbrandt, Jeffrey , Araki, Tos***

*A large number of cell adhesion molecules mediate cell-to-cell and cell-to-extracellular matrix interaction during development, differentiation and regeneration of the peripheral nervous system. Here, we report the identification of a novel cell surface adhesion molecule, ninjurin2 (for nerve injury induced protein 2). Ninjurin2 is a homolog of a homophilic cellular adhesion molecule, ninjurin1, that was previously isolated as a gene induced in Schwann cells after nerve injury. Ninjurin1 and 2 share conserved hydrophobic regions for their transmembrane domains; however, they do not contain comparable adhesion motifs nor do they interact with each other. In the peripheral nervous system, ninjurin2 is expressed constitutively in mature sensory and enteric neurons but not in glial cells or in autonomic ganglia. Ninjurin2 is upregulated in Schwann cells surrounding the distal segment of injured nerve with a time course similar to that of ninjurin1, neural CAM, and L1. Ninjurin2 promotes neurite outgrowth from primary cultured dorsal root ganglion neurons, presumably via homophilic cellular interactions. Ninjurin2 is also highly expressed in hematopoietic and lymphatic tissues. Finally, the ninjurin2 gene is located on human chromosome 12p13 in which several disorders of unknown etiology have been mapped, including inflammatory bowel disease and acrocallosal syndrome. (Author's abstract)*

**Keywords:** *Medicine, Cell adhesion, Postmitotic, Peripheral nervous system, Hematopoietic organ, Lymphatic organ, Chromosome 12p13, Inflammatory bowel disease, Acrocallosal syndrome*

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0434

## ***Nitric oxide influences injury-induced microglial migration and accumulation in the Leech CNS***

***Muller, Kenneth J. , Sahley, Christie L. , Kumar, Shanta M. , Chen,***

*Damage to the leech or mammalian CNS increases nitric oxide (NO) production and causes accumulation of phagocytic microglial cells at the injury site. The aim of this study was to determine whether NO plays a role in microglial migration and accumulation at lesions in which NO is generated by a rapidly appearing endothelial nitric oxide synthase (eNOS) in leeches. Immunohistochemistry and cytochemistry demonstrated active eNOS before and throughout the period of microglial accumulation at the lesion. Decreasing NO synthesis by application of the NOS inhibitor N<sup>w</sup>-nitro-l-arginine methyl ester (1 mM) significantly reduced microglial accumulation, whereas its inactive enantiomer N<sup>w</sup>-nitro-D-arginine methyl ester (1 mM) resulted in microglial accumulation similar to that in crushed controls. Increasing NO with the donor spermine NONOate (SPNO) (1 mM) also inhibited accumulation, but not in the presence of the NO scavenger 2-(4-carboxyphenyl)-4,4,5,5-tetramethylimidazole-oxyl-3-oxide (50 μm). The effect of SPNO was reversed by washout. SPNO application reduced average microglial migratory speeds and even reversibly arrested cell movement, as measured in living nerve cords. These results suggest that NO produced at a lesion may be a stop signal for microglia to accumulate there and that it can act on microglia early in their migration. Thus, NO may assume a larger role in nerve repair and recovery from injury by modulating accumulation of microglia, which appear to be important for axonal regeneration. (Author's abstract)*

**Keywords:** *Medicine, Nitric oxide, Cell migration, Endothelial nitric oxide synthase, Hirudo medicinalis, Nerve repair, Nerve regeneration, Microglia*

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***Nodular fasciitis in a one-year-old male: a diagnostic dilemma***  
***Sia-Vargas, Lily L. , Fernando, Adrian F. , Chua, Anto***

**Objectives:** To present a rare case of nodular fasciitis presenting as a supra-auricular mass.

**Methods:**

<b>Design:</b>		Case		Report
<b>Setting:</b>	Private	Tertiary	University	Hospital
<b>Patient:</b>				One

**Results:** A one-year-old boy presented with an initially painless, left supra-auricular mass that rapidly enlarged from < 1 cm to 3 cm (widest diameter) in a two-month period. Sarcoma was initially considered over an inflammatory process as the mass was non-responsive to antibiotic therapy. Fine-Needle Aspiration Cytology (FNAC) and High-Resolution Computed Tomography (HRCT) with contrast revealed benign cytologic and radiologic findings making nodular fasciitis the primary impression. The patient eventually underwent complete surgical excision of the left supra-auricular mass. Histopathologic findings then showed a stroma rich in collagen and myxoid ground substance and loose array of short S-shaped fascicle cells with scattered lymphocytes, macrophages and red blood cells consistent with nodular fasciitis.

**Conclusion:** Nodular fasciitis is a rare benign myofibroblastic soft tissue tumor which typically presents as a rapidly progressive nodular lesion in the head and neck region of the young pediatric age group. Cytopathologic recognition with FNA is a challenge. The gold standard of treatment is still surgical and in most reported cases, curative. More importantly, early clinical recognition and correlation with radiologic and histopathologic appearance is very important to avoid unnecessary work-ups and over-treatment. **(Authors' abstract)**

**Keywords:** Medicine, Nodular fasciitis, Pseudosarcomatous fasciitis, Aggressive fibromatosis, Desmoid tumor

***Nonintestinal-type sinonasal adenocarcinoma***  
***Carnate, Jr., J***

Malignant glandular neoplasms of the sinonasal tract originate either from the respiratory epithelium or the underlying mucoserous glands. They present with a confusing array of morphologic features and this is reflected in the nomenclature of these tumors. These tumors are grouped into three main types: salivary gland-type, intestinal type and non-intestinal type adenocarcinomas. Salivary gland-type adenocarcinomas of the nasal cavity histologically resemble their analogous lesions in the

major and minor salivary glands. Adenoid cystic carcinoma is the most common although almost any of those described in the salivary glands can occur in the nasal cavity as well. Intestinal type adenocarcinomas resemble glandular neoplasms that occur in the small and large intestines. The more well-differentiated ones resemble colonic tubular and villous adenomas while those at the other end of the spectrum resemble moderately to poorly differentiated colonic adenocarcinomas. Others may be composed of goblet cells or resemble colonic mucinous carcinomas. Nonintestinal-type adenocarcinomas are the most diverse of the lot and are composed of adenocarcinomas whose morphologies do not easily fit in into the previous two categories. For purposes of prognostication, they are divided into low-grade and high-grade categories based on architecture, nuclear features and mitotic activity. Low-grade tumors have uniform cells arranged in compact acini, back to back, confluent glands, cystic spaces and papillae. They maintain tall columnar to cuboidal arrangements without much stratification. Cytoplasm is often abundant but variable in appearance – basophilic, granular, mucinous, eosinophilic and also oncocytic. Nuclear atypia is mild to moderate with few mitoses. High-grade tumors are mostly solid, show prominent nuclear pleomorphism, nucleoli and mitotic activity. **(Author's abstract)**

**Keywords:** Medicine, Malignant glandular neoplasm, Salivary gland-type adenocarcinomas, Intestinal type adenocarcinomas, Nonintestinal-type adenocarcinomas

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0437

### **Nonkeratinizing carcinoma of the sinonasal tract: a diagnosis of confusing nomenclature**

**Md Pauzi, Suria Hayati , Tan, Geok Chin , Abdul Rashid, Nur Hashima , Husain, Salina , Gendeh, Balwant Singh , Yunus, Mohd Razif M**

**Objective:** To describe a rare case of nonkeratinizing carcinoma of the sinonasal tract and review the literature on the nomenclature of its many synonyms.

**Methods:**

<b>Design:</b>	Case	Report
<b>Setting:</b>	Tertiary	Referral Center
<b>Patient:</b>		One

**Results:** A 45-year-old female presented with a 6-month history of left nasal obstruction associated with epistaxis. Computed tomography revealed a mass expanding the left nasal cavity with the epicenter arising from the anterior ethmoidal air cells. Endoscopic resection of the tumor was carried out but as there was residual tumor, she then underwent endoscopic-assisted medial maxillectomy via a lateral rhinotomy. A subsequent computed tomography scan showed residual tumor adhering to the ipsilateral periorbita. The patient has so far declined intensity modulated radiotherapy that was advised though she is still under regular follow-up.

**Conclusion:** Nonkeratinizing carcinoma of the sinonasal tract is a rare entity and there are very few reports concerning this type of malignancy. This may be partly due to its many synonyms, such as cylindrical cell carcinoma, Schneiderian carcinoma and transitional cell carcinoma. Nomenclature of this tumor should be standardized to avoid confusion and misdocumentation. **(Authors' abstract)**

**Keywords:** Medicine, Nonkeratinizing carcinoma, Schneiderian carcinoma, Transitional cell carcinoma, Cylindrical cell carcinoma, Ringertz carcinoma, Respiratory epithelial carcinoma

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***A novel human opsin in the inner retina***

**Moreira, Ernesto F. , Hayes, William PÁr , Jiang, Guisen , Rodriguez, Ignacio R. , Provencio, Ignacio, Rollag, Mar**

*Here we report the identification of a novel human opsin, melanopsin, that is expressed in cells of the mammalian inner retina. The human melanopsin gene consists of 10 exons and is mapped to chromosome 10q22. This chromosomal localization and gene structure differs significantly from that of other human opsins that typically have four to seven exons. A survey of 26 anatomical sites indicates that, in humans, melanopsin is expressed only in the eye. In situ hybridization histochemistry shows that melanopsin expression is restricted to cells within the ganglion and amacrine cell layers of the primate and murine retinas. Notably, expression is not observed in retinal photoreceptor cells, the opsin-containing cells of the outer retina that initiate vision. The unique inner retinal localization of melanopsin suggests that it is not involved in image formation but rather may mediate nonvisual photoreceptive tasks, such as the regulation of circadian rhythms and the acute suppression of pineal melatonin. The anatomical distribution of melanopsin-positive retinal cells is similar to the pattern of cells known to project from the retina to the suprachiasmatic nuclei of the hypothalamus, a primary circadian pacemaker. (Author's abstract)*

**Keywords:** *Medicine, Circadian, Melanopsin, Opsin, Photoreceptor, Retina, Retinal ganglion cell*

***Novel mechanism of massive photoreceptor degeneration caused by mutations in the trp gene of drosophila***

**Minke, Baruch , Baek, Kwanghee , Geng, Chaoxian , Bowman, John , Strong, Lydia L. R. , Park, Soyeon , Hong, Young Seok , Ben-Ami, Hagit Cohen , Yoon, Jaeseung, Pak, Willia**

*The Drosophila trp gene encodes a light-activated Ca<sup>2+</sup> channel subunit, which is a prototypical member of a novel class of channel proteins. Previously identified trp mutants are all recessive, loss-of-function mutants characterized by a transient receptor potential and the total or near-total loss of functional TRP protein. Although retinal degeneration does occur in these mutants, it is relatively mild and slow in onset. We report herein a new mutant, TrpP365 , that does not display the transient receptor potential phenotype and is characterized by a substantial level of the TRP protein and rapid, semi-dominant degeneration of photoreceptors. We show that, in spite of its unusual phenotypes, TrpP365 is atrp allele because aTrpP365 transgene induces the mutant phenotype in a wild-type background, and a wild-type trp transgene in a TrpP365 background suppresses the mutant phenotype. Moreover, amino acid alterations that could cause the TrpP365 phenotype are found in the transmembrane segment region of the mutant channel protein. Whole-cell recordings clarified the mechanism underlying the retinal degeneration by showing that the TRP channels of TrpP365 are constitutively active. Although*

several genes, when mutated, have been shown to cause retinal degeneration in *Drosophila*, the underlying mechanism has not been identified for any of them. The present studies provide evidence for a specific mechanism for massive degeneration of photoreceptors in *Drosophila*. Insofar as some human homologs of TRP are highly expressed in the brain, a similar mechanism could be a major contributor to degenerative disorders of the brain. (Author's abstract)

**Keywords:** *Medicine, TRP Ca<sup>2+</sup>channel, Photoreceptor degeneration, Novel mechanism of neuronal cell death, Semi-dominant trp mutant, Constitutive channel activity, Drosophila*

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0440

***Nursing program and patient watchers' satisfaction on the quality of nursing care in Bukidnon Provincial Hospital, Malaybalay City***

***Tiu, Jr., Richard B. , Pellazar, Dennis Daniel I. , Macapundag, Qamarah R. , Diola, Anthony Ashly G., Vitorillo, Rory P. , Dalman, Judit***

*This descriptive study was conducted to determine the relationship of the Nursing Program and Patient Watchers' Satisfaction on the Quality of Nursing Care provided by the Nurses at Bukidnon Provincial Hospital in Malaybalay City, Bukidnon. In context, the study sought to answer the following aspects: What is the type of Nursing Program of the Staff Nurses, the level of patient-watchers' satisfaction on the quality of Nursing Care provided by the nurses in terms of their roles as care provider, advocate and as a teacher, and the relationship between the Nursing Program and the patient-watchers' satisfaction on the quality of nursing care provided. The findings of the study are; of the 21 nurses at the Bukidnon Provincial Hospital, 62% finished the Bachelor of Science in Nursing program through taking Associate in Health Science Education and 38% finished on a pure Bachelor of Science in Nursing program. In terms of patient-watchers' profile, majority belong to the 40 years old and above bracket; most are females; High School graduates; and majority of the respondents are in-laws or others who could be house-helpers or hired watchers of the patients. The patient-watchers were satisfied with the nursing care provided by the nurses particularly in terms of performing their roles as care providers, advocates and educators. Based on the findings, the following conclusions are came up: The nurses working at the hospital comprised of those who either finished the Associate in Health Science Education and Bachelor of Science in Nursing programs. Most of the patient-watchers are in their forties and above age; high school graduates and household members, either helpers or paid watchers (others). The patient-watcher was generally satisfied on the nursing care provided by the nurses as they assumed the roles of care providers, advocates, and as teachers to the patients. Whether the staff-nurses were graduates of the Associate in Health Science Education and Bachelor of Science in Nursing programs, these facts did not create any difference at all in the satisfactory performance they have shown to their patients and as observed by the patient-watchers. (Author's abstract)*

**Keywords:** *Medicine*

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2009,  
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### **Odors elicit three different oscillations in the turtle olfactory bulb**

Zochowski, Michal R. , Wachowiak, Matt , Cohen, Lawrence B. , Lam, Yi

We measured the spatiotemporal aspects of the odor-induced population response in the turtle olfactory bulb using a voltage-sensitive dye, RH414, and a 464-element photodiode array. In contrast with previous studies of population activity using local field potential recordings, we distinguished four signals in the response. The one called DC covered almost the entire area of the olfactory bulb; in addition, three oscillations, named rostral, middle, and caudal according to their locations, occurred over broad regions of the bulb. In a typical odor-induced response, the DC signal appeared almost immediately after the start of the stimulus, followed by the middle oscillation, the rostral oscillation, and last, the caudal oscillation. The initial frequencies of the three oscillations were 14.1, 13.0, and 6.6 Hz, respectively. When the rostral and caudal oscillations occurred together, their frequencies differed by a factor of  $1.99 \pm 0.01$ .

The following evidence suggests that the four signals are functionally independent: (1) in different animals some signals could be easily detected whereas others were undetectable; (2) the four signals had different latencies and frequencies; (3) the signals occurred in different locations and propagated in different directions; (4) the signals responded differently to changes in odor concentration; (5) the signals had different shapes; and (6) the rostral and caudal signals added in a simple, linear manner in regions where the location of the two signals overlapped. However, the finding that the frequency of the rostral oscillation is precisely two times that of the caudal oscillation suggests a significant relationship between the two.

The location of the caudal oscillation in the bulb changed from cycle to cycle, implying that different groups of neurons are active in different cycles. This result is consistent with the earlier findings in the olfactory system of the locust (Wehr and Laurent, 1996).

Our results suggest an additional complexity of parallel processing of olfactory input by multiple functional population domains. (**Author's abstract**)

**Keywords:** Medicine, Optical recording, Voltage-sensitive dyes, Olfactory bulb, Oscillations, Population signals, Odors

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### **Olfactory neuroblastoma**

Carnate, Jr., J

Olfactory neuroblastomas (esthesioneuroblastomas, ONB) are rare malignant neoplasms that arise from sensory neuroepithelial (neuroectodermal) olfactory cells found in the superior nasal concha and the cribriform plate of the ethmoid sinus. ONBs comprise approximately 5% of sinonasal tract malignancies, affect both genders equally and primarily involve the middle aged adult group (range 3 – 79 years). The most common presenting symptoms are unilateral nasal obstruction, epistaxis and a fairly slow-growing mass high in the nasal cavity or ethmoid region. Anosmia is also characteristic. A classic, though advanced, radiologic presentation is that of a “dumbbell-shaped” mass on either side of the cribriform plate, with an expansion into the nasal vault and an opposite expansion into the intracranial cavity. (**Authors' abstract**)

**Keywords:** *Medicine, Olfactory neuroblastoma , Unilateral nasal obstruction, Anosmia, Malignant small round cell tumor*

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0443

***Orbital floor fracture reconstruction using conchal auricular cartilage graft***  
***Gutierrez, Rene Louie C. , Onofre, Rubili***

*Orbital wall fractures result from external impact injuries which cause an abrupt increase in intraorbital pressure.1 Patients usually present to the emergency room with periorbital swelling and limited eye movements, with or without changes in vision. Relatively common in the Philippines, these fractures are frequently caused by violent assault followed by vehicular accidents involving motorcycles.2 Among 119 maxillofacial trauma cases seen and treated by the Department of Otorhinolaryngology of the East Avenue Medical Center from 2008-2009, 42 were diagnosed as cases of orbital fractures with 36% having concomitant involvement of the orbital floor. Various techniques in diagnosis and treatment developed in the past 20 years, each having its own strengths and weaknesses. The challenge of choosing which among these methods will best achieve the goals of function and aesthetics always confronts surgeons particularly in a developing country setting. We present a case of bilateral orbital floor fractures with diplopia repaired with conchal auricular cartilage graft in a 22-year-old female. (Authors' abstract)*

**Keywords:** *Medicine, Orbital floor fracture reconstruction, Conchal auricular cartilage graft, Orbital wall fractures*

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0444

***Otorhinolaryngologic manifestations of human immunodeficiency virus infection in Manila, the Philippines***

***Tactacan Abrenica, Rosario Jessica F. , Chua, Antonio H., Arriola, Anna Carliss***

**Objective:** *To determine the prevalence of otorhinolaryngologic (ENT) manifestations in people living with Human Immunodeficiency Virus (HIV) infection seen in our institutions and to determine the association of these manifestations with age, sex, CD4 count and antiretroviral treatment.*

**Methods:**

**Design:** *Cross-sectional Study*

**Setting:** *Two Tertiary Government Hospitals*

**Subjects:** Adult patients (>19 years old) confirmed to be HIV- infected were seen at Jose R. Reyes Memorial Medical Center and San Lazaro Hospital from February to July 2014. A data sheet regarding ENT manifestations was filled upon examination. Age, sex, CD4 count and antiretroviral treatment data were recorded. Independent samples t-test was used to determine age association with manifestations. Fischer's exact test was used to determine association of sex and manifestations. Chi-square test of independence was used to determine association of CD4 count and antiretroviral treatment with manifestations. Association was considered statistically significant if  $p < 0.05$ .

**Results:** Three hundred one (301) patients participated with 287 males (95.3%) and 14 females (4.7%). The mean age was  $31.7 \pm 8$ . One hundred ninety seven (197 or 65.4%) had ENT manifestations. The most common areas of manifestations came from the oral cavity-oropharyngeal area ( $n=104$ , 37%), nasal cavity-nasopharyngeal area ( $n=73$ , 26%) and ear ( $n=43$ , 15%). The most frequent manifestations were cervical lymphadenopathy, aphthous stomatitis and acute rhinitis. There was no significant difference in the age ( $p=0.31$ ) and sex ( $p=0.15$ ) of patients with and without manifestations. However, there was a direct association of manifestations with low CD4 count ( $p < 0.001$ ) and inverse association with antiretroviral treatment ( $p=0.036$ ).

**Conclusion:** Our findings emphasize the importance of screening for ENT manifestations, regular CD4 monitoring and enrollment to antiretroviral therapy in persons with HIV. Baseline otorhinolaryngologic examination upon HIV diagnosis and prior to initiating treatment should be followed by regular surveillance. Conversely, physicians should also be aware that patients with ENT manifestation may have HIV infection. **(Authors' abstract)**

**Keywords:** Medicine, HIV, Otorhinolaryngologic diseases, CD4 lymphocyte count, Anti-retroviral agents, Stomatitis, Rhinitis

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0445

### ***P2Y purinoceptors inhibit exocytosis in adrenal chromaffin cells via modulation of voltage-operated calcium channels***

**Seward, Elizabeth P. , Teschemacher, Anja G. , Powell, And**

We have used combined membrane capacitance measurements ( $C_m$ ) and voltage-clamp recordings to examine the mechanisms underlying modulation of stimulus–secretion coupling by a  $G_{i/o}$ -coupled purinoceptor (P2Y) in adrenal chromaffin cells. P2Y purinoceptors respond to extracellular ATP and are thought to provide an important inhibitory feedback regulation of catecholamine release from central and sympathetic neurons. Inhibition of neurosecretion by other  $G_{i/o}$ -protein-coupled receptors may occur by either inhibition of voltage-operated  $Ca^{2+}$  channels or modulation of the exocytotic machinery itself. In this study, we show that the P2Y purinoceptor agonist 2-methylthio ATP (2-MeSATP) significantly inhibits  $Ca^{2+}$  entry and changes in  $C_m$  evoked by single 200 msec depolarizations or a train of 20 msec depolarizations (2.5 Hz). We found that P2Y modulation of secretion declines during a train such that only ~50% of the modulatory effect remains at the end of a train. The inhibition of both  $Ca^{2+}$  entry and  $\Delta C_m$  are also attenuated by large depolarizing prepulses and treatment with pertussis toxin. Inhibition of N-type, and to lesser extent P/Q-type,  $Ca^{2+}$  channels contribute to the modulation of exocytosis by 2-MeSATP. The  $Ca^{2+}$ -dependence of exocytosis triggered by either single pulses or trains of depolarizations was unaffected by 2-MeSATP. When  $Ca^{2+}$  channels were bypassed and exocytosis was evoked by flash photolysis of caged  $Ca^{2+}$ , the inhibitory effect of 2-MeSATP was not observed. Collectively, these data suggest that inhibition of exocytosis by  $G_{i/o}$ -coupled P2Y purinoceptors results from inhibition of  $Ca^{2+}$  channels and the  $Ca^{2+}$  signal controlling exocytosis rather than a direct effect on the secretory machinery. **(Author's abstract)**



**Keywords:** *Medicine, P2Y purinoceptor, G-protein-coupled receptor, Voltage-operated calcium channels, Exocytosis, Modulation, Presynaptic inhibition, Adrenal chromaffin cells*

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0446

### ***Papillary thyroid carcinoma presenting with a right preauricular and intracranial mass***

***Pascual, Jr., Renato C. , Castañeda, Johann F. , Romualdez, J***

**Objective:** *To describe a case of a papillary thyroid carcinoma presenting with a preauricular and an intracranial mass and review the literature on the metastatic nature and invasiveness of papillary thyroid carcinoma.*

**Methods:**

<i>Design:</i>	<i>Case</i>	<i>Report</i>
<i>Setting:</i>	<i>Tertiary</i>	<i>Private</i>
<i>Patient:</i>		<i>One</i>

**Results:** *A 46-year-old female with a 12-year anterior neck mass and a two-year right pre-auricular pleomorphic adenoma on fine needle aspiration biopsy was found to have an intracranial mass on CT-scan. Total thyroidectomy and section biopsy of the preauricular mass yielded a final histopathologic report of follicular variant of papillary carcinoma, thyroid gland; and metastatic papillary thyroid carcinoma, follicular type, pre-auricular mass. The condition of the patient precluded neurosurgical intervention and RAI therapy and she underwent 23 sessions of external radiotherapy using 46Gy with significant diminution in size of the intracranial metastasis.*

**Conclusion:** *Papillary thyroid malignancy may be an indolent tumor but it is capable of distant metastasis. We should be alerted by host and tumor factors which can be predictors of a more radical papillary malignant disease whose management entails proper staging evaluation and good communication of prognostic data and available, realistic therapeutic options to patients using a multidisciplinary approach. (Author's abstract)*

**Keywords:** *Medicine, Papillary thyroid carcinoma, Papillary thyroid carcinoma metastasis, Infratemporal metastasis, Brain metastasis of papillary carcinoma*

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*Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 25 Issue No. 1, 26-30  
2010,  
(Filipiniana Analytics)  
NP*

0447

### ***Parapharyngeal neurofibroma in a pediatric patient***

***Onofre, Rubili***

*Primary tumors of the parapharyngeal area are rare and account for 0.5% of all head and neck tumors.1,2 Among these, 80% are benign while 20% are malignant.2 Next to schwannomas, neurofibromas are the second most*

commonly encountered primary tumor of nerve sheath origin in the parapharyngeal space but incidence and prevalence rates have not been documented among pediatric patients.<sup>3,4</sup> Plexiform neurofibromas in particular pose a surgical challenge in pediatric patients. Careful preoperative planning, advanced surgical techniques and vigilant postoperative care result in minimal morbidity and resolution of tumor symptomatology.<sup>5</sup> Although complete surgical resection is ideal for all (especially benign) parapharyngeal tumors,<sup>4</sup> the dilemma of complete versus partial resection arises when massive size increases the possibility of neurological dysfunction and cosmetic deformity from damage to adjacent cranial nerves and sympathetic chain fibers.<sup>6</sup> We present the management dilemma involving a neurofibroma of the parapharyngeal space in a pediatric patient. **(Author's abstract)**

**Keywords:** Medicine, Parapharyngeal neurofibroma, Parapharyngeal space, Tumor

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 25 Issue No. 1, 38-40  
2010,  
(Filipiniana Analytics)  
NP

0448

### **Parathyroid carcinoma manifesting as recurrent nephrolithiasis**

**Ureta, Celso V. , Villalon, Ma. Meli**

**Objectives:** To present a rare case of primary parathyroid carcinoma and discuss its clinical findings and management.

**Methods:**

**Design:** Case Report

**Setting:** Tertiary Government Hospital

**Patient:** One

**Results:** A 54-year-old woman presented with a 3-year history of recurrent nephrolithiasis despite several courses of shock wave lithotripsy. She had persistent hypercalcemia and parathyroid hormone levels were noted to be elevated. Neck ultrasound showed a hypoechoic solid nodule measuring approximately 1.7 x 1.6 cm in the lateral inferoposterior aspect of the left thyroid lobe. Parathyroid scintigraphy revealed a focal uptake on the left lower thyroidal bed. The patient underwent left inferior parathyroidectomy with subtotal thyroidectomy and isthmusectomy. Frozen section reported a parathyroid tumor and the final histopathologic results revealed a parathyroid carcinoma.

**Conclusion:** A rare case of parathyroid carcinoma was presented manifesting with recurrent nephrolithiasis. Elevated serum calcium and intact parathyroid hormone (iPTH) can confirm a primary hyperparathyroid problem. Neck ultrasound and parathyroid scintigraphy help in the localization of a parathyroid tumor. Only final histopathologic results can confirm the diagnosis of parathyroid carcinoma. Complete surgical excision is the treatment of choice and offers a good prognosis. **(Authors abstract)**

**Keywords:** Medicine, Parathyroid carcinoma, Primary hyperparathyroidism, Nephrolithiasis

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2015,  
(Filipiniana Analytics)  
NP

***The pattern of avian intramuscular nerve branching is determined by the innervating motoneuron and its level of polysialic acid***

***Landmesser, Lynn T. , Rafuse, Vic***

Most skeletal muscles are composed of a heterogeneous population of fast and slow muscle fibers that are selectively innervated during development by fast and slow motoneurons, respectively. It is well recognized that, in both birds and mammals, fast and slow motoneurons have substantially different intramuscular branching patterns, a difference critical for proper motor function. However, the cellular mechanisms regulating these differences in motoneuron branching are unknown. In a previous study, we showed that the fast and slow pattern of intramuscular branching, in a chick muscle containing distinct fast and slow muscle regions, was remarkably similar to normal when formed by foreign motoneurons. Whether this was attributable to some property of the innervating "fast" or "slow" motoneurons or to some property of the developing fast-slow muscle fibers was not determined. To distinguish between these two possibilities, we performed chick-quail hindlimb chimeras to force slow chick plantaris motoneurons to innervate a fast quail plantaris muscle. The pattern of intramuscular nerve branching in the fast plantaris of these chimeras closely resembled the slow branching pattern normally observed in chick slow plantaris muscles. Enzymatic removal of polysialic acid (PSA) from nerve and muscle during normal quail plantaris development dramatically changed the normal fast pattern to more closely resemble a slow pattern. In contrast, removal of PSA from chick plantaris motoneurons and muscle fibers had little effect on the pattern of nerve branching. Together, these results indicate that the pattern of intramuscular nerve branching is determined by the level of PSA on the innervating motoneurons. (**Author's abstract**)

**Keywords:** Medicine, Muscle, Myotubes, NCAM, Fast/slow, Synaptic transmission of fast muscle, Slow muscle

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2000 February,  
(Filipiniana Analytics)  
NP

***Pneumococcal conjugate vaccine (non-typeable haemophilus influenzae (NTHi) protein D. Diphtheria or Tetanus toxoid conjugates) in prevention of acute otitis media in children: a cohort study***

***Santos, Wilfredo R. , Llamas, Agnes Cecille G. , Regal, Mary Agnes S. , Chu, Trixy G. , Martinez, Norberto V., Cachola, Daniel Rafae***

**Objective:** To compare the incidence of acute otitis media among children aged 2 to 6 months old in Sampaloc, Manila who were previously given 3 doses of pneumococcal conjugate vaccine (Non-Typeable Haemophilus influenzae (NTHi) protein D, diphtheria or tetanus toxoid conjugates) and those who did not receive the vaccine over a period of one year.

**Methods:**

**Design:**

Cohort

Study

**Setting:** Primary Health Center in Sampaloc, Manila, Philippines

**Participants:** Medical records of well children aged 2 to 6 months were reviewed for inclusion. Participants were categorized into vaccinated and unvaccinated groups. Both groups underwent baseline history and physical examination including otoscopy and any signs and symptoms of active ear infection were noted. Subjects were followed up for a period of one year on a monthly basis for signs or symptoms of acute otitis media.

**Results:** A total of 176 subjects participated in the study. The overall incidence of AOM among participants was 5.11% (9 out of 176). An AOM incidence of 3.75% (3 out of 80) and 6.25% (6 out of 96) was found among the exposed and unexposed groups, respectively. Fisher's exact test (one-tailed)  $p$  value = .34, relative risk (RR) .6 (95% CI 0.155, 2.323). **Conclusion:** The results of this study showed no difference in the development of AOM in the two groups. However, based on the relative risk, Pneumococcal conjugate vaccine is still beneficial in preventing AOM in children. **(Authors' abstract)**

**Keywords:** Medicine, Pneumococcal conjugate vaccine, Acute otitis media, D. Diphtheria, Tetanus toxoid conjugates

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 31 Issue No. 2, 13-15  
2016,  
(Filipiniana Analytics)  
NP

0451

### **Polymorphous low-grade adenocarcinoma**

**Bernido, Joy B. , Carnate, Jr., J**

A 60-year-old woman with a 3-year history of a gingivoalveopalatal mass underwent an incision biopsy. Microscopically, the lesion centered in the stroma is infiltrative and architecturally diverse, having cystic, linear or "Indian file", solid and tubular patterns. The cells are uniform in size, round to oval and have bland cytologic features with vesicular nuclei and inconspicuous nucleoli (Figure 4). The clinical data and histomorphologic features characterized by architectural diversity yet cytologic blandness lead us to the diagnosis of polymorphous low-grade adenocarcinoma. **(Author's abstract)**

**Keywords:** Medicine, Gingivoalveopalatal mass, Biopsy, Polymorphous low-grade adenocarcinoma

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 29 Issue No. 2, 39-40  
2014,  
(Filipiniana Analytics)  
NP

0452

### **Positive Modulation of AMPA Receptors Increases Neurotrophin Expression by Hippocampal and Cortical Neurons**

**Arai, Amy , Gall, Christine M. , Vanderklish, Peter , Lynch, Gary , Lauterborn, Ju**

This study investigated whether positive modulators of AMPA-type glutamate receptors influence neurotrophin expression by forebrain neurons. Treatments with the ampakine CX614 markedly and reversibly increased brain-

derived neurotrophic factor (BDNF) mRNA and protein levels in cultured rat entorhinal/hippocampal slices. Acute effects of CX614 were dose dependent over the range in which the drug increased synchronous neuronal discharges; threshold concentrations for acute responses had large effects on mRNA content when applied for 3 d. Comparable results were obtained with a second, structurally distinct ampakine CX546. Ampakine-induced upregulation was broadly suppressed by AMPA, but not NMDA, receptor antagonists and by reducing transmitter release. Antagonism of L-type voltage-sensitive calcium channels blocked induction in entorhinal cortex but not hippocampus. Prolonged infusions of suprathreshold ampakine concentrations produced peak BDNF mRNA levels at 12 hr and a return to baseline levels by 48 hr. In contrast, BDNF protein remained elevated throughout a 48 hr incubation with the drug. Nerve growth factor mRNA levels also were increased by ampakines but with a much more rapid return to control levels during chronic administration. Finally, intraperitoneal injections of CX546 increased hippocampal BDNF mRNA levels in aged rats and middle-aged mice. The present results provide evidence of regional differences in mechanisms via which activity regulates neurotrophin expression. Moreover, these data establish that changes in synaptic potency produce sufficient network level physiological effects for inducing neurotrophin genes, indicate that the response becomes refractory during prolonged ampakine exposure, and raise the possibility of using positive AMPA modulators to regulate neurotrophin levels in aged brain. (Author's abstract)

**Keywords:** Medicine, Brain-derived neurotrophic factor, Nerve growth factor, Ampakine, Hippocampus, Gene regulation, *trkB*, Aging

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JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 1, 8-21  
2000 January,  
(Filipiniana Analytics)  
NP

0453

### **Postoperative wound complications in modified meatoplasty vs z-meatoplasty in canal wall-down mastoidectomy at a tertiary hospital: a randomized controlled trial**

Gumban, Ma. Theresa L., Almazan, Nativi

**Objective:** To compare the postoperative complications (narrowing of the enlarged canal and perichondritis) of a meatoplasty without conchal cartilage removal and more raw skin area (modified meatoplasty) versus a meatoplasty with conchal cartilage removal and less raw skin area (Z meatoplasty) including other sequelae (hyperemia, formation of granulation tissue and discharge from the cavity) which may lead to complications in canal wall down post-auricular mastoidectomy.

**Methods:**

**Design:** Concealed, randomized controlled clinical trial

**Setting:** Tertiary Public Hospital

**Patients:** Twenty-one ears of 19 patients with chronic suppurative otitis media (CSOM) undergoing postauricular open mastoidectomy (radical or modified radical mastoidectomy) between February to July 2009 were randomly assigned to undergo modified meatoplasty (Group A: n=11) and Z meatoplasty (Group B:n=10). Main outcome measures were postoperative rates of meatoplasty complications and mastoidectomy sequelae that may lead to complications on weeks 1, 2 and 4.

**Results:** On the first postoperative week, the Z meatoplasty was associated with a higher incidence of hyperemia at the incision site [A: 36.4%, B: 90% ( $p < 0.02$ )]. The specific complication of perichondritis or other sequelae (discharge from the cavity, granulation tissue) were no different in both types of meatoplasty. On the second postoperative week, the modified meatoplasty was associated with a higher incidence of narrowing of the canal (73% vs 20%)  $P < 0.02$ ; [RR = 3.64 (CI: 1.00, 13.23)] The only factor associated with this complication was the modified meatoplasty procedure itself [RR = 3.64 (CI: 1.00, 13.23)]. Perichondritis and the sequelae of mastoidectomy (discharge from the cavity, granulation tissue) were no different in both types of meatoplasty.

**Conclusion:** Among CSOM patients who underwent postauricular open mastoidectomy, The Z meatoplasty was associated with a greater risk of hyperemia at the incision site than the modified meatoplasty in the first operative week. Compared to the Z meatoplasty, the modified meatoplasty was associated with greater risk of narrowing of the canal on the second postoperative week. (**Authors' abstract**)

**Keywords:** Medicine, Meatoplasty, Mastoidectomy, Complications, Z-meatoplasty

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 25 Issue No. 2, 6-13  
2010,  
(Filipiniana Analytics)  
NP

0454

**Preliminary determination of the microbial count on x-ray tables in selected hospitals in  
Cagayan de Oro City, Philippines**

**Barrieta, John Lester S. , Balcovero, Marvs Tadeo D. , Baguio, Robbie Ringo G. , Espina, Edzen A., Banasihan,  
Dan Engela**

This study aimed to determine the microbial count present on x-ray tables utilized during x-ray examinations with patients in Radiology Departments of Cagayan de Oro City hospitals. Particularly, it sought to evaluate and assess the sanitary conditions of these x-ray tables. This study used the evaluation research approach to determine the sanitary level of the x-ray tables. In order to rate the sanitary level, "Collins and Lyne's Microbiological Method Chapter 17 "Swab" was used as the guide of the study. This method made use of the swab rinse method. The parameter utilized the total plate count which was an estimation of the number of viable cells in a culture. Based on the microbial count results released by DOST, Hospitals A, B, and C yielded microbial counts of 28, 40, and 36 CFU/cm<sup>2</sup> respectively while Hospitals D and E yielded 100 and 164 CFU/cm<sup>2</sup> respectively. Based on the findings, Hospitals A, B, and C yielded microbial counts that were less than 100 CFU/cm<sup>2</sup> and are within the limits established by USPHS, thus, they were considered sanitary. Meanwhile, Hospitals D and E have exceeded the limits and were considered unsanitary. (Author's abstract)

**Keywords:** Medicine

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Advancing Radiologic Technology Research, Volume No. 1 Issue No. 1,  
2013,  
(Filipiniana Analytics)  
NP

0455

**A preliminary study on the efficacy of plumeria acuminata (Kalachuchi) bark extract ointment  
versus clotrimazole cream in the treatment of otomycosis**

**Boncalon, Rhoda Mae V., Arugay, Marida Arend V. , Ramos, Rachel Zita**

**Objective:** To compare the therapeutic efficacy of kalachuchi (*Plumeria acuminata* Ait.) bark extract ointment (KO) and clotrimazole cream 1% (CC) in the treatment of otomycosis. **Methods Design:** Randomized double blind controlled trial **Setting:** Outpatient otorhinolaryngology clinic of a tertiary government hospital **Subjects:** Patients

aged 18-years-old and above diagnosed clinically to have otomycosis with a positive potassium hydroxide (KOH) smear were randomly assigned to kalachuchi (*Plumeria acuminata* Ait.) bark extract ointment or clotrimazole cream 1% in unlabeled containers. Selfapplication thrice daily for two weeks followed initial detailed instructions and demonstration. Symptoms, physical findings and repeat KOH smears were recorded after the first and second weeks of treatment. Results: Eighteen patients with otomycosis were enrolled in the study. There was one dropout per treatment group with no intention to treat. There were no statistically significant differences between KO and CC, with 75% (n=8) and 87.5% (n=8) cure rates, respectively. One subject in the KO arm reported severe ear pain. Conclusion: Kalachuchi extract ointment may be a promising topical antifungal agent. Multicenter clinical trials to establish its efficacy and safety as an effective alternative in the management of otomycosis should be conducted. (Author's abstract)

**Keywords:** Otomycosis, Medicine, Kalachuchi, *plumeria acuminata*, Clotrimazole, Clinical trial, Herbal medicine

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*Philippine Journal of Otolaryngology Head and Neck Surgery*, Volume No. 24 Issue No. 1, 5-8  
2009,  
(Filipiniana Analytics)  
NP

0456

### ***Preparation of the blood-enriched agar with the use of red cell suspension***

***Sumaray, Karen D. , Llanes, Darwin A. , Castillo, Melvin M. , Caringal, Ma. Charisma S. , Aro, Richelle S. , Magbojos, Car***

A culture medium is said to support the growth and development of different microorganisms. Certain bacteria like *Staphylococcus aureus* and *Staphylococcus epidermidis* entail hemoglobin found in the red blood cells. Because of its cost effectiveness and availability, expired human blood is being utilized in some developing countries. Despite the widely accepted disadvantages of using human blood as enrichment agent, many laboratories still opt to use it due to the unavailability of sheep blood or due to budgetary reasons. This study determined if the washed expired human blood can be used as an alternative enrichment agent in the preparation of Blood Agar Plate (BAP) culture medium in the isolation of *Staphylococcus aureus* ATCC 25923 and *Staphylococcus epidermidis* ATCC 12228. The cultural characteristics and hemolytic reactions of the selected microorganisms were recorded, assessed and compared with their growth in BAP. The stability of the washed expired human blood was evaluated in terms of temperature and storage period. Results reveal that expired human blood with washing improved the morphologic and hemolytic pattern of *Staphylococcus aureus*. The washing of blood had no effect on *Staphylococcus epidermidis* because it is a gamma hemolytic bacterium. Both unwashed expired and fresh human blood produced gamma hemolysis due to the interferences still present in them. Both washed expired human blood and washed fresh human blood produced beta hemolysis. Washed expired human blood could be stored for seven days and still could be used for microbial culture. (Author's abstract)

**Keywords:** Medicine, Blood, Blood-enriched agar, Red cell suspension

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*Asian Journal of Health*, Volume No. 1 Issue No. 1, 271-287  
2011,  
(Filipiniana Analytics)  
NP

0457

**Presenilin-1 mutation increases neuronal vulnerability to focal ischemia in vivo and to Hypoxia and Glucose deprivation in cell culture: involvement of perturbed calcium homeostasis**

**Kindy, Mark S. , Yu, Jin , Zhu, Haiyan , Mattson, M**

Many cases of early-onset inherited Alzheimer's disease (AD) are caused by mutations in the presenilin-1 (PS1) gene. Studies of cultured neural cells suggest that PS1 mutations result in perturbed cellular calcium homeostasis and may thereby render neurons vulnerable to apoptosis. In light of evidence that metabolic impairment plays a role in AD, that cerebral ischemia may be a risk factor for AD, and that individuals with AD have increased morbidity and mortality after stroke, we examined the impact of a PS1 mutation on neuronal vulnerability to ischemic injury. We report that the extent of brain injury after focal cerebral ischemia reperfusion is increased, and behavioral outcome is worsened, in PS1 mutant knock-in mice compared to wild-type mice. Cultured cortical neurons from PS1 mutant mice exhibit increased vulnerability to glucose deprivation and chemical hypoxia compared to their wild-type counterparts. Calcium imaging studies demonstrated enhanced elevation of intracellular calcium levels after glucose deprivation and chemical hypoxia in neurons from PS1 mutant mice. Agents that block calcium release from IP3- and ryanodine-sensitive stores (xestospongine and dantrolene, respectively) protected against the endangering action of the PS1 mutation. Our data suggest that presenilin mutations may promote neuronal degeneration in AD by increasing the sensitivity of neurons to age-related ischemia-like conditions. The data further suggest that drugs that stabilize endoplasmic reticulum calcium homeostasis may prove effective in suppressing the neurodegenerative process in AD patients. **(Author's abstract)**

**Keywords:** Medicine, Alzheimers disease, Dantrolene, Endoplasmic reticulum, Knock-in, Stroke, Transgenic

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*JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 4, 1358-1364  
2000 February,  
(Filipiniana Analytics)  
NP*

0458

**Presynaptic Ca<sup>2+</sup> influx at a mouse central synapse with Ca<sup>2+</sup> channel subunit mutations**  
**Qian, Jing, Noebels, Jeffrey**

Genetic alterations in Ca<sup>2+</sup> channel subunits can be used to study the interaction among channel subunits and their roles in channel function. P/Q- and N-type Ca<sup>2+</sup> channels reside at the presynaptic terminal and control the release of neurotransmitter at mammalian central synapses. We used fluorescence imaging techniques to investigate presynaptic Ca<sup>2+</sup> currents and neurotransmitter release at hippocampal Schaffer collateral synapses in both tottering (tg,  $\alpha_{1A}$  subunit) and lethargic (lh,  $\beta_4$  subunit) mutant mice. Application of selective toxins revealed a large reduction in presynaptic P/Q-type Ca<sup>2+</sup> transients, from 39% of total in +/+ mice to 6% in tg/tg mice, whereas the proportion of N-type increased from 35 to 68%, respectively. Neurotransmitter release in the tg/tg mutant relied almost exclusively on N-type channels, as shown by the complete blockade of synaptic transmission with  $\omega$ -conotoxin GVIA. Remarkably, loss of  $\beta_4$ , a subunit predicted to regulate the subcellular targeting and modulation of both P/Q- and N-type channels, resulted in no significant difference in the ratio of Ca<sup>2+</sup> channel subtypes or Ca<sup>2+</sup> dependence of neurotransmitter release in lethargic mice. G-protein-mediated inhibition of Ca<sup>2+</sup> channels was also unaltered. These results indicate that a profound decrease in presynaptic P/Q-type currents leads to dependence of neurotransmitter release on N-type channels. In contrast, absence of  $\beta_4$  appears not to compromise either P/Q- or N-type channel function at this hippocampal synapse, implicating rescue of presynaptic Ca<sup>2+</sup> currents by other available  $\beta$  subunits. The present study reveals compensatory molecular mechanisms in the regulation of presynaptic Ca<sup>2+</sup> entry and neurotransmitter release. **(Author's abstract)**

**Keywords:** Medicine, Hippocampus, Presynaptic terminal, Magnesium green, Transmitter release, PPF, Power function, Cooperativity



***The presynaptic calcium channel is part of a transmembrane complex linking a synaptic laminin ( $\alpha4\beta2\gamma1$ ) with non-erythroid spectrin***

***Sanes, Joshua R. , Miner, Jeffrey H. , Son, Young-Jin , Sunderland, William J., Carlson, Steve***

*Nerve regeneration studies at the neuromuscular junction (NMJ) suggest that synaptic basal lamina components tell the returning axon where to locate neurotransmitter release machinery, including synaptic vesicle clusters and active zones. Good candidates for these components are the synaptic laminins (LNs) containing  $\alpha4$ ,  $\alpha5$ , or  $\beta2$  chains. Results from a  $\beta2$  laminin knockout mouse have suggested a linkage of this extracellular laminin to cytosolic synaptic vesicle clusters. Here we report such a transmembrane link at the electric organ synapse, which is homologous to the NMJ. We immunopurified electric organ synaptosomes and found on their surface two laminins of 740 and 900 kDa. The 740 kDa laminin has a composition of  $\alpha4\beta2\gamma1$  (laminin-9). Immunostaining reveals that as in the NMJ,  $\alpha4$  and  $\beta2$  chains are concentrated at the electric organ synapse. Using detergent-solubilized synaptosomes, we immunoprecipitated a complex containing  $\alpha4\beta2\gamma1$  laminin, the voltage-gated calcium channel, and the cytoskeletal protein spectrin. Other presynaptic proteins such as 900 kDa laminin are not found in this complex. We hypothesize that  $\alpha4\beta2\gamma1$  laminin in the synaptic basal lamina attaches to calcium channel, which in turn is attached to cytosolic spectrin. Spectrin could then organize synaptic vesicle clusters by binding vesicle-associated proteins. (Author's abstract)*

***Keywords:*** *Medicine, Calcium channel, Laminin, Spectrin, Electric organ, Synapses, Synaptosomes, Nerve terminal*

***Prevalence of intestinal helminth infections and associated socio-demographic variables among schooling children of the public elementary schools of Maramag, Bukidnon, Philippines***  
***Batbatan, Christop***

*Certain socio-demographic factors can strongly influenced transmission and infection of helminth parasites but these factors are variable due practices and traditions, age groups, geographical locations, sex, education, and sanitation. To determine and identify regional demographic, environmental and behavioral variables among the schooling children of Maramag, Bukidnon, a survey was conducted from June to August 2009 in five public elementary schools of Maramag, Bukidnon: Dologon Elementary School (n=96), Famador Elementary School (n=93), Maramag Central Elementary School (n=65), Base Camp Elementary School (n=95) and San Miguel Elementary School (n=69). Each student was given a questionnaire and a fecal bottle. Fecal samples from 418 individuals were analyzed for the presence of helminths. Using direct microscopic examination, 18 (4.30%)*

individuals were positive for helminth infection out of 418 fecal specimens. The most common parasite was *Ascaris lumbricoides* with 6 (1.43%) individuals infected, 5 (1.19%) with *Enterobius vermicularis*, 4 with *Necator americanus*, 2 with *Strongyloides* sp and 1 with *Trichuris trichura*. By univariate analysis, all sociodemographic variables were not significantly associated to a particular helminth infection. However, high frequency of infected individuals can be observed in a certain socio-demographic variable. Among the 18 infected individuals 10 (58%) were, their mothers have no formal education. Thirteen infected individuals (72.22%) were from a low-income family having less than 5,000 pesos per month, and 12 (66.67%) infected individuals belong to a large-member-family having greater than eight members. **(Author's abstract)**

**Keywords:** Medicine, Socio-demographic variables, Helminth infections, Prevalence

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2012,  
(Filipiniana Analytics)  
NP

0461

***Prevalence of Nasopharyngeal carcinoma among patients with Nasopharyngeal mass in a Philippine tertiary training hospital***  
***Lara, Hasmin Han***

**Objectives:** To determine the prevalence and identify the types of Nasopharyngeal Carcinoma (NPCA) among patients with nasopharyngeal mass seen at a tertiary university training hospital in the Philippines from January 2006 – July 2012 and identify possible factors associated with nasopharyngeal carcinoma.

**Methods:** A retrospective cross-sectional study was performed at a tertiary university training hospital among cases (n=179) seen with nasopharyngeal mass at the ENT outpatient department. Histopathology results and patient medical charts were collected and reviewed after IRB approval. The age at diagnosis, sex, place of residence, occupation and chief complaint was compared among patients with positive histopathology of NPCA only.

**Design:** Retrospective, cross sectional study

**Setting:** Tertiary Private University Training Hospital

**Participants:** One hundred seventy nine (179) patients with nasopharyngeal mass

**Results:** Ninety six (54%) cases with nasopharyngeal mass seen at the ENT outpatient department were positive for nasopharyngeal malignancy. The remaining 83 (46%) cases with nasopharyngeal mass had a benign histopathology. NPCA was more common among males (58%) than females (42%). The most common form of NPCA was non-keratinizing undifferentiated NPCA (47%) followed by poorly differentiated squamous cell carcinoma in 18 (19%). The most common chief complaint was a neck mass, followed by decreased hearing.

**Conclusion:** There was a higher proportion of nasopharyngeal malignancy among male patients with nasopharyngeal mass, and the most common chief complaint was a neck mass. Future research should integrate data with other hospital institutions to obtain more accurate demographic data of the local prevalence of NPCA. A detailed record of the ethnicity, diet, occupation, smoking history and family history of cases should be obtained to correlate possible risk factors of NPCA among patients with nasopharyngeal mass in our setting. **(Authors' abstract)**

**Keywords:** Medicine, Nasopharyngeal carcinoma, Nasopharyngeal mass, Epidemiology, Prevalence

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**Prevertebral soft tissue thickness among pediatric patients**  
**Tanalgo, Jennifer B. , Reyes, Manuelito M. , Ricalde, Rosario R., Baldoz, Concepcio**

**Objectives:** This study aimed to determine the prevertebral soft tissue thickness among normal patients aged 0-14 years old in a tertiary government training hospital, to compare these values with divergent criteria in the standard otorhinolaryngology and radiology texts used in our institution, and to recommend adoption of a set of criteria based on the results.

**Methods:**

**Design:** Descriptive Study

**Setting:** Tertiary Government Hospital

**Subjects and Methods:** Lateral cervical radiographs taken from May 2007 to August 2009 which were initially read as normal were collected. Fifty (50) patients, 39 males and 11 females, aged 0-14 years old meeting inclusion criteria were reviewed and prevertebral soft tissue thicknesses (PVST) and cervical vertebral body diameter at levels C2, C5, C6 were measured and compared to criteria set by standard otorhinolaryngology and radiology textbooks.

**Results:** The average PVST at C2 ranged from 4.02 mm for 2-3 year-olds (n= 2) to 8.16 mm for 1-2 year-olds (n=2). The average PVST at C5 ranged from 8.11mm for 1-2 year-olds to 10.75 mm for 0-1 year-olds. The average PVST at C6 ranged from 7.13 mm for 1 - 2 year-olds to 10.36 mm for 0-1 year-olds. Only 12% of the patients satisfied the criteria set by Keats and Lusted, while 100% satisfied Duncan's criteria, 94% and 98% satisfied Wippold's first and second criteria respectively.

**Conclusion:** All of the PVST criteria mentioned in Cummings' Textbook of Otorhinolaryngology Head and Neck Surgery had a more than 90% accuracy compared to only 12% for those mentioned in Keats and Lusted's Atlas of Roentgenographic Measurement. Therefore, we recommend the use of any criteria for PVST contained in the former over the latter. (Authors' abstract)

**Keywords:** Medicine, Prevertebral soft tissue thickness, Cervical vertebra, Otorhinolaryngology, Cervical radiograph

**Primary malignant Parotid lymphoma: two case reports with different disease progression and treatment**

**Hashim, Noor Dina , Abdullah, Asma , Baki, Marina Mat , Yunus, Mohd Razif Mohamad , Ami, Mazita, Husain, Sal**

**Objective:** To describe our experience in managing two cases of primary malignant parotid lymphoma.

**Methods:**

<b>Design:</b>		Case		Report
<b>Setting:</b>	Tertiary	University	Referral	Center
<b>Patients:</b>				Two

**Results:** Both patients underwent superficial parotidectomy. Despite recurrence in one, the disease was controlled with conservative management. However, the disease was more aggressive in the other, requiring additional chemo-radiotherapy.

**Conclusion:** Malignant parotid lymphoma may present with varying stages, grades and clinical courses, requiring different management approaches. The treatment options are based on grading and staging at diagnosis and should be implemented depending on individual case. (**Authors' abstract**)

**Keywords:** Medicine, Parotid neoplasms, Malignant lymphoma, Superficial parotidectomy, Chemo-radiotherapy

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2011,  
(Filipiniana Analytics)  
NP

0464

### **Primary thyroid lymphoma**

**Veloso, Januario D. , Salpin, Ansarie P. , Musngi-Paras, Claudi**

Eight cases of primary thyroid lymphoma were reported in a tertiary government hospital from January 2005 to August 2011. All patients presented with a diffuse enlargement of both thyroid lobes with associated obstructive symptoms. Five of these cases were extranodal marginal zone lymphoma and three were diffuse large B-cell lymphoma. Clinical features that would favor a thyroid lymphoma include tumor size of greater than 7 cm, obstructive symptoms, clinical hypothyroidism or history of Hashimoto thyroiditis. Thus, these features must be considered in evaluating thyroid nodules during fine-needle aspiration biopsy. Histologically, extranodal marginal zone B-cell lymphoma shows vaguely nodular to diffuse infiltrates of small to intermediate size atypical lymphoid cells infiltrating the thyroid follicles while diffuse large B-cell lymphoma shows sheets of large atypical lymphoid cells infiltrating the thyroid follicular epithelium. (**Author's abstract**)

**Keywords:** Medicine, Primary thyroid lymphoma, Extranodal marginal zone B-cell lymphoma, Diffuse large B-cell lymphoma

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2012,  
(Filipiniana Analytics)  
NP

0465

### **Principles of structural rhinoplasty in South East Asian noses**

**Yap, Edua**

What makes the majority of noses beautiful? It is the tip. South East Asian noses are usually small and short with bulbous tip and thick skin and soft tissue envelope (SSTE). The tip is determined by the shape and strength of the lower cartilages. The lower cartilages are usually soft and weak so there is a need for a strong support system for the attachment of the lower cartilages. Thus, the surgical term is called "Structural Rhinoplasty. The concept of the surgery involves re-structuring the tip to a new position for elongation and projection. Since the septum is the most stable structure, a central part of the septum is harvested and is used as extended septal support graft for fixation of the lower cartilage for a whole new tip position. The open approach is often used. The SSTE dissection is wide up to the pyriform aperture laterally, nasal spine inferiorly and glabella superiorly. Make certain that the dissection plane is below the superficial muscular aponeurotic system (SMAS) in the upper cartilage (UC) and lower cartilage (LC) and below the periosteum in the nasal bone. (Author's abstract)

**Keywords:** Medicine, Structural rhinoplasty, Skin and soft tissue envelope (SSTE), Superficial muscular aponeurotic system (SMAS), Upper cartilage (UC), Lower cartilage (LC), Nasal bone

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2014,  
(Filipiniana Analytics)  
NP

0466

### ***Proteasome inhibitors induce cytochrome c–Caspase-3-like protease-mediated apoptosis in cultured cortical neurons***

***Kirino, Takaaki , Hamada, Hirofumi , Saito, Nobuhito , Chi, Shunji , Asai, Akio , Qiu, Ji***

The ubiquitin–proteasome protein degradation pathway is crucial in controlling intracellular levels of a variety of short-lived proteins and maintaining cellular growth and metabolism. In a previous study, we showed the accumulation of conjugated ubiquitin in CA1 neurons of the gerbil after 5 min of forebrain ischemia (Morimoto et al., 1996; Ide et al., 1999). The accumulation of conjugated ubiquitin may reflect proteasome malfunction. In the present study, we investigated the effects of proteasome inhibitors on primary neuronal cultures to determine whether proteasomal malfunction induces neuronal death. When carbobenzoxy-Leu-Leu-Leu-aldehyde or lactacystin, two different types of proteasome inhibitors, were separately used to suppress proteasome activity, we observed induction of apoptotic neuronal cell death in both cases. During the apoptotic process, mitochondrial membrane potential was disrupted, cytochrome-c was released from mitochondria into the cytosol, and caspase-3-like proteases were activated. Apoptosis was inhibited by pretreatment with acetyl-aspartyl-glutamyl-valyl-aspartyl-aldehyde or overexpression of Bcl-x<sub>L</sub>. These results demonstrated that suppression of proteasome function induces neuronal apoptosis via the release of cytochrome c from mitochondria and activation of caspase-3-like proteases. (Author's abstract)

**Keywords:** Medicine, Neuron, Apoptosis, Proteasome, Cytochrome c, Caspase-3-like proteases, Ubiquitin

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2000 January,  
(Filipiniana Analytics)  
NP

0467

***Proteasome involvement and accumulation of ubiquitinated proteins in cerebellar granule neurons undergoing apoptosis***

***Dus, Laura , Serafino, Annalucia , Ciotti, Maria Teresa , Barbato, Christian , Canu, Nadia, Calissano, Pi***

*We investigated the potential role of the ubiquitin proteolytic system in the death of cerebellar granule neurons induced by reduction of extracellular potassium. Inhibitors of proteasomal function block apoptosis if administered at onset of this process, but they do not exert such effect when added 2–3 hr later. The same inhibitors also prevent caspase-3 activity and calpain-caspase-3-mediated processing of tau protein, suggesting that proteasomes are involved upstream of the caspase activation. Although the proteasomes seem to play an early primary role in programmed cell death, we found that with progression of apoptosis, during the execution phase, a perturbation in normal ubiquitin-proteasome function occurs, and high levels of ubiquitinated proteins accumulate in the cytoplasm of dying cells. Such accumulation correlates with a progressive decline of proteasome chymotrypsin and trypsin-like activities and, to a lower extent, of postacidic-like activity. Both intracytoplasmic accumulation of ubiquitinated proteins and decline of proteasome function are reversed by the pan-caspase inhibitor Z-VAD-fmk. The decline in proteasome function is accompanied by, and likely attributable to, a marked and progressive decline of deubiquitinating activities. The finding that the proteasomes are early involved in apoptosis and that ubiquitinated proteins accumulate during this process prospect granule neurons as a model system aimed at correlating these events with neurodegenerative diseases. (Author's abstract)*

**Keywords:** *Medicine, Apoptosis, Neurodegeneration, Ubiquitin-protein conjugates, Proteasome activity, Deubiquitinating activity, Cerebellar granule neurons*

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*JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 2, 589-599  
2000 January,  
(Filipiniana Analytics)  
NP*

0468

***Pterygoid botulinum toxin injection***

***Carrillo, Ryner J***

*Botulinum is a toxic polypeptide produced by the gram-positive anaerobic bacterium Clostridium botulinum that inhibits acetylcholine release from nerve endings, resulting in reduced neuromuscular transmission and local muscle activity, as well as cholinergic mediated parasympathetic activities. Its name is derived from the Latin word botulus, meaning sausage, as its toxicity was initially attributed to the oil of spoiled sausages. Of late, botulinum, packaged in various commercial forms such as onabotulinumtoxinA (Botox® type A, Allergan, Irvine, CA), is popularly used in several medical applications such as blepharospasm, hyperhidrosis and strabismus, and most famously in cosmetic surgery, where Botox® injections are used to eliminate and/or smoothen wrinkles. (Author's abstract)*

**Keywords:** *Medicine, Botulinum, Clostridium botulinum, OnabotulinumtoxinA, Pterygoid botulinum*

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*Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 26 Issue No. 1, 55-56  
2011,  
(Filipiniana Analytics)  
NP*

0469

***Pterygopalatine fossa infiltration: a radio-anatomic study among adult patients in a tertiary private hospital***

***Yu, Joseph Benjamin M. , Apale, Neil Louis L. Rivera, Rodolfo E. , Romualdez, J***

**Objective:** As a guide to the clinical practice of infiltration of local anesthesia into the pterygopalatine fossa via the greater palatine canal, this study sought to determine and record the mean CT scan measurements of the following: 1) palatal mucosal thickness, 2) length and width of greater palatine canal, and 3) length and width of pterygopalatine fossa among adult patients in a private tertiary hospital in Quezon City.

**Methods:**

**Design:** Retrospective, Descriptive Study

**Setting:** Tertiary Private Hospital

**Subjects:** Paranasal Sinus (PNS) CT Scans of 113 adult patients from January 2014 to May 2014 were reviewed and evaluated. Excluded were images with pathology that distorted the anatomy of the sinuses and surrounding structures.

**Results:** Our study showed average CT scan measurements of 5.98 mm palatal mucosal thickness, 16.99 mm greater palatine canal length, 18.75 mm pterygopalatine fossa length, 2.37 mm greater palatine canal width and 2.58 mm pterygopalatine fossa width. Comparison of average measurements by sex was not statistically significant. There was statistical significance when comparing the right palatal mucosal thickness of 5.86 mm with the left which was 6.11 mm with p-value of 0.001. Comparison between the length of the right pterygopalatine fossa of 18.48 mm with the left side at 19.01 mm showed statistical significance with p-value of 0.01.

**Conclusion:** As the average measurement of the mucosal palatal thickness combined with the length of the greater palatine canal was 22.97 mm, we recommend bending the needle 23 mm from the tip in a 45 degree angle for adult patients who will undergo sinus surgery, control of posterior epistaxis, trigeminal nerve block and minor oral cavity surgeries. (Authors' abstract)

**Keywords:** Medicine, Pterygopalatine fossa infiltration, Greater palatine canal, Greater palatine foramen, Regional anesthesia blocks

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2015,  
(Filipiniana Analytics)  
NP

0470

***Quality of life after FESS among patients with nasal polyps using the NOSE questionnaire translated in Filipino (NOSE-Ph)***

***Macasaet, Mary***

**Objective:** To evaluate the quality of life before, and after Functional Endoscopic Sinus Surgery (FESS) among patients with nasal obstruction due to nasal polyposis using the Nasal Obstruction Symptom Evaluation (NOSE) questionnaire translated in Filipino (NOSE-Ph) in a tertiary government hospital in Metro Manila.

**Methods:**

**Design:** Cross-Sectional QOL Study

**Setting:** Tertiary Government Hospital Participants: Forty (40) patients with nasal polyposis who underwent FESS from April 2014 to June 2015 were included in the study. Patients who underwent FESS due to other nasal tumors other than nasal polyp were excluded. The subjects answered the previously validated NOSE-Ph questionnaire pre- and post-operatively and the scores were gathered and analyzed.

**Results:** Based on the pre and post-operative scores, there was a statistically significant improvement in all 5 parameters (1. nasal congestion, 2. nasal obstruction, 3. trouble breathing, 4. trouble sleeping, and 5. inability to get enough air through the nose during exercise).

**Conclusion:** There was a statistically significant improvement in the quality of life of patients who underwent FESS based on the pre and post-operative scores using the NOSE-Ph questionnaire translated in Filipino. (**Authors' abstract**)

**Keywords:** Medicine, Nasal obstruction symptom evaluation scale, Nasal polyps, Functional Endoscopic Sinus Surgery (FESS), Nasal Obstruction Symptom Evaluation (NOSE) questionnaire translated in Filipino (NOSE-Ph)

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2016,  
(Filipiniana Analytics)  
NP

0471

### **Radiographic analysis between real human and human phantom using conventional x-ray machine in Liceo de Cagayan University School Year 2009-2010**

**Boo, Feyd , Bongaros, Amaliah , Cabasag, Carl Benedict , Orong, Denise O., Bastillada, Ju**

Major problems of Radiologic Technology students who are currently enrolled in subjects such as radiographic technique and positioning are the insufficient and poor radiographic quality of Human Phantom and its limited movements. This Human Phantom contains structures same as in real human and is designed to serve as a replacement of real human in study purposes. Radiographic images of human phantom are obtained together with real human radiographic images. Series of different radiation exposures is conducted in both human phantom and real human using the same technique factors. This study was conducted using conventional type of x-ray machine presently used in Radiologic Technology Laboratory. Radiographic images of human phantom are then compared to real human radiographic images by rating with the aid of some registered professionals who are experts in this field. Human phantom was found to be good in demonstrating some anatomical structures but was found to be insufficient and poor in radiographic quality due to its vague image as compared to real human using conventional type of x-ray machine presently used in Radiologic Technology laboratory. Overall, human phantom is quietly not suitable in using conventional type of x-ray machine when it comes to radiographic quality. (Author's abstract)

**Keywords:** Medicine

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2013,  
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NP

0472



**Rapid correction of aimed movements by summation of force-field primitives**  
Giszter, Simon F. , Kargo, Will

Spinal circuits form building blocks for movement construction. In the frog, such building blocks have been described as isometric force fields. Microstimulation studies showed that individual force fields can be combined by vector summation. Summation and scaling of a few force-field types can, in theory, produce a large range of dynamic force-field structures associated with limb behaviors. We tested for the first time whether force-field summation underlies the construction of real limb behavior in the frog. We examined the organization of correction responses that circumvent path obstacles during hindlimb wiping trajectories. Correction responses were triggered on-line during wiping by cutaneous feedback signaling obstacle collision. The correction response activated a force field that summed with an ongoing sequence of force fields activated during wiping. Both impact force and time of impact within the wiping motor pattern scaled the evoked correction response amplitude. However, the duration of the correction response was constant and similar to the duration of other muscles activated in different phases of wiping. Thus, our results confirm that both force-field summation and scaling occur during real limb behavior, that force fields represent fixed-timing motor elements, and that these motor elements are combined in chains and in combination contingent on the interaction of feedback and central motor programs. **(Author's abstract)**

**Keywords:** Medicine, Force field, Spinal cord, Reflex, Superposition, Primitive, Motor control

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2000 January,  
(Filipiniana Analytics)  
NP

0473

**Rapid ischemic cell death in immature oligodendrocytes: a fatal glutamate release feedback loop**

Müller, Thomas , Fern,

Ischemic injury of immature oligodendrocytes is a major component of the brain injury associated with cerebral palsy, the most common human birth disorder. We now report that cultured immature oligodendrocytes [ $O_4^+$ /galactoceramide (GC) $^-$ ] are exquisitely sensitive to ischemic injury (80% of cells were dead after 25.5 min of oxygen and glucose withdrawal). This rapid ischemic cell death was mediated by  $Ca^{2+}$  influx via non-NMDA glutamate receptors. The receptors were gated by the release of glutamate from the immature oligodendrocytes themselves via reverse glutamate transport and included a significant element of autologous feedback of glutamate from cells onto their own receptors. High ( $\geq 100 \mu\text{m}$ ) extracellular glutamate was protective against ischemic injury as a result of non-NMDA glutamate receptor desensitization. Other potential pathways of  $Ca^{2+}$  influx, such as voltage-gated  $Ca^{2+}$  channels, NMDA receptors, or the  $Na^+$ - $Ca^{2+}$  exchanger, did not significantly contribute to ischemic  $Ca^{2+}$  influx or cell injury. Release of  $Ca^{2+}$  from intracellular stores was also not an important factor. In agreement with previous studies, more mature oligodendrocytes ( $O_4^-$ /GC $^+$ ) were found to be less sensitive to ischemic injury than were the immature cells studied here. **(Author's abstract)**

**Keywords:** Medicine, Cell death, Cerebral palsy, Ischemia, Glia, Glutamate transport, Neonatal brain injury, Necrotic cell death, Non-NMDA glutamate receptor, Oligodendrocyte, White matter

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*JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 1, 34-42*  
2000 January,  
(Filipiniana Analytics)  
NP

***Rapid regulation of brain-derived neurotrophic factor mRNA within eye-specific circuits during ocular dominance column formation***

***Shatz, Carla J. , Lein, Edw***

*The neurotrophin brain-derived neurotrophic factor (BDNF) has emerged as a candidate retrograde signaling molecule for geniculocortical axons during the formation of ocular dominance columns. Here we examined whether neuronal activity can regulate BDNF mRNA in eye-specific circuits in the developing cat visual system. Dark-rearing throughout the critical period for ocular dominance column formation decreases levels of BDNF mRNA within primary visual cortex, whereas short-term (2 d) binocular blockade of retinal activity with tetrodotoxin (TTX) downregulates BDNF mRNA within the lateral geniculate nucleus (LGN) and visual cortical areas. Brief (6 hr to 2 d) monocular TTX blockade during the critical period and also in adulthood causes downregulation in appropriate eye-specific laminae in the LGN and ocular dominance columns within primary visual cortex. Monocular TTX blockade at postnatal day 23 also downregulates BDNF mRNA in a periodic fashion, consistent with recent observations that ocular dominance columns can be detected at these early ages by physiological methods. In contrast, 10 d monocular TTX during the critical period does not cause a lasting decrease in BDNF mRNA expression in columns pertaining to the treated eye, consistent with the nearly complete shift in physiological response properties of cortical neurons in favor of the unmanipulated eye known to result from long-term monocular deprivation. These observations demonstrate that BDNF mRNA levels can provide an accurate “molecular readout” of the activity levels of cortical neurons and are consistent with a highly local action of BDNF in strengthening and maintaining active synapses during ocular dominance column formation. (Author's abstract)*

**Keywords:** *Medicine, Critical period, Activity-dependent development, Neurotrophins, Synaptic competition, Neural plasticity, Cortical development*

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*JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 4, 1470-1483  
2000 February,  
(Filipiniana Analytics)  
NP*

***The real cost of smoking: who bears the final burden?***

***Golosino, Erne***

*Smoking is a highly communicable form of vices. It easily attracts people from all walks of life who savors it out of curiosity and later on become addicted. The competing interests between government and tobacco enterprises makes smoking not only a social disease but an economic variable. Intense anti-tobacco campaign were launched by different lobbyist including the scientific communities but to no avail. These efforts were eaten up by the giant leap of tobacco manufacturers. Heavy investments were poured-in just to drive strong marketing appeal. Not only that they conquered the market, they also made it to the legislative and to the executive branches of our government. Heavy logrolling were done rendering our laws which intend to curb smoking inutil. To chronicle the fate society is heading to, this paper attempts to uncover the real picture of the issue using qualitative methods. Documents from the antagonists and pro smoking were gathered in order to draw unbiased conclusions. The results indicated that the benefits offered by this industry is very minimal relative to the greater damage it caused to society. Hence, it is imperative that government must act with dispatch in solving this problem. (Author's abstract)*

**Keywords:** *Medicine, The real cost, Smoking, Final burden, Tobacco*

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*2012,*  
*(Filipiniana Analytics)*  
*NP*

0476

***Recovery from Open Channel Block by Acetylcholine during Neuromuscular Transmission in Zebrafish***

***Drapeau, Pierre , Legendre, Pascal, Ali, Declan***

*At larval zebrafish neuromuscular junctions (NMJs), miniature end plate currents (mEPCs) recorded in vivo have an unusually fast time course. We used fast-flow application of acetylcholine (ACh) onto outside-out patches to mimic the effect of synaptic release onto small numbers of ACh receptor channels (AChRs). Positively charged ACh acted at hyperpolarized potentials and at millimolar concentrations as a fast (“flickering”) open channel blocker of AChRs. Because of filtering, the open channel block resulted in reduced amplitude of single channel currents. Immediately after brief (1 msec) application (without significant desensitization) of millimolar ACh at hyperpolarized potentials, a slower, transient current appeared because of delayed reversal of the block. This rebound current depended on the ACh concentration and resembled in time course the mEPC. A simple kinetic model of the AChR that includes an open channel-blocking step accounted for our single channel results, as well as the experimentally observed slowing of the time course of mEPCs recorded at a hyperpolarized compared with a depolarized potential. Recovery from AChR block is a novel mechanism of synaptic transmission that may contribute in part at all NMJs. (Author's abstract)*

**Keywords:** *Medicine, Fast-flow, Single channels, Nonstationary kinetics, Neuromuscular junction, mEPC, Locomotion*

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*JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 1, 140-148*  
*2000 January,*  
*(Filipiniana Analytics)*  
*NP*

0477

***Recurrent epistaxis from a post-traumatic infraorbital artery Pseudoaneurysm***

***Pascual, Ma. Victo***

**Objective:** *To present a rare case of post-traumatic recurrent epistaxis in an elderly woman.*

**Methods:**

**Design:** *Case Report*

**Setting:** *Tertiary Private Hospital*

**Patient:** *One*

**Result:** A 93-year-old woman had multiple admissions for recurrent life threatening nosebleeding that was not controlled until a post-traumatic pseudoaneurysm of the infraorbital artery was diagnosed and embolized.

**Conclusion:** The diagnosis of pseudoaneurysm should be considered in such cases, and treatment involving surgeons and interventional radiologists should be initiated to minimize morbidity and mortality. (**Authors' abstract**)

**Keywords:** Medicine, Recurrent epistaxis, Post-traumatic pseudoaneurysm, Right infraorbital artery, Right internal maxillary artery, Embolization

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 31 Issue No. 1, 45  
2016,  
(Filipiniana Analytics)  
NP

0478

### **Recurrent epistaxis from a post-traumatic infraorbital artery Pseudoaneurysm**

*Alonzo, Daniel M., Pascual, Ma. Victoria*

**Objective:** To present a rare case of post-traumatic recurrent epistaxis in an elderly woman.

**Methods:**

**Design:** Case Report

**Setting:** Tertiary Private Hospital

**Patient:** One

**Result:** A 93-year-old woman had multiple admissions for recurrent life threatening nosebleeding that was not controlled until a post-traumatic pseudoaneurysm of the infraorbital artery was diagnosed and embolized.

**Conclusion:** The diagnosis of pseudoaneurysm should be considered in such cases, and treatment involving surgeons and interventional radiologists should be initiated to minimize morbidity and mortality. (**Authors' abstract**)

**Keywords:** Medicine, Recurrent epistaxis, Post-traumatic pseudoaneurysm, Right infraorbital artery, Right internal maxillary artery, Embolization

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 31 Issue No. 1, 45  
2016,  
(Filipiniana Analytics)  
NP

0479

## ***The recurrent laryngeal nerve in relation to the inferior thyroid artery in adult Filipino cadavers***

***Dumlao, Karen June P. , Matubis, Jacob S. , Carrillo, Ryner J***

**Objective:** To describe the anatomic relationship of the recurrent laryngeal nerve and the inferior thyroid artery in adult cadavers in the Philippines and to compare the proportions of these anatomic relationships with those reported in the foreign literature.

**Methods:**

**Design:** Descriptive, cross-sectional

**Setting:** University of the Philippines College of Medicine Anatomy Laboratory

**Subjects:** Fifty-four (54) preserved cadavers (108 sides) dissected within a period from June 2008 to Aug 2010. The anatomy and position of both the right and the left recurrent laryngeal nerves (RLN) and inferior thyroid arteries (ITA) were noted. The RLN was further classified into two variations: non-branching or branching prior to insertion at the cricothyroid joint under the inferior constrictor muscle. The ITA was also classified into non-branching and branching. The results were compared to two foreign studies using a Z-test for two proportions.

**Results:** Fifty four (54) cadavers (108 sides) were dissected. Among the cadavers, both the recurrent laryngeal nerves and inferior thyroid arteries had a maximum of two branches although both the RLNs and ITAs for both the right and left sides were mostly non-branching. The right side of one cadaver was noted to have both a branching RLN and a branching ITA. There were no non-recurrent laryngeal nerves seen among the 54 cadavers. For both left and right sides, the RLN was mostly dorsal to the ITA. Branching RLNs was mostly dorsal to a non-branching ITAs. Most of the non-branching RLNs were dorsal to the ITAs. Non branching RLNs were usually dorsal to the ITA. The local patterns of the course of the RLN in relation to the ITA approximates those of Chinese where there is predominance of the RLN dorsal to the ITA but differs from those of Brazilians where the RLN is usually between ITA branches.

**Conclusion:** There are multiple anatomical variations regarding the relationship of the RLN and the ITA. The anatomic variation among Asians may be different from Brazilians. The surgeon's knowledge of the possible various configurations of the RLN and ITA should be able to help in identification and preservation of the RLN and prevention of complications in thyroid surgery. **(Authors' abstract)**

**Keywords:** Medicine, Recurrent laryngeal nerve, Inferior thyroid artery, Filipino cadavers, Anatomical variations

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 26 Issue No. 2, 13-17  
2011,  
(Filipiniana Analytics)  
NP

0480

## ***Reflexive behavioral test, "Baah" test, otoacoustic emission, hearing screening***

***Martinez, Norberto V. , Gelera, Janu***

**Objective:** To describe an unusual presentation of undifferentiated nasopharyngeal malignancy with immunohistochemical features of both diffuse B-cell lymphoma and undifferentiated carcinoma.

**Methods:**

**Design:** Case Report

**Setting:** Tertiary Private University Hospital

**Patient:**

One

**Results:** A 49-year-old female whose initial nasopharyngeal biopsy interpretation was diffuse large B-cell lymphoma underwent three cycles of Rituximab, Cyclophosphamide, Hydroxydaunomycin, Oncovin and Prednisone (R-CHOP). Post-chemotherapy Computed Tomography (CT) scan of the nasopharynx revealed no change in tumor size or appearance. Repeat nasopharyngeal (NP) biopsy findings suggested an epithelial tumor lineage or post-chemotherapy reactive mucosal epithelial cells. No residual lymphoma was noted and immunostaining was positive for cytokeratin. The patient underwent 35 fractions of radiotherapy. Re-evaluation by Magnetic Resonance Imaging (MRI) with contrast after four months showed significant tumor shrinkage. Repeat NP biopsy revealed necrotic tissues with foci of high-grade squamous cell carcinoma. Two months after the biopsy, repeat MRI with contrast of the nasopharynx and neck showed increase in the bulk of the nasopharyngeal tumor with inferior extension to the level of the oropharynx and possible contralateral involvement. A nasopharyngectomy via left maxillary swing was performed and the final histopathology was undifferentiated carcinoma.

**Conclusion:** Undifferentiated malignancies of the nasopharynx may contain lymphoma or carcinoma and rarely, both lineages in coexistence. In such cases, the possibility of a collision tumor should be considered. Immunohistochemical distinction is important for treatment and prognostication. (**Authors' abstract**)

**Keywords:** Medicine, Nasopharyngeal carcinoma, Undifferentiated tumor, Undifferentiated carcinoma, Nasopharyngeal lymphoma, Collision tumors, Immunohistochemistry, Diffuse large B-cell lymphoma, Secondary malignancy

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 27 Issue No. 1, 12-17  
2012,  
(Filipiniana Analytics)  
NP

0481

### **Regulation of calcineurin by growth cone calcium waves controls neurite extension**

**Spitzer, Nicholas C. , Lautermilch, Nat**

Growth cones generate spontaneous transient elevations of intracellular  $Ca^{2+}$  that regulate the rate of neurite outgrowth. Here we report that these  $Ca^{2+}$  waves inhibit neurite extension via the  $Ca^{2+}$ -dependent phosphatase calcineurin (CN) in *Xenopus* spinal neurons. Pharmacological blockers of CN (cyclosporin A and deltamethrin) and peptide inhibitors of CN [the *Xenopus* CN (xCN) autoinhibitory domain and African swine fever virus protein A238L] block the  $Ca^{2+}$ -dependent reduction of neurite outgrowth in cultured neurons. Time-lapse microscopy of growing neurites demonstrates directly that the reduction in the rate of outgrowth by  $Ca^{2+}$  transients is blocked by cyclosporin A. In contrast, expression of a constitutively active form of xCN in the absence of waves results in shorter neurite lengths similar to those seen in the presence of waves. The developmental expression pattern of xCN transcripts in vivo coincides temporally with axonal pathfinding by spinal neurons, supporting a role of CN in regulating  $Ca^{2+}$ -dependent neurite extension in the spinal cord.  $Ca^{2+}$  wave frequency and  $Ca^{2+}$ -dependent expression of GABA are not affected by inhibition or activation of CN. However, phosphorylation of the cytoskeletal element GAP-43, which promotes actin polymerization, is reduced by  $Ca^{2+}$  waves and enhanced by suppression of CN activity. CN ultimately acts on the growth cone actin cytoskeleton, because disrupting actin microfilaments with cytochalasin D or stabilizing them with jasplakinolide negates the effects of suppressing or activating CN. Destabilization or stabilization of microtubules with colcemide or taxol results in  $Ca^{2+}$ -independent inhibition of neurite outgrowth. The results identify components of the cascade by which  $Ca^{2+}$  waves act to regulate neurite extension. (**Author's abstract**)

**Keywords:** Medicine, Axonal outgrowth, Calcium transients, Actin, Microtubules, GAP-43, PPI, PP2A, PP2B

**Rehabilitation of smell after total laryngectomy**  
**Ramirez, Jr., Rica**

Olfactory deterioration is a major consequence of total laryngectomy that results from the permanent separation of the upper and lower airways. Total laryngectomy not only affects the natural voice lost but it brings about other psychosocial problems. Leon et al. noted that the inability to detect smoke or other odorous danger signals can threaten the personal safety of patients after laryngectomy. Impaired olfactory function adversely impacts their quality of life, which contributes to weight loss and poor nutritional status because the ability to sense different flavors requires a functional olfactory epithelium. The inability to detect bodily odors can cause problems in daily life and the inability to perceive agreeable odors or fragrances can be experienced as a significant loss. Since the senses called "tastes" are dependent on retronasal stimulation of the olfactory receptors, the perception of such tastes will also be negatively influenced by the loss of the sense of smell.

Olfaction is either a passive or active process. Passive olfaction occurs during normal nasal breathing while active processes occur during smelling and sniffing. Hilgers et al. 3 noted that total laryngectomy inevitably results in the loss of passive smelling and only a minority of patients are still able to actively smell anything. Their study of 63 laryngectomees found that about two thirds of the patients were anosmic and that the rest had difficulty in smelling. (Author's abstract)

**Keywords:** Medicine, Total laryngectomy, Olfactory deterioration, Olfaction

**Relapsing polychondritis initially presenting with hoarseness and difficulty breathing in a 21-year-old male**  
**Padua, Paula Francezca , Lim, Will**

**Objective:** To present a case of relapsing polychondritis initially presenting with hoarseness and difficulty breathing and to discuss the diagnostic criteria and typical CT scan findings of relapsing polychondritis.

**Methods:**

**Design:** Case Report

**Setting:** Tertiary Private Hospital in Metro Manila

**Patient:**

One

**Result:** A 21-year-old man who was initially managed as a case of bronchial asthma for persistent hoarseness and recurrent difficulty breathing was found to have severe laryngeal edema on endoscopy, and soft tissue expansion of the cricoid cartilage with calcifications and irregular first tracheal ring on CT scan. He also had recurrent eye redness and developed bilateral aural inflammation, and was subsequently diagnosed to have relapsing polychondritis.

**Conclusion:** Relapsing polychondritis is a rare autoimmune disease characterized by recurrent inflammation and eventual destruction of cartilage throughout the body. Typical manifestations may not always be present, causing a delay in diagnosis. It should be considered in patients with intractable respiratory symptoms not responsive to treatment for upper respiratory tract infections or asthma. A CT scan may reveal signs of cartilage destruction and help in diagnosis. **(Authors' abstract)**

**Keywords:** Medicine, Polychondritis, Relapsing, Airway involvement, Imaging

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2016,  
(Filipiniana Analytics)  
NP

0484

### **Relationship of activity in the subthalamic nucleus–globus pallidus network to cortical electroencephalogram**

**Bevan, Mark D. , Bolam, Paul , Magill, Pe**

One of the functions of the excitatory subthalamic nucleus (STN) is to relay cortical activity to other basal ganglia structures. The response of the STN to cortical input is shaped by inhibition from the reciprocally connected globus pallidus (GP). To examine the activity in the STN–GP network in relation to cortical activity, we recorded single and multiple unit activity in STN and/or GP together with cortical electroencephalogram in anesthetized rats during various states of cortical activation.

During cortical slow-wave activity (SWA), STN and GP neurons fired bursts of action potentials at frequencies that were similar to those of coincident slow (~1 Hz) and spindle (7–14 Hz) cortical oscillations. Spontaneous or sensory-driven global activation was associated with a reduction of SWA and a shift in STN–GP activity from burst- to tonic- or irregular-firing. Rhythmic activity in STN and GP neurons was lost when the cortex was inactivated by spreading depression and did not resume until SWA had recovered.

Although rhythmic STN–GP activity was correlated with SWA, the phase relationships of activities of neurons within the STN and GP and between the nuclei were variable. Even when neurons displayed synchronous bursting activity, correlations on the millisecond time scale, which might indicate shared synaptic input, were not observed.

These data indicate that (1) STN and GP activity is intimately related to cortical activity and hence the sleep–wake cycle; (2) rhythmic oscillatory activity in the STN–GP network in disease states may be driven by the cortex; and (3) activity of the STN–GP network is regulated in space in a complex manner. **(Authors' abstract)**

**Keywords:** Medicine, Subthalamic nucleus, Globus pallidus, Basal ganglia, Cortex, EEG, Slow-wave, Spindle, Oscillations, Activation, Sleep, Parkinsons disease

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2000 January,



**Relief of G-protein inhibition of calcium channels and short-term synaptic facilitation in cultured hippocampal neurons**

**Yue, David T. , Brody, Da**

*G-protein inhibition of voltage-gated calcium channels can be transiently relieved by repetitive physiological stimuli. Here, we provide evidence that such relief of inhibition contributes to short-term synaptic plasticity in microisland-cultured hippocampal neurons. With G-protein inhibition induced by the GABA<sub>B</sub>receptor agonist baclofen or the adenosine A1 receptor agonist 2-chloroadenosine, short-term synaptic facilitation emerged during action potential trains. The facilitation decayed with a time constant of ~100 msec. However, addition of the calcium channel inhibitor Cd<sup>2+</sup> at 2–3 μm had no such effect and did not alter baseline synaptic depression. As expected of facilitation from relief of channel inhibition, analysis of miniature EPSCs implicated presynaptic modulation, and elevating presynaptic Ca<sup>2+</sup> entry blunted the facilitation. Most telling was the near occlusion of synaptic facilitation after selective blockade of P/Q- but not N-type calcium channels. This was as predicted from experiments using recombinant calcium channels expressed in human embryonic kidney (HEK) 293 cells; we found significantly stronger relief of G-protein inhibition in recombinant P/Q- versus N-type channels during action potential trains. G-protein inhibition in HEK 293 cells was induced via recombinant M2 muscarinic acetylcholine receptors activated by carbachol, an acetylcholine analog. Thus, relief of G-protein inhibition appears to produce a novel form of short-term synaptic facilitation in cultured neurons. Similar short-term synaptic plasticity may be present at a wide variety of synapses, as it could occur during autoreceptor inhibition by glutamate or GABA, heterosynaptic inhibition by GABA, tonic adenosine inhibition, and in many other instances. (Author's abstract)*

**Keywords:** *Medicine, Short-term synaptic plasticity, Facilitation, GABA, Baclofen, G-protein inhibition, Calcium channels, Recombinant calcium channels, Microcultures, Cultured neurons, Autapses, Hippocampal neurons, Adenosine, HEK 293 cells*

**Rescue of hearing, auditory hair cells, and neurons by CEP-1347/KT7515, an Inhibitor of c-Jun N-terminal kinase activation**

**Ylikoski Jukka , Walton, Kevin M. , Camoratto, Anna Marie , Murakata, Chikara , Saarma, Mart , Virkkala, Jussi , Xing-Qun, Liang , Pirvol**

*We have studied the mechanisms of auditory hair cell death after insults in vitro and in vivo. We show DNA fragmentation of hair cell nuclei after ototoxic drug and intense noise trauma. By using phospho-specific c-Jun-N-terminal kinase (JNK) and c-Jun antibodies in immunohistochemistry, we show that the JNK pathway, associated with stress, injury, and apoptosis, is activated in hair cells after trauma. CEP-1347, a derivative of the indolocarbazole K252a, is a small molecule that has been shown to attenuate neurodegeneration by blocking the activation of JNK (Maroney et al., 1998). Subcutaneously delivered CEP-1347 attenuated noise-induced hearing loss. The protective effect was demonstrated by functional tests, which showed less hearing threshold shift in CEP-*

1347-treated than in nontreated guinea pigs, and by morphometric methods showing less hair cell death in CEP-1347-treated cochleas. In organotypic cochlear cultures, CEP-1347 prevented neomycin-induced hair cell death. In addition to hair cells, CEP-1347 promoted survival of dissociated cochlear neurons. These results suggest that therapeutic intervention in the JNK signaling cascade, possibly by using CEP-1347, may offer opportunities to treat inner ear injuries. **(Author's abstract)**

**Keywords:** Medicine, Cochlea, Noise trauma, Aminoglycoside toxicity, Cell death, c-Jun, Therapy

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2000 January,  
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NP

0487

**Respiratory epithelial adenomatoid hamartoma of the nasal septum**  
**Husain, Salina , Gendeh, Balwant Singh, Zulkepli, Siti Zul**

**Objective:** Hamartomas are relatively uncommon, non-neoplastic malformations indigenous to the involved anatomic site. Respiratory epithelial adenomatoid hamartoma (REAH) is a subset of hamartoma characterized by prominent glandular proliferation lined by ciliated epithelium originating from the surface epithelium. Their location in the nasal cavity is rare and when present, mostly associated with the posterior nasal septum. We present such a case arising from the anterior nasal septum.

**Methods:**

**Design:** Case report

**Setting:** Tertiary University Referral Center

**Patient:** One

**Results:** A 32-year-old lady who presented with a long-standing nasal block was found to have a broad-based nasal mass arising from the left anterior nasal septum. The lesion was histologically diagnosed as respiratory epithelial adenomatoid hamartoma following surgical excision.

**Conclusion:** Respiratory epithelial adenomatoid hamartoma although rare must be taken into consideration in the differential diagnosis of nasal lesions. **(Authors' abstract)**

**Keywords:** Medicine, Respiratory epithelial adenomatoid hamartoma, Anterior nasal septum, Nasal block

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2012,  
(Filipiniana Analytics)  
NP

0488

**Restricted expression of G86R Cu/Zn superoxide dismutase in astrocytes results in astrocytosis but does not cause motoneuron degeneration**

*Elliott, Jeffrey L. , Snider, William D. , Andreeva, Albina , Parsadianian, Alexander S. , Gong,*

Evidence garnered from both human autopsy studies and genetic animal models has suggested a potential role for astrocytes in the pathogenesis of amyotrophic lateral sclerosis (ALS). Currently, mutations in the gene encoding Cu/Zn superoxide dismutase (SOD1) represent the only known cause of motoneuron loss in the disease, producing 21q linked familial ALS (FALS). To determine whether astrocytic dysfunction has a primary role in familial ALS, we have generated multiple lines of transgenic mice expressing G86R mutant SOD1 restricted to astrocytes. In GFAP-m SOD1 mice, astrocytes exhibit significant hypertrophy and increased GFAP reactivity as the animals mature. However, GFAP-mutant SOD1 transgenic mice develop normally and do not experience spontaneous motor deficits with increasing age. Histological examination of spinal cord in aged GFAP-mSOD1 mice reveals normal motoneuron and microglial morphology. These results indicate that 21q linked FALS is not a primary disorder of astrocytes, and that expression of mutant SOD1 restricted to astrocytes is not sufficient to cause motoneuron degeneration in vivo. Expression of mutant SOD1 in other cell types, most likely neurons, is critical for the initiation of disease. (Author's abstract)

**Keywords:** Medicine, Amyotrophic lateral sclerosis, Glutamate, Mouse, Transgenic, Glia, Gliosis

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2000,  
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NP

0489

**Rhinofacial conidiobolomycosis in a 16-year-old girl**

*Parilla, Xirxiz Vin C. , Cachuela, Jos*

**Objectives:** To present the case of a 16-year-old girl with progressive facial disfigurement spanning 11 months due to conidiobolomycosis.

**Methods:**

**Design:** Case Report

**Setting:** Tertiary Government Hospital

**Patient:** One

**Results:** A 16-year-old girl presented with a severe facial deformity of 11 months duration. The lesion started as a swelling in the right nasal vestibule, which later involved the entire nose, forehead, cheeks, upper and lower lip. A series of tissue biopsies revealed varied results -- chronic inflammation, chronic granulomatous inflammation with foreign body type giant cells, and eosinophilic granuloma--resulting in delayed provision of appropriate treatment. On the fourth biopsy using Grocott methenamine silver staining technique, septate fungal hyphae were identified. With a diagnosis of rhinofacial conidiobolomycosis, she was started on Itraconazole 100mg three times daily for eight months. Her facial swelling subsided gradually during the course of treatment and no systemic drug-related complications were observed.

**Conclusion:** Rhinofacial conidiobolomycosis is a rare chronic localized fungal infection that usually affects midline facial structures in immunocompetent hosts. Early detection and diagnosis, and appropriate medication can

give rapid resolution. To the best of our knowledge, this may be the first documented case of rhinofacial conidiobolomycosis in the Philippines. **(Authors' abstract)**

**Keywords:** Medicine, Conidiobolomycosis, Conidiobolus, Fungal infection, Itraconazole, Therapeutic use

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2016,  
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NP

0490

**Ribozyme-mediated inhibition of caspase-3 protects cerebellar granule cells from apoptosis induced by serum-potassium deprivation**

**Faden, Alan I. , Ren, Ren-Á©e F. , Eldadah, Ba**

Apoptosis is an important mechanism of physiological and pathological cell death. It is regulated by several gene products, including caspases and the bcl-2-like proteins, whose roles have been demonstrated in numerous systems. One of these is a model of cerebellar granule cells (CGCs) in which apoptosis is induced by acute removal of serum and depolarizing concentrations of potassium. Previous work by several authors showed that benzyloxycarbonyl-DEVD-fluoromethylketone, a somewhat selective caspase inhibitor, significantly protected CGCs from apoptosis; however, because this molecule targets multiple caspases, it is not known whether a single caspase is primarily responsible for effecting cell death in this model. We attempted to answer this question by cotransfecting CGCs with green fluorescent protein reporter and a hammerhead ribozyme directed against caspase-3 mRNA. Maximal protection by this ribozyme was observed after 24 hr of deprivation, at which time apoptosis was  $18 \pm 0.7\%$  compared with  $32 \pm 2\%$  in control cells. Significant protection was also observed with human inhibitor of apoptosis (IAP)-like protein-X-linked IAP, a specific inhibitor of caspase-3, -7, and -9, and with p35, a general caspase inhibitor. Overexpression of bcl-2 produced almost complete protection from apoptosis after 24 hr of serum-K<sup>+</sup> deprivation ( $5 \pm 2$  vs  $44 \pm 2\%$  in control cells). These results confirm that caspases play an important role in CGC apoptosis and indicate that caspase-3 itself is a significant mediator of this process. **(Author's abstract)**

**Keywords:** Medicine, Apoptosis, Caspase, Cerebellar granule cell, Ribozyme, IAP, Transfection

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NP

0491

**A role for voltage-gated potassium channels in the outgrowth of retinal axons in the developing visual system**

**Pollock, Natasha S. , McFarlane,**

Neural activity is important for establishing proper connectivity in the developing visual system. Tetrodotoxin blockade of sodium (Na<sup>+</sup>)-dependent action potentials impairs the refining of synaptic connections made by developing retinal ganglion cells (RGCs), but does not affect their ability to get out to their target. Although this may suggest neural activity is not required for the directed extension of RGC axons, in many species developing

RGCs express additional, Na<sup>+</sup>-independent ionic mechanisms. To test whether the ability of RGC axons to extend in a directed fashion is influenced by membrane excitability, we blocked the principal modulators of the neural activity of a neuron, voltage-dependent potassium (Kv) channels. First, we showed that RGCs and their growth cones express Kv channels when they are growing through the brain on the way to their main midbrain target, the optic tectum. Second, a Kv channel blocker, 4-aminopyridine (4-AP), was applied to the developing *Xenopus* optic projection. Blocking Kv channels inhibited RGC axon extension and caused aberrant routing of many RGC fibers. With the higher doses, <25% of embryos had a normal optic projection. These data suggest that Kv channel activity regulates the guidance of growing axons in the vertebrate brain. (**Author's abstract**)

**Keywords:** Medicine, Axon guidance, *Xenopus*, Target recognition, Growth cone, Electrical activity, Neurite outgrowth, Voltage-dependent potassium channels

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(Filipiniana Analytics)  
NP

0493

**Rosai-dorfman disease presenting as recurrent nasal polyposis**  
**Rivera, Rodolfo E. , Apale, Neil Louis L. , Romualdez, J**

**Objectives:** To present a case of Rosai-Dorfman disease in an individual with a 14-year history of recurrent nasal polyposis and discuss its clinical presentation, physical examination, radiologic findings, histopathologic characteristics and available treatment.

**Methods:**

<b>Design:</b>	Case	Report	
<b>Setting:</b>	Tertiary	Government	Hospital
<b>Patient:</b>		One	

**Results:** A 26-year-old Filipino diagnosed and repeatedly treated medically and surgically for recurrent nasal polyposis underwent repeat endoscopic sinus surgery. A histopathologic impression of Rosai-Dorfman disease was confirmed by positive S-100 and CD1a negative immunohistochemistry in conjunction with the morphologic findings.

**Conclusion:** Rosai-Dorfman disease is a rare entity which should be considered when dealing with recurrent nasal polyposis that is intractable to initial medical and surgical therapies. Histopathologic findings of emperipolesis and immunohistochemical S-100 stains play a key role in the diagnosis but there is yet no definite treatment for this disease. (**Authors' abstract**)

**Keywords:** Medicine, Recurrent nasal polyposis, Rosai-dorfman disease, Emperipolesis, S-100 stain

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2014,  
(Filipiniana Analytics)  
NP

## **Secondary nicotinic synapses on sympathetic B neurons and their putative role in ganglionic amplification of activity**

**Horn, John P. , Karila**

The strength and number of nicotinic synapses that converge on secretomotor B neurons were assessed in the bullfrog by recording intracellularly from isolated preparations of paravertebral sympathetic ganglia 9 and 10. One input to every B neuron invariably produced a suprathreshold EPSP and was defined as the primary nicotinic synapse. In addition, 93% of the cells received one to four subthreshold inputs that were defined as secondary nicotinic synapses. This contradicts the prevailing view, which has long held that amphibian B neurons are singly innervated. More important, the results revealed that B cells provide the simplest possible experimental system for examining the role of secondary nicotinic synapses on sympathetic neurons. Combining the convergence data with previous estimates of divergence indicates that the average preganglionic B neuron forms connections with 50 ganglionic B neurons and that the majority of these nicotinic synapses are secondary in strength. Secondary EPSPs evoked by low-frequency stimulation ranged from 0.5 to 10 mV in amplitude and had an average quantal content of 1. Nonetheless, secondary synapses could trigger action potentials via four mechanisms: spontaneous fluctuations of EPSP amplitude, two-pulse facilitation, coactivation with other secondary synapses, and coactivation with a slow peptidergic EPSP. The data were used to formulate a stochastic theory of integration, which predicts that ganglia function as amplifiers of the sympathetic outflow. In this two-component scheme, primary nicotinic synapses mediate invariant synaptic gain, and secondary nicotinic synapses mediate activity-dependent synaptic gain. The model also provides a common framework for considering how facilitation, metabotropic mechanisms, and preganglionic oscillators regulate synaptic amplification in sympathetic ganglia. **(Author's abstract)**

**Keywords:** Medicine, Activity-dependent modulation, Bullfrog sympathetic ganglia, Neuronal nicotinic receptors, Nicotinic synapses, Metabotropic synapses, Synaptic integration, Sympathetic nervous system

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 2000 February,  
 (Filipiniana Analytics)  
 NP

## **Segregation of on and off bipolar cell axonal arbors in the absence of retinal ganglion cells**

**Kahn, Dianna , Gáñhan-Agar, Emine, Chalupa, Leo**

Retinal cells that respond selectively to light onset or offset are segregated into On and Off pathways. Here, we describe the development of cone bipolar cells whose axonal arbors at maturity synapse onto ganglion cell dendrites confined to On and Off strata of the inner plexiform layer (IPL). In particular, we sought to determine whether the formation of this segregated pattern is dependent on the presence of ganglion cells. Developing bipolar cells were visualized using an antibody against recoverin, the calcium binding protein that labels On and Off cone bipolar cells in the adult rat retina. Recoverin-positive cells were apparent in the ventricular zone on the day of birth [postnatal day 0 (P0)], before bipolar cells begin to migrate to the inner nuclear layer. Two distinct strata were first apparent in the IPL at P8, with the Off pathway maturing earlier than the On pathway. There was no indication of exuberant bipolar cell projections. Throughout development, there were also a small number of recoverin-positive cells of unknown origin in the ganglion cell layer.

To assess whether the formation of On and Off cone bipolar cell projections is dependent on the presence of ganglion cells, these target neurons were eliminated by unilateral section of the optic nerve. This was done on the day of birth, resulting in a total loss of ganglion cells 5–6 d before bipolar cell axons innervate the IPL. In retinas

with optic nerve sections, On and Off cone bipolar cells were present, albeit at a lower than normal density, and the axonal arbors of these interneurons were organized into two distinct strata. This indicates that ganglion cells are not essential for the formation of segregated On and Off bipolar cell inputs. These results lend support to the hypothesis that specific ingrowth patterns of bipolar cell terminal arbors could regulate the formation of stratified retinal ganglion cell dendrites. **(Authors' abstract)**

**Keywords:** Medicine, On and Off pathways, Bipolar cells, Ganglion cells, Retina, Recoverin, Development

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NP

0496

**Selective innervation of retinorecipient brainstem nuclei by retinal ganglion cell axons  
regenerating through peripheral nerve grafts in adult rats**

**Lund, Raymond D. , SauvÃ©, Yves , AvilÃ©s-Trigueros, Marcelino, Vidal-Sanz, Ma**

The pattern of axonal regeneration, specificity of reinnervation, and terminal arborization in the brainstem by axotomized retinal ganglion cell axons was studied in rats with peripheral nerve grafts linking the retina with ipsilateral regions of the brainstem, including dorsal and lateral aspects of the diencephalon and lateral aspect of the superior colliculus. Four to 13 months later, regenerated retinal projections were traced using intraocular injection of cholera toxin B subunit. In approximately one-third of the animals, regenerated retinal axons extended into the brainstem for distances of up to 6 mm. Although axons followed different patterns of ingrowth depending on their site of entry to the brainstem, within the pretectum, they innervated preferentially the nucleus of the optic tract and the olivary pretectal nucleus in which they formed two types of terminal arbors. Within the superior colliculus, axons extended laterally and formed a different terminal arbor type within the stratum griseum superficiale. In the remaining two-thirds of the animals, retinal fibers formed a neuroma-like structure at the site of entry into the brainstem, or a few fibers extended for very short distances within the neighboring neuropil. These experiments suggest that regenerated retinal axons are capable of a highly selective reinnervation pattern within adult denervated retinorecipient nuclei in which they form well defined terminal arbors that may persist for long periods of time. In addition, these studies provide the anatomical correlate for our previous functional study on the re-establishment of the pupillary light reflex in this experimental paradigm. **(Author's abstract)**

**Keywords:** Medicine, Peripheral nerve, Axonal regeneration, Retina, Pretectal nuclei, Superior colliculus, Adult mammal

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0497

**Self efficacy and self-care management outcome of chronic renal failure patients**

**Balaga, Paolo Angelo**

Patients with chronic renal failure (CRF) often fail to comply with their diet therapy, as well as hemodialysis and medications, caused by low perceived self-efficacy which undermines the effectiveness of self-care. This paper looked into self-efficacy and self-care management outcome of patients with CRF utilizing Bandura's Self-Efficacy Theory as basis for self-care management guidelines. Respondents included 50 randomly chosen CRF patients acquiring hemodialysis in Cebu City who answered the researcher-made questionnaire. Exploring patient's self-efficacy, the researcher observed that many respondents claimed compliance to diet, hemodialysis treatment and medications and showed hypoalbuminemia and hypophosphatemia throughout the year. Diet adherence was positively correlated to albumin levels, had inverse relationship to interdialytic weight gain levels and had no significant correlation to preblood urea nitrogen levels. Kt/V and urea reduction ratio levels possessed no significant correlation to compliance with hemodialysis. Meanwhile, compliance with medications had direct bearing on hemoglobin and hematocrit levels and had inverse relationship to phosphorus levels. In conclusion, self-efficacy had bearing on self-care management outcome of CRF patients. Health professionals need to constantly evaluate the patient's self-efficacy in compliance to improve prognosis and quality of life of CRF patients. **(Author's abstract)**

**Keywords:** Medicine, Chronic renal failure, Self efficacy, Self-care management outcome, Hemodialysis

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2012,  
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NP

0498

### **Sensorineural hearing loss: what lies beneath? neurovascular conflict secondary to a dural arteriovenous malformation**

**Bickle,**

Auditory impairment is a condition with a legion of potential causes. One of the routine aspects of the assessment process for those with sensorineural hearing loss is MR imaging (MRI) of the internal auditory meati (IAMS). The vast majority of MRI studies are normal, however one of the more commonly identified pathologies are cerebrovascular abnormalities. The most-well recognised is neurovascular conflict of the vestibulocochlear nerve by a vascular loop at the root entry zone (REZ), however a broader range of potential responsible structural abnormalities are known. A wide range of processes for auditory dysfunction have been outlined.<sup>1</sup> These include: cerebral ischemia events, subarachnoid hemorrhage, cerebrovascular malformations and rarely dural arteriovenous fistulas (dAVFs). **(Author's abstract)**

**Keywords:** Medicine, Neurovascular conflict , Dural arteriovenous malformation, Magnetic Resonance imaging (MRI)

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2014,  
(Filipiniana Analytics)  
NP

0499

**Septamer element-binding proteins in neuronal and glial differentiation**  
**Agoston, Denes V. , Ring, Mary A. , Palkovits, Christina G. , Palkovits, Miklos , Dobi,**



Differentiation of progenitors into neurons and glia is regulated by interactions between regulatory DNA elements of neuron- and glia-specific genes and transcription factors that are differentially expressed by progenitors at progressive stages of neural development. We have identified a novel DNA regulatory element (TTTGCAT = septamer) present on the enkephalin (ENK), neuronal cell adhesion molecule, neurofilament of 68 kDa (NF68), growth-associated protein of 43 kDa, glial high-affinity glutamine transporter, tyrosine hydroxylase, etc., genes. When septamer function was blocked by introducing septamer competitor DNA into primary differentiating neural cultures, mRNA levels of ENK, NF68, and glial fibrillary acidic protein decreased by 50–80%, whereas no effect was seen using a control DNA. Septamer elements serve as binding sites for lineage-specific multimeric complexes assembled from three distinct nuclear proteins. Progenitors express a 16 kDa protein (p-sept) which binds to DNA as a homodimer (detected as the 32 kDa P-band). Cells that entered the neuronal lineage express an additional 29 kDa protein (n-sept) that binds to the homodimerized p-sept, and together they form a 62 kDa multimer (detected as N-band). Cells that entered the glial lineage express a distinct 23 kDa protein (g-sept), which along with the homodimerized p-sept form a 56 kDa multimer (observed as G-band). The binding of the distinct protein complexes (P, G, and N) to the septamer site causes a lineage-specific DNA bending ( $P = 53^\circ$ ;  $G = 72^\circ$ ; and  $N = 90^\circ$ ), which may contribute to the regulatory effect of the septamer interaction. In summary, septamer and its binding proteins represent novel protein–DNA interactions that may contribute to the regulation of neuroglial differentiation in the developing mammalian CNS. (Author's abstract)

**Keywords:** Medicine, Progenitors, Neuron, Glia, Development, DNA molecular decoy, DNA bending

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2000 February,  
(Filipiniana Analytics)  
NP

0500

### **Serotonin and the 5-HT<sub>2B</sub> receptor in the development of enteric neurons**

**Gershon, Michael D. , Maroteaux, Luc , Fiorica-Howells,**

We tested the hypothesis that 5-HT promotes the differentiation of enteric neurons by stimulating a developmentally regulated receptor expressed by crest-derived neuronal progenitors. 5-HT and the 5-HT<sub>2</sub> agonist ( $\pm$ )-2,5-dimethoxy-4-iodoamphetamine.HCl (DOI) enhanced in vitro differentiation of enteric neurons, both in dissociated cultures of mixed cells and in cultures of crest-derived cells isolated from the gut by immunoselection with antibodies to p75<sup>NTR</sup>. The promotion of in vitro neuronal differentiation by 5-HT and DOI was blocked by the 5-HT<sub>1/2</sub> antagonist methysergide, the pan-5-HT<sub>2</sub> antagonist ritanserin, and the 5-HT<sub>2B/2C</sub>-selective antagonist SB206553. The 5-HT<sub>2A</sub>-selective antagonist ketanserin did not completely block the developmental effects of 5-HT. 5-HT induced the nuclear translocation of mitogen-activated protein kinase. This effect was blocked by ritanserin. mRNA encoding 5-HT<sub>2A</sub> and 5-HT<sub>2B</sub> receptors was detected in the fetal bowel (stomach and small and large intestine), but that encoding the 5-HT<sub>2C</sub> receptor was not. mRNA encoding the 5-HT<sub>2B</sub> receptor and 5-HT<sub>2B</sub> immunoreactivity were found to be abundant in primordial [embryonic day 15 (E15)–E16] but not in mature myenteric ganglia. 5-HT<sub>2B</sub>-immunoreactive cells were found to be a subset of cells that expressed the neuronal marker PGP9.5. These data demonstrate for the first time that the 5-HT<sub>2B</sub> receptor is expressed in the small intestine as well as the stomach and that it is expressed by enteric neurons as well as by muscle. It is possible that by stimulating 5-HT<sub>2B</sub> receptors, 5-HT affects the fate of the large subset of enteric neurons that arises after the development of endogenous sources of 5-HT. (Author's abstract)

**Keywords:** Medicine, Enteric nervous system, Bowel, Gut, Neuronal development, Serotonin receptors, 5-HT

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2000 January,  
(Filipiniana Analytics)

***Short stop is Allelic to kakapo, and encodes rod-like cytoskeletal-associated proteins required for axon extension***

***Kolodziej, Peter A. , Whittington, Paul M. , Harris, Kerri-Lee , Lee, Se***

*short stop (shot) is required for sensory and motor axons to reach their targets in the Drosophila embryo. Growth cones in shot mutants initiate at the normal times, and they appear normal with respect to overall morphology and their abilities to orient and fasciculate. However, sensory axons are unable to extend beyond a short distance from the cell body, and motor axons are unable to reach target muscles. The shot gene encodes novel actin binding proteins that are related to plakins and dystrophin and expressed in axons during development. The longer isoforms identified are predicted to contain an N-terminal actin binding domain, a long central triple helical coiled-coil domain, and a C-terminal domain that contains two EF-hand  $Ca^{2+}$  binding motifs and a short stretch of homology to the growth arrest-specific 2 protein. Other isoforms lack all or part of the actin binding domains or are truncated and contain a different C-terminal domain. Only the isoforms containing full-length actin binding domains are detectably expressed in the nervous system. shot is allelic to kakapo, a gene that may function in integrin-mediated adhesion in the wing and embryo. We propose that Shot's interactions with the actin cytoskeleton allow sensory and motor axons to extend. (Author's abstract)*

**Keywords:** *Medicine, Drosophila, Cytoskeleton, GAS2, Axon, Growth cones, Short stop, Kakapo*

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NP*

***Sinonasal mucosal melanoma: an enigma***

***Ullah, Hidayat, Baig, Mirza Qa***

**Objective:** *To report two cases of mucosal melanoma of the sinonasal cavity from India and review the literature emphasizing current important clinical and biologic aspects of this tumor.*

**Methods:**

<b>Design:</b>		Case		Report
<b>Setting:</b>	Tertiary	Public	Referral	Hospital
<b>Patients:</b>				Two

**Results:** *Two patients presenting with progressive unilateral nasal obstruction over three to six months, respectively, were diagnosed to have sinonasal mucosal melanoma. The mass involved the nasal cavity and maxillary antrum in both patients. The first patient deferred radiotherapy for four months until pulmonary metastasis became evident, necessitating palliative chemotherapy; the second patient underwent surgical excision and radiotherapy.*

**Conclusion:** *In spite of aggressive therapy, the prognosis for people with mucosal melanoma is extremely poor. Surgery remains the mainstay of treatment, although adjuvant radiation therapy has recently had an increasing role*

in the treatment of mucosal melanoma. A clear understanding of the pathophysiology of this disease may yield more specific immunotherapy and chemotherapy techniques. A multicenter prospective study is required to objectively assess the optimal treatment regimen. (**Authors' abstract**)

**Keywords:** Medicine, Mucosal melanoma, Sinonasal cavity, Radiotherapy, Surgery

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2011,  
(Filipiniana Analytics)  
NP

0503

### **Somatostatin modulates voltage-gated $K^+$ and $Ca^{2+}$ currents in rod and cone photoreceptors of the salamander retina**

**Brecha, Nicholas , Gabriel, Robert , Johnson, Juliette , Akopian, Abram, Witkovsky,**

We investigated the cellular localization in the salamander retina of one of the somatostatin [or somatotropin release-inhibiting factor (SRIF)] receptors, *sst2A*, and studied the modulatory action of SRIF on voltage-gated  $K^+$  and  $Ca^{2+}$  currents in rod and cone photoreceptors. SRIF immunostaining was observed in widely spaced amacrine cells, whose perikarya are at the border of the inner nuclear layer and inner plexiform layer. *sst2A* immunostaining was seen in the inner segments and terminals of rod and cone photoreceptors. Additional *sst2A* immunoreactivity was expressed by presumed bipolar and amacrine cells. SRIF, at concentrations of 100–500 nM, enhanced a delayed outwardly rectifying  $K^+$  current ( $I_K$ ) in both rod and cone photoreceptors. SRIF action was blocked in cells pretreated with pertussis toxin (PTX) and was substantially reduced by intracellular  $GDP_{\beta}S$ . Voltage-gated L-type  $Ca^{2+}$  currents in rods and cones were differently modulated by SRIF. SRIF reduced  $Ca^{2+}$  current in rods by 33% but increased it in cones by 40%, on average. Both effects were mediated via G-protein activation and blocked by PTX.  $Ca^{2+}$ -imaging experiments supported these results by showing that 500 nM SRIF reduced a  $K^+$ -induced increase in intracellular  $Ca^{2+}$  in rod photoreceptor terminals but increased it in those of cones. Our results suggest that SRIF may play a role in the regulation of glutamate transmitter release from photoreceptors via modulation of voltage-gated  $K^+$  and  $Ca^{2+}$  currents. (**Author's abstract**)

**Keywords:** Medicine, Somatostatin, Retina,  $Ca^{2+}$  channel,  $K^+$  channel, G-protein, Patch-clamp

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2000 February,  
(Filipiniana Analytics)  
NP

0504

### **Spatial and temporal structure of receptive fields in primate somatosensory area 3b: effects of stimulus scanning direction and orientation**

**Johnson, Kenneth O. , DiCarlo, Ja**

This is the third in a series of studies of the neural representation of tactile spatial form in somatosensory cortical area 3b of the alert monkey. We previously studied the spatial structure of >350 fingerpad receptive fields (RFs) with random-dot patterns scanned in one direction (DiCarlo et al., 1998) and at varying velocities (DiCarlo

and Johnson, 1999). Those studies showed that area 3b RFs have a wide range of spatial structures that are virtually unaffected by changes in scanning velocity. In this study, 62 area 3b neurons were studied with three to eight scanning directions (58 with four or more directions). The data from all three studies are described accurately by an RF model with three components: (1) a single, central excitatory region of short duration, (2) one or more inhibitory regions, also of short duration, that are adjacent to and nearly synchronous with the excitation, and (3) a region of inhibition that overlaps the excitation partially or totally and is temporally delayed with respect to the first two components. The mean correlation between the observed RFs and the RFs predicted by this three-component model was 0.81. The three-component RFs also predicted orientation sensitivity and preferred orientation to a scanned bar accurately. The orientation sensitivity was determined most strongly by the intensity of the coincident RF inhibition in relation to the excitation. Both orientation sensitivity and this ratio were stronger in the supragranular and infragranular layers than in layer IV. (**Author's abstract**)

**Keywords:** Medicine, Receptive field, Reverse correlation, Somatosensory, Monkey, Cortex, Cortical layer, Orientation sensitivity

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2000 January,  
(Filipiniana Analytics)  
NP

0505

### ***Spatial distributions of guidance molecules regulate chemorepulsion and chemoattraction of growth cones***

***PÃ¼schel, Andreas W. , Lohrum, Marion , Thomasset, Nicole , Bagnard, Dominique, Bolz, JÃ¼rgen***

It is generally assumed that gradients of chemotropic molecules are instrumental to the wiring of the nervous system. Recently, two members of the secreted class III semaphorin protein family have been implicated as repulsive (Sema3A) and attractive (Sema3C) guidance molecules for cortical axons (Bagnard et al., 1998). Here, we show that stabilized gradients of increasing semaphorin concentrations elicit stereotyped responses from cortical growth cones, independent of the absolute concentration and the slope of these gradients. In contrast, neither repulsive effects of Sema3A nor attractive effects of Sema3C were observed when axons were growing toward decreasing semaphorin concentrations. Thus, growth cone guidance by gradients of chemotropic molecules is robust and reproducible, because it is primarily independent of the exact dimensions of the gradients. (**Author's abstract**)

**Keywords:** Medicine, Wiring molecules, Axonal guidance, Gradients, Chemotropic attraction, Chemotropic repulsion, Semaphorins, Cortical development, In vitro assays, Time-lapse imaging

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2000 February,  
(Filipiniana Analytics)  
NP

0506

### ***Spindle cell carcinomas of the upper aerodigestive tract*** ***Carnate, Jr., J***

A 65-year-old male with a two-month history of cough and hoarseness underwent direct laryngoscopy which showed a 1.5 cm diameter polypoid glottic mass. A polypectomy was performed revealing spindle cell carcinoma.

The World Health Organization (2005) defines a spindle cell carcinoma as “a biphasic tumor composed of a squamous cell carcinoma, either in-situ and/or invasive, and a malignant spindle cell component with a mesenchymal appearance, but of epithelial origin.”<sup>1</sup> Spindle cell carcinomas go by a variety of synonyms such as sarcomatoid carcinoma, spindle cell squamous carcinoma and carcinosarcoma.

The larynx is a preferred site of involvement where they often present as polypoid masses.<sup>1,3</sup> Microscopic examination often shows predominance of the sarcomatoid, spindle-cell component, which can range from fairly bland, reactive-looking fibroblastic-proliferation-like processes, to cytologically malignant and mitotically active proliferations that mimic other spindle-cell sarcomas such as leiomyosarcoma, fibrosarcoma or malignant fibrous histiocytoma.<sup>1,2,3</sup> (Figure 1, double arrows) The squamous cell carcinoma component may be in the form of an overlying carcinoma-in-situ, or of a focal keratinizing invasive squamous cell carcinoma that requires multiple sections to disclose.<sup>1,2</sup> (Figure 1, single arrow) Cytokeratin-reactivity in the spindle cells, which may be quite focal as in this case, points to their epithelial derivation.<sup>1,2,4</sup> (Figure 2)

Favorable prognostic findings include polypoid morphology and, like conventional laryngeal squamous cell carcinomas, a low-stage and a glottic site of origin. Reported 5-year survival rates range from 65 – 95%.<sup>1</sup> **(Authors' abstract)**

**Keywords:** Medicine, Spindle cell carcinomas, Upper aerodigestive tract, Polypoid glottic mass, Sarcomatoid carcinoma, Spindle cell squamous carcinomas, Carcinosarcoma

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2012,  
(Filipiniana Analytics)  
NP

0507

### ***Stabilization of growing retinal axons by the combined signaling of nitric oxide and brain-derived neurotrophic factor***

**McLoon, Steven C. , Letourneau, Paul C. , Gallo, Gianluca , Ernst, A**

The pattern of axonal projections early in the development of the nervous system lacks the precision present in the adult. During a developmental process of refinement, mistargeted projections are eliminated while correct projections are retained. Previous studies suggest that during development nitric oxide (NO) is involved in the elimination of mistargeted retinal axons, whereas brain-derived neurotrophic factor (BDNF) may stabilize retinal axon arbors. It is unclear whether these neuromodulators interact. This study showed that NO induced growth cone collapse and retraction of developing retinal axons. This effect was not attributable to NO-induced neurotoxicity. BDNF protected growth cones and axons from the effects of NO. This effect was specific to BDNF, because neither nerve growth factor (NGF) nor neurotrophin-3 (NT-3) prevented NO-induced growth cone collapse and axon retraction. Exposure to both BDNF and NO, but not either factor alone, stabilized growth cones and axons. Stabilized axons exhibited minimal retraction or extension. This response appears to be a new axon “state” and not simply a partial amelioration of the effect of NO, because lower doses of BDNF or NO allowed axon extension. Furthermore, BDNF/NO-induced growth cone stabilization correlated with the appearance of a cytochalasin D-resistant population of actin filaments. BDNF protection from NO likely was mediated locally at the level of the growth cone, because growth cones or individual filopodia in contact with BDNF-coated beads were protected from NO-induced collapse. These findings suggest a cellular mechanism by which some axonal connections are stabilized and some are eliminated during development. **(Author's abstract)**

**Keywords:** Actin, Development, Growth cones, Medicine, Nitric oxide, BDNF, Retinal axons

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2000 February,  
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NP

0508

***Stimulus history alters behavioral responses of neuronal growth cones***

***Kater, Stanley B. , Guthrie, Peter B. , Diefenbach, Tho***

Generally, it is assumed that growth cones respond to a specific guidance cue with a single, specific, and stereotyped behavior. However, there is evidence to suggest that previous exposure to a given cue might alter subsequent responses to that cue (Snow and Letourneau, 1992; Shirasaki et al., 1998). We therefore tested the hypothesis that growth cone responses to stimuli are dependent on the history of previous stimulation. Growth cones of chick dorsal root ganglion neurons were exposed to well characterized stimuli: (1) contact with a laminin-coated bead, which causes growth cone turning, or (2) electrical stimulation, which causes growth cone collapse. Although the expected behavioral responses were observed after the initial stimulation, strikingly different responses to a subsequent stimulation were observed. Growth cones that had recovered from electrical stimulation-induced collapse rapidly developed insensitivity to a second identical electrical stimulation. Growth cones that previously turned in response to contact with a laminin-coated bead responded to a second bead with a "stall" or cessation in outgrowth. This stimulus history dependence of growth cone behavior could be generalized across dissimilar stimuli: after contact with a laminin-coated bead, growth cones failed to collapse in response to electrical stimulation. The calcium/calmodulin-dependent protein kinase II (CaMKII) was implicated in this history dependence by pharmacological experiments. Together, these results demonstrate that growth cones can alter their behavioral response rapidly to a given stimulus in a manner dependent on previous history and that knowledge of past events in growth cone navigation may be required to predict future growth cone behavior. **(Author's abstract)**

**Keywords:** Medicine, Growth cone, Laminin, Collapse, Dorsal root ganglion, Guidance, CaMKII

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(Filipiniana Analytics)  
NP

0509

***Structured long-range connections can provide a scaffold for orientation maps***

***Beckerman, Martin , Jones, Judson P. , Goldberg, David H. , Shouval, Harel Z., Cooper, Leo***

In the visual cortex of the cat and ferret, it is established that maturation of orientation selectivity is shaped by experience-dependent plasticity. However, recent experiments indicate that orientation maps are remarkably stable and experience-independent. We present a model to account for these seemingly paradoxical results. In this model, a scaffold consisting of non-isotropic lateral connections is laid down in horizontal circuitry before visual experience. These lateral connections provide an experience-independent framework for the developing orientation maps by inducing a broad orientation tuning bias in the model neurons. Experience-dependent plasticity of the thalamocortical connections sharpens the tuning while the preferred orientation of the neurons remains unchanged.

*This model is verified by computer simulations in which the scaffolds are generated both artificially and inferred from experimental optical imaging data. The plasticity is modeled by the BCM synaptic plasticity rule, and the input environment consists of natural images. We use this model to provide a possible explanation of the recent observation in which two eyes without common visual experience develop similar orientation maps. Finally, we propose an experiment involving the disruption of lateral connections to distinguish this model from models proposed by others. (Author's abstract)*

**Keywords:** *Medicine, Orientation map, Synaptic plasticity, Visual cortex, Model, Lateral connections, Natural images*

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2000 February,  
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NP*

**0510**

***Subjective and objective assessment of olfactory function in post-laryngectomy patients***  
***Romualdez, Joel A. , Panganiban, Windolyn D. , Ramirez, Jr., Rica***

**Objective:** *To determine the olfactory function among post-laryngectomy patients using a questionnaire adapted from that of the Smell and Taste Clinic of Hospital of University Pennsylvania (HUP) and the Santo Tomas Smell Identification Test.*

**Methods:**

*Design: Descriptive study  
Setting: Tertiary Private Hospital Outpatient Department  
Patients: Twenty five subjects who had undergone total laryngectomy and met inclusion and exclusion criteria underwent rigid nasal endoscopy and olfactory function assessment using an adaptation of the questionnaire of the Smell and Taste Clinic of Hospital of University Pennsylvania (HUP) and the Santo Tomas Smell Identification Test (ST-SIT).*

**Results:** *Twenty one male subjects completed olfactory testing. All had subjective sense of smell before laryngectomy. Statistically significant correlation was noted between the subjective post-operative smell function and the objective olfactory function test scores. There was no statistically significant difference noted in the ST SIT scores with regards age, duration from laryngectomy to olfactory testing, number of smoking pack- years, use of olfactory technique/maneuver, loss of appetite and adjunctive chemotherapy and radiotherapy.*

**Conclusion:** *All subjects post-laryngectomy had subjective complaints of varying levels of olfactory difficulties based on a structured questionnaire and were documented to be anosmic by an objective smell identification test. Olfactory problems following laryngectomy can have significant effects on the lives of laryngectomees, and health care providers should be knowledgeable of available management options for this condition. (Author's abstract)*

**Keywords:** *Medicine, Olfaction, Anosmia, Total laryngectomy, Olfactory testing*

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2009,  
(Filipiniana Analytics)  
NP*

***Superior semicircular canal dehiscence syndrome: review of clinical manifestations in adults and children***

***Yang, Nathaniel W. , Chiong, Charlotte M., Ibrahim, Scheherazad***

***Objective:*** This report aims to determine the clinical manifestations and management of patients with superior semicircular canal dehiscence syndrome (SSCDS).

***Methods:***

***Design:*** Case series

***Setting:*** Tertiary hospitals and private clinics

***Participants:*** Out of 30 patients with vestibular vertigo or otologic symptoms, 14 patients were diagnosed with SSCDS based on high resolution computed tomographic scan (HRCT). The demographic features, incidence of specific signs and symptoms and management of these patients were described, including the audiograms, vestibular evoked myogenic potential (VEMP) responses and ancillary tests.

***Results:*** Vertigo was the most common vestibular symptom of SSCDS. Tullio phenomenon was elicited in 50% of patients with confirmed dehiscence on HRCT scan. Low frequency (250 Hz and 500 Hz) air-bone gap was noted in 21.4% of patients. Lowered VEMP responses were also noted in 66.7% of patients with confirmed SSCDS. Severity of symptoms may determine its management.

***Conclusion:*** The diagnosis of SSCDS does not conform to a specific clinical presentation or audiologic result and good clinical correlation is needed in order to raise suspicion of the disease and prompt the clinician to order confirmatory imaging by computed tomographic scan or magnetic resonance imaging. The presence of this syndrome in a proportion of children that is greater than previously reported needs further study as these children may be genetically predisposed to have thinned out superior semicircular canals that eventually become dehisced albeit at an earlier age. ***(Author's abstract)***

***Keywords:*** Medicine, Superior semicircular canal dehiscence, Pure tone audiometry, Vestibular evoked myogenic potential

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2009,  
(Filipiniana Analytics)  
NP*

***Supervisory practices of radiologic technology clinical instructors and the clinical performance of radiologic technology interns of Liceo de Cagayan University***

***Tajor, Kristine Ingrid Mae H. , Sumalpong, Luigi Mikhail N. , Durotan, Angelie T. , Cruz, Fenella A. , Marcos, Ki***

*The clinical instructor has the major role in the professional growth of the interns. It is best to determine these qualities and effectiveness as it affects the clinical performance of the radiologic technology interns. This study aimed to determine the factors in the supervisory practices of the radiologic technology clinical instructors as they are involved in the "hands on" practices of the interns in the clinical setting. To determine these, the study used a modified questionnaire taken from different studies which is composed of two parts Demographic Profile and Supervisory Practices. The interns' evaluation sheet from the Department of Radiologic Technology was used for the evaluation of clinical performance rated by the clinical instructors. The result of the study revealed that most*



of the clinical instructors are young adults with short working experience as radiologic technologists; majority of them are males and BSRT graduates working in private tertiary hospitals a full time radiologic technologists. Moreover, their supervisory practices to the interns are described as "moderately supervised" while the clinical performance of the interns falls under "every good" level. (Author's abstract)

**Keywords:** Medicine

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2013,  
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NP

0513

### ***Surgical management of chronic suppurative otitis media with intracranial complications***

***See, Nixon S. , Dimaguila, Gerardo Aniano C. , Victoria, Franci***

Intracranial abscess is a serious, life-threatening condition with a dire prognosis. Although the advent of the antibiotic era has drastically reduced the incidence of the disease, predisposing factors such as untreated ear infections, poor personal hygiene, significant trauma with violation of the sterile cranial environment as well as existing co-morbidities such as an immunocompromised state make intracranial abscess a horrifying reality. Ear infections, in particular, are notorious for being the origin of roughly 50% of cerebellar abscesses.

Chronic suppurative otitis media (CSOM) is one of the leading causes of brain abscess. Shaw and Russell<sup>2</sup> reviewed 47 cases of cerebellar abscess and showed that 93% were caused by CSOM; the most common mechanism of entry into the brain parenchyma being direct extension. Chronic infection in the middle ear space could erode through the tegmen tympani and into the temporal lobe or through the tegmen mastoidei into the cerebellum. Neurological symptoms may be delayed as the abscess 'grows' in areas around the cerebellum that are regarded as 'silent', until vital areas such as those responsible for coordination and balance are violated. We describe a case of cerebellar abscess secondary to CSOM and discuss the possibility of performing ear surgery with simultaneous drainage of a contiguous abscess through a transmastoid approach in cases of chronic suppurative otitis media with intracranial complications. (Authors' abstract)

**Keywords:** Medicine, Chronic suppurative otitis media, Brain abscess, Cerebellar abscesses, Tegmen mastoidei

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0514

### ***Switching off and on of synaptic sites at Aplysia sensorimotor synapses***

***Klein, Marc , Coulson, Rosalind L. , Royer, Seb***

Using the highly plastic synapses between mechanoreceptor sensory neurons and siphon motor neurons of *Aplysia* as a model, we have investigated whether switching off and on of individual synaptic release sites is a strategy that is used by neurons in forms of short-term synaptic modulation with a time course of minutes to hours. We have modified some of the techniques of classical quantal analysis and examined the kinetics of synaptic depression

under different stimulation protocols to answer this question. Our analysis shows that both synaptic depression caused by homosynaptic activity and synaptic facilitation induced by an endogenous facilitatory transmitter occur by means of the shutting off and turning on, respectively, of synaptic sites, without intermediate changes in the probability of release. Our findings imply that other forms of plasticity at these synapses, such as post-tetanic potentiation, long-term facilitation, and long-term potentiation, are also expressed by all-or-none changes in activity at individual sites. We thus show that in addition to the mechanisms of synaptic integration that are known to operate in single cells and networks, neurons can exercise a further layer of fine control, at the level of individual release sites. (Author's abstract)

**Keywords:** Medicine, Synaptic transmission, Synaptic plasticity, Synaptic depression, Synaptic facilitation, Transmitter release, Quantal analysis, Miniature synaptic potentials

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2000,  
(Filipiniana Analytics)  
NP

0515

**Synaptic reorganization in the substantia gelatinosa after peripheral nerve neuroma formation: aberrant innervation of lamina II neurons by AB afferents**  
*Ishikawa, Kuniko , Kohama, Ikuhide, Kocsis, Jeffery*

Intracellular recording and extracellular field potential (FP) recordings were obtained from spinal cord dorsal horn neurons (laminae I–IV) in a rat transverse slice preparation with attached dorsal roots. To study changes in synaptic inputs after neuroma formation, the sciatic nerve was sectioned and ligated 3 weeks before *in vitro* electrophysiological analysis. Horseradish peroxidase labeling of dorsal root axons indicated that A $\beta$  fibers sprouted into laminae I–II from deeper laminae after sciatic nerve section. FP recordings from dorsal horns of normal spinal cord slices revealed long-latency synaptic responses in lamina II and short-latency responses in lamina III. The latencies of synaptic FPs recorded in lamina II of the dorsal horn after sciatic nerve section were reduced. The majority of monosynaptic EPSPs recorded with intracellular microelectrodes from lamina II neurons in control slices were elicited by high-threshold nerve stimulation, whereas the majority of monosynaptic EPSPs recorded in lamina III were elicited by low-threshold nerve stimulation. After sciatic nerve section, 31 of 57 (54%) EPSPs recorded in lamina II were elicited by low-threshold stimulation. The majority of low-threshold EPSPs in lamina II neurons after axotomy displayed properties similar to low-threshold EPSPs in lamina III of control slices. These results indicate that reoccupation of lamina II synapses by sprouting A $\beta$  fibers normally terminating in lamina III occurs after sciatic nerve neuroma formation. Furthermore, these observations indicate that the lamina II neurons receive inappropriate sensory information from low-threshold mechanoreceptor after sciatic nerve neuroma formation. (Author's abstract)

**Keywords:** Medicine, Axotomy, Neuroma, Synaptic reorganization, Dorsal horn, Substantia gelatinosa, AB afferents, Pain

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0516

**Tactile coactivation-induced changes in spatial discrimination performance**  
**Spengler, Friederike , Stauffenberg, Beate , Godde, Ben, Dinse, Huber**

We studied coactivation-based cortical plasticity at a psychophysical level in humans. For induction of plasticity, we used a protocol of simultaneous pairing of tactile stimulation to follow as closely as possible the idea of Hebbian learning. We reported previously that a few hours of tactile coactivation resulted in selective and reversible reorganization of receptive fields and cortical maps of the hindpaw representation of the somatosensory cortex of adult rats (Godde et al., 1996). In the present study, simultaneous spatial two-point discrimination was tested on the tip of the right index finger in human subjects as a marker of plastic changes. After 2 hr of coactivation we found a significant improvement in discrimination performance that was reversible within 8 hr. Reduction of the duration of the coactivation protocol revealed that 30 min was not sufficient to drive plastic changes. Repeated application of coactivation over 3 consecutive days resulted in a delayed recovery indicating stabilization of the improvement over time. Perceptual changes were highly selective because no transfer of improved performance to fingers that were not stimulated was found. The results demonstrate the potential role of sensory input statistics (i.e., their probability of occurrence and spatiotemporal relationships) in the induction of cortical plasticity without involving cognitive factors such as attention or reinforcement. **(Author's abstract)**

**Keywords:** Medicine, Coactivation, Associative pairing, Somatosensory, Tactile, Perceptual learning, Humans, Cortical reorganization, Plasticity, Hebbian learning, Attention

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0517

**Target-related and intrinsic neuronal death in lurcher mutant mice are both mediated by caspase-3 activation**

**Delhaye-Bouchaud, Nicole , Doughty, Martin , Selimi, Fekrije, Mariani,**

The Lurcher (*Lc*) mutation in the  $\delta 2$  glutamate receptor gene leads to the presence of a constitutive inward current in the cerebellar Purkinje cells of Lurcher heterozygous mice and to the postnatal degeneration of these neurons. In addition, cerebellar granule cells and olivary neurons of *Lc/+* mice die as an indirect effect of the mutation after the loss of their target Purkinje cells. The apoptotic nature of *Lc/+* Purkinje cell death remains controversial. To address this question, we studied the involvement of caspase-3, a key effector of apoptosis, in the neurodegenerative processes occurring in *Lc/+* cerebellum. Several antibodies recognizing different regions of caspase-3 were used in immunoblotting and immunohistochemical experiments. We demonstrate that pro-caspase-3 is specifically upregulated in the dying *Lc/+* Purkinje cells, but not in granule cells and olivary neurons, suggesting that different death-inducing signals trigger variant apoptotic pathways in the CNS. The subcellular localization of pro-caspase-3 was shown to be cytoplasmic and mitochondrial. Active caspase-3 as well as DNA fragmentation was found in numerous granule cells and some Purkinje cells of the *Lc/+* cerebellum. Thus, caspase-3 activation is involved in both the direct and indirect neuronal death induced by the Lurcher mutation, strongly supporting the idea that the *Lc/+* Purkinje cell dies by apoptosis. **(Author's abstract)**

**Keywords:** Medicine, Caspase-3, Neuronal death, Lurcher, Purkinje cells, Apoptosis, TUNEL, Immunohistochemistry

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(Filipiniana Analytics)  
NP

**Technique of multi-planar CT image reconstruction for the evaluation of superior semicircular canal dehiscence syndrome**

**Yang, Nathan**

*Superior semicircular canal dehiscence (SSCD) syndrome is an unusual cause of vertigo that was first identified by Minor in 1998. The patients initially described by Minor presented with vertigo, oscillopsia and/or dysequilibrium related to sound, changes in middle ear pressure and/or changes in intracranial pressure due to an absence of the bony layer that normally covers the superior semicircular canal. Subsequent clinical studies have shown that the condition may lead to a variety of vestibular and/or auditory symptoms that mimic other otologic disorders. These symptoms include autophony, ear blockage or fullness, conductive hearing loss, pulsatile tinnitus, dizziness or vertigo with head movements and general disequilibrium*

*In a patient with the appropriate symptoms, the diagnosis of superior semicircular canal dehiscence syndrome rests on the identification of a dehiscence in the bone overlying the semicircular canal on coronal high-resolution temporal bone computed tomographic scans. (Authors' abstract)*

**Keywords:** *Medicine, Superior semicircular canal dehiscence, Vertigo, Oscillopsia, Dysequilibrium*

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2011,  
(Filipiniana Analytics)  
NP*

**Thalamic-evoked synaptic interactions in barrel cortex revealed by optical imaging**

**Keller, Asaf, Carlson, Greg C., Laaris**

*We used optical imaging of voltage-sensitive dye signals to study the spatiotemporal spread of activity in the mouse barrel cortex, evoked by stimulation of thalamocortical afferents in an in vitro slice preparation. Stimulation of the thalamus, at low current intensity, results in activity largely restricted to a single barrel, and to the border between layers Vb and VI. Low concentrations of the GABAA receptor antagonist bicuculline increase the amplitude of the optical signals, without affecting their spatiotemporal propagation. Higher concentrations of bicuculline result in paroxysmal activity, which propagates via intracolumnar and intercolumnar excitatory pathways. Enhancing the activity of NMDA receptors, by removing  $Mg^{2+}$  from the extracellular solution, dramatically alters the spatiotemporal pattern of excitation: activity spreads to supragranular and infragranular layers and adjacent barrel columns. This enhanced propagation is suppressed by the NMDA receptor antagonist AP5. A similar enhancement of activity propagation can be produced by stimulating the thalamus with a short, high-frequency pulse train. Application of AP5 suppresses the frequency-dependent spread of activity. These findings indicate that the spatiotemporal spread of activity in the barrel cortex is altered by varying the temporal patterns of thalamic inputs, via an NMDA receptor-mediated mechanism, and suggest that a similar process occurs during repetitive whisking activity. (Author's abstract)*

**Keywords:** *Medicine, Somatosensory cortex, Voltage-sensitive dyes, Glutamate, NMDA, GABA, Epilepsy, Temporal coding, Mouse*

***Topical cepae extract-heparin sodium allantoin gel versus placebo on hypertrophic thyroidectomy scars: a randomized, double-blinded, split-scar controlled trial***  
***Dimacali, Bernardo D. , Destriza, Waynn Neilsen , Tapangco, Michael Paolo M. , Olveda. Mild***

**Objective:** *Topical cepae extract-heparin sodium-allantoin gel is one of the many non-invasive scar treatments available to improve the appearance and physical attributes of scars. This paper aims to compare the effectiveness of topical cepae extract-heparin sodium-allantoin gel versus placebo based on appearance and physical attributes of hypertrophic thyroidectomy scars.*

**Methods:**

**Design:** *Randomized, double-blinded, split-scar controlled trial*

**Setting:** *Out-Patient Department of a tertiary government hospital*

**Patient:** *20 patients with hypertrophic thyroidectomy scars had each side of the scar randomly assigned treatment with topical extract cepae-heparin sodium-allantoin gel or placebo (glycerine gel). Each product was applied two times daily for six weeks, and scars were evaluated prior to initiation of treatment and after six weeks by patients and one observer. Pre- and post-treatment photo documentation and scar evaluation using a local language translation of the Patient and Observer Scar Assessment Scale (POSAS) were completed for each side of the scar.*

**Results:** *There was no significant difference in effectiveness of topical cepae extract-heparin sodium-allantoin gel versus placebo for both the patient scale ( $p = 0.91$ ) and observer scale ( $p = 0.87$ ) in appearance and physical attributes of a thyroidectomy scar.*

**Conclusion:** *Topical cepae extract-heparin sodium-allantoin gel was not proven to be superior to the placebo as scar therapy in all parameters assessed by the Filipino translation of POSAS. The small sample size, duration of hypertrophic scar, duration of treatment, and validity and reliability of the Filipino translation of POSAS may have affected our results; and periodic subjective and objective assessments with multi-observer evaluation of scars and pre- and post- treatment photographs may be considered for further studies. (Authors' abstract)*

**Keywords:** *Medicine, Topical cepae extract-heparin sodium allantoin gel, Glycerine, Patient and observer scar assessment scale, Thyroidectomy scar, Scar*

***Traditional and modern practices enhance health knowledge of the Bagobo Tribe***  
**Gascon, Mer**

*Using interviews and community discussions, this paper sought to determine the health practices of the Bagobo in the Malagos watershed, particularly the confluence between the modern and indigenous. This paper discusses why despite the high-level of acceptance of modern health practices introduced by health workers, the Bagobo have not ended traditional ways of making themselves healthy. Instead, they have combined the traditional and modern practices to enrich their health knowledge. The decision to fuse the two is a consequence of what facilities and materials are available to them in the area. The Bagobo have fully embraced modern ways in some aspects of their life-cycle such as maternal and child care, however their indigenous ways particularly circumcision, child-delivery, and the use of medicinal plants still prevail. (Author's abstract)*

**Keywords:** *Medicine, Bagobo, Health practices, Indigenous knowledge, Malagos watershed*

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2011,  
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NP

0522

***Traditional ecological knowledge system of the Matigsalug Tribe in Mitigating the effects of dengue and malaria outbreak***  
**Gascon, Mer**

*This paper presents the traditional ecological knowledge system (TEKS) of the Matigsalug tribe in mitigating the effects of dengue and malaria in the hinterlands of Marilog District, Davao City, Philippines. Dengue fever and malaria are prevalent in the area during the rainy season. The Matigsalug people are otherwise known as "river people" as they have been occupying the banks of the Davao River. Participants in the study were the tribe's herbalists, healers (Babaylan), elders, and tribal leaders (Datu or male chieftain and Bai or female chieftain). This inquiry finds that the Matigsalug tribe people heavily practice TEKS in managing natural disasters especially the dreadful dengue and malaria fever. The tribal community sees the essential role of ecological balance in reducing the risks and mitigating the effects of proliferation of disease-carrying mosquitoes. They commonly use homemade lemongrass preparations in lotion and smoke forms to deter mosquitoes. They command their children to stop catching and playing with spiders and frogs. They view the role of these organisms very important in keeping the spread of mosquitoes at bay. The tribal people conduct community cleaning of river bank and backyard at regular intervals during the rainy season. (Author's abstract)*

**Keywords:** *Medicine, Herbalists, Dengue, Malaria, Lemongrass, Matigsalug, Traditional ecological knowledge*

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*Asian Journal of Health, Volume No. 1 Issue No. 1, 168-180*  
2011,  
(*Filipiniana Analytics*)  
NP

0523

**Transcanal resection of a type 1 glomus tympanicum**  
**Arriola, Anna Carlissa P. , De Guzman, Thanh**

**Objectives:** To present a case of type 1 glomus tympanicum, its clinical presentations, surgical management and outcome.

**Methods:**

<b>Design:</b>	Case	Report	
<b>Setting:</b>	Tertiary	Government	Hospital
<b>Patient:</b>		One	

**Results:** A 44-year-old woman with pulsatile tinnitus, vertigo, headache, ear fullness and decreased hearing on the right had a pulsatile reddish mass behind the tympanic membrane and Brown sign. Weber test lateralized to the right with mild conductive hearing loss on pure tone audiometry. Contrast CT scan demonstrated a 5x6 mm well defined enhancing mass in the meso- and hypotympanum. Internal auditory canal MRI showed an avidly enhancing 5x3x4 mm nodule within the right middle ear adjacent to the cochlear promontory and anterior to the lateral semicircular canal. Impression was glomus tympanicum, type 1. The mass was excised via transcanal approach with post-operative resolution of tinnitus, headache, vertigo and improvement of hearing. Final histopathology was consistent with glomus tumor.

**Conclusion:** Glomus tympanicum tumors are rare, benign middle ear paragangliomas that arise from Jacobson's nerve are slow-growing and locally destructive. CT scan and MRI may detect involvement of other structures. Surgical resection is the primary treatment modality. Type 1 glomus tympanicum tumors are small and limited to the promontory and a less-invasive transcanal approach may be employed. **(Authors' abstract)**

**Keywords:** Medicine, Glomus, Tympanicum, Paraganglioma, Transcanal approach

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 30 Issue No. 1, 39-42  
2015,  
(Filipiniana Analytics)  
NP

0524

**The transcription factor DBP affects circadian sleep consolidation and rhythmic EEG activity**  
**Tafti, Mehdi , Schibler, Ueli , Marcacci, Lysiane , Lopez-Molina, Luis , Franken**

Albumin D-binding protein (DBP) is a PAR leucine zipper transcription factor that is expressed according to a robust circadian rhythm in the suprachiasmatic nuclei, harboring the circadian master clock, and in most peripheral tissues. Mice lacking DBP display a shorter circadian period in locomotor activity and are less active. Thus, although DBP is not essential for circadian rhythm generation, it does modulate important clock outputs. We studied the role of DBP in the circadian and homeostatic aspects of sleep regulation by comparing DBP deficient mice ( $dbp^{-/-}$ ) with their isogenic controls ( $dbp^{+/+}$ ) under light-dark (LD) and constant-dark (DD) baseline conditions, as well as after sleep loss. Whereas total sleep duration was similar in both genotypes, the amplitude of the circadian modulation of sleep time, as well as the consolidation of sleep episodes, was reduced in  $dbp^{-/-}$  under both LD and DD conditions. Quantitative EEG analysis demonstrated a marked reduction in the amplitude of the sleep-wake-dependent changes in slow-wave sleep delta power and an increase in hippocampal theta peak frequency in  $dbp^{-/-}$  mice. The sleep deprivation-induced compensatory rebound of EEG delta power was similar in both genotypes. In contrast, the rebound in paradoxical sleep was significant in  $dbp^{+/+}$  mice only. It is

concluded that the transcriptional regulatory protein DBP modulates circadian and homeostatic aspects of sleep regulation. (Author's abstract)

**Keywords:** Medicine, Sleep homeostasis, Non-REM sleep intensity, Knock-out mice, Clock-genes, EEG and circadian oscillations, Simulation

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JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 2, 617-625  
2000,  
(Filipiniana Analytics)  
NP

0525

**Transorbital removal of foreign body in the sphenoid sinus**  
**Mendoza, Daniel Jose C. , Castañeda, Samantha S. , Chua, Anto**

**Objectives:** To report a case of foreign body lodged within the sphenoid sinus and its extraction.

**Methods:**

**Design:** Case Report

**Setting:** Tertiary Government Hospital

**Patient:** One

**Results:** An 11-year-old girl was hit in the eye by an unknown object from an improvised slingshot. She had loss of vision of the left eye and headache without loss of consciousness. A plain craniofacial Computed Tomography (CT) scan showed a round opaque foreign body abutting the left sphenoid sinus, left posterior ethmoid cells and medial aspect of the left orbital region with adjacent soft tissue densities extending into the apparently ruptured, irregular left globe. The left posterior part of the lamina papyracea was not visualized probably fractured or ruptured. Transorbital enucleation of the left eye and endoscopy-assisted removal of the foreign body (a glass marble) were performed with no intra – operative and post – operative complications.

**Conclusion:** Foreign body of the sphenoid sinus is a rare condition. Adequate imaging is important for localization and planning the optimal surgical approach. Endoscopic guidance may aid in extraction. (Authors' abstract)

**Keywords:** Medicine, Sphenoid sinus foreign body, Computed tomography (CT), Endoscopic-guided, Transorbital approach

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 29 Issue No. 2, 19-21  
2014,  
(Filipiniana Analytics)  
NP

0526



**Trauma patients' satisfaction on radiographers management based on standard operational procedures in x-ray facilities Cagayan De Oro City.**

**Prantilla, Ian Kris I. , Pabualan, Claire Nathalie C. , Mama, Anna Jobaira M. , Mardan, Faizal T. , Gozo-dy, Es**

Progress of human social awareness depends on man's ability to communicate with one another. In a hospital setting, whose primary concern is life, wherein some factors may cause a patient's anxiety and fear. Health personnel therefore, should take time to give comfort to patient, find greater personal satisfaction in work, and quality of care. The study was conducted in radiologic facilities of Cagayan de Oro City involving radiologic technologists and trauma patients brought to the clinics. The study used sampling procedure in a form of the questionnaire and interview to gather imperative data both quantitative and qualitative. Pertinent data gathered from the respondents were tabulated to simplify and organize the results. Surveys and interviews conducted and researchers' profound data analysis resulted to the following findings: The extent of the trauma patient satisfaction on radiographer's management based on standard operational procedures in x-ray facilities. Patients were found to be satisfied with the clinical operating procedure in terms of positioning, protection, communication, instruction, waiting time and patient care, except for application of gonadal and thyroid shield, self-introduction of radiographers, patient information on the procedure to be done, care to be administered and time to answer patient questions should be given attention for improvement of services. (Author's abstract)

**Keywords:** Medicine

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Advancing Radiologic Technology Research, Volume No. 1 Issue No. 1,  
2013,  
(Filipiniana Analytics)  
NP

0527

**True congenital macroglossia surgically managed using a modified kole technique**

**Smith, Jenifer C. , Vicente,**

**Objective:** To describe a 2-year-old boy with true congenital macroglossia surgically managed using a modified Kole technique.

**Methods:**

**Design:** Surgical Innovation

**Setting:** Tertiary Government Hospital

**Patient:** One

**Results:** A 2-year-old boy presented with congenital macroglossia, associated with difficulty feeding and phonating. On physical examination, the massive tongue had both increased length and width. At rest, it protruded between the upper and lower teeth with drying and fissuring of the tip. Dribbling of saliva and mandible prognathism were also noted. The child was surgically treated with a modified Kole technique, wherein the apex of the anterior wedge resection was extended to the posterior third midline. Final histopathology was consistent with cavernous hemangioma.

**Conclusion:** The modified Kole technique proved viable as the postoperative results were considered satisfactory. Tongue volume was uniformly reduced in length and width enabling mouth and jaw closure while tongue sensation and mobility were preserved. Feeding, speech intelligibility and cosmesis were markedly improved. Future application of this modification may prove its usefulness. (Authors' abstract)

**Keywords:** *Medicine, Macroglossia, Glossectomy, Congenital macroglossia*

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*Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 31 Issue No. 2, 51-53*  
2016,  
(*Filipiniana Analytics*)  
NP

0528

### ***Tube extrusion and cheese wiring five years post Dacryocystorhinostomy***

*Anuar, Khairullah Bin , Gendeh, Balwant*

**Objective:** *Dacryocystorhinostomy (DCR) with silicone tube stenting is a common procedure for congenital nasolacrimal duct obstruction (NLDO). The incidence of congenital NLDO is about 6% in the newborn. The duration the tube is left in place varies depending on surgeon preference. Cheese wiring is one of the tube-related complications when the tube is left behind for a long duration. The term cheese wiring refers to the silicone stent or tubing cutting through soft tissue close to the punctum or canaliculi like wire cuts through cheese. We present a case of tube extrusion with cheese wiring five years post DCR.*

**Methods:**

<b>Design:</b>	<i>Case</i>		<i>report</i>
<b>Setting:</b>	<i>Tertiary</i>	<i>Referral</i>	<i>Center</i>
<b>Patient:</b>			<i>One</i>

**Results:** *A 16-year-old Indian male with congenital bilateral NLDO underwent right and left DCR at ages 9 and 11, respectively. The patient presented with smelly nasal discharge five years later to the ENT clinic. On initial examination the right tube was in place but the left tube was not visualized. Nasal endoscopy however revealed that both tubes were still there and were subsequently removed.*

**Conclusion:** *DCR with silicone intubation is a common practice. Early follow up is essential to prevent complications. If tube extrusion is suspected, early endoscopic examination is essential to confirm it. (Authors' abstract)*

**Keywords:** *Medicine, Nasolacrimal duct obstruction, Dacryocystorhinostomy, Tube extrusion, Cheese wiring*

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*Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 26 Issue No. 2, 25-27*  
2011,  
(*Filipiniana Analytics*)  
NP

0529

### ***Tumoral calcinosis in secondary hyperparathyroidism***

*Cabungcal, Arsenio Claro A. , Lo, Tom Edward N. , Dela Cruz, Anna Pamela C. , Bautista, Reinzi Luz S. , Lopa, Ramon Anto*

**Objective:** *To report a case of tumoral calcinosis from secondary hyperparathyroidism and to describe its surgical management.*

**Methods:**

**Design:** Case Report  
**Setting:** Tertiary Public University Hospital  
**Patient:** One

**Results:** A 34-year-old woman presented with progressively-enlarging bilateral upper extremity masses. Diagnostic tests revealed hyperfunctioning parathyroid glands. The patient underwent subtotal parathyroidectomy, right thyroid lobectomy with isthmusectomy, and transcervical thymectomy. Follow-up revealed marked decrease in parathyroid hormone, and progressive resolution of the tumoral calcinosis.

**Conclusion:** Subtotal parathyroidectomy and transcervical thymectomy have a role in the management of tumoral calcinosis, and in this case led to excellent post-operative results. The rare presentation of secondary hyperparathyroidism and intervention in this patient may have potential lessons for future management of similar cases. (Authors' abstract)

**Keywords:** Medicine, Tumoral calcinosis, Parathyroid, Parathyroidectomy, Thymectomy

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 31 Issue No. 1,  
2016,  
(Filipiniana Analytics)  
NP

0530

**Typical laryngeal carcinoid recurrence and its management by conservative surgery**  
Ahmad, Rauf, Hussain, Syed

**Objectives:** Recurrence of a typical laryngeal carcinoid is extremely rare after surgery with tumor-free margins on histopathology. We present a rare case of typical laryngeal carcinoid that recurred after eight years and was managed by conservative surgery.

**Methods:**

**Design:** Case Report  
**Setting:** Tertiary Government Hospital  
**Patient:** One

**Results:** A known case of typical laryngeal carcinoid treated eight years back reported again with the same symptoms he previously had. On evaluation local tumor recurrence was identified with a negative metastatic workup. The patient was subjected to microlaryngeal excision which was adequate histopathologically. He has had no evidence of disease on follow up of two years.

**Conclusion:** A typical laryngeal carcinoid tumor may present differently and recur locally but conservative surgery is still an option if local nodal and distant metastatic spread is ruled out. (Authors' abstract)

**Keywords:** Medicine, Neuroendocrine tumor, Typical laryngeal carcinoid, Microlaryngeal excision, Hemoptysis

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Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 25 Issue No. 2, 36-38  
2010,

***Unilateral pedunculated polyp of the palatine tonsil***  
***Mendoza, Daniel Jose C. , Castañeda, Samantha S. , Chua, Anto***

***Objectives: To report a benign tonsillar lesion presenting as a pedunculated polyp and discuss its diagnosis and management.***

***Methods:***

***Design: Case Report***

***Setting: Tertiary Government Hospital***

***Patient: One***

***Results: A 14-year-old lad presented with a seven-year history of an elongated right tonsillar mass without associated bleeding, pain, dysphagia or obstructive sleep apnea. Physical examination revealed a pedunculated mass about 2 x 1 x 0.5cm in size located in the superior pole. After unilateral tonsillectomy, histopathological examination revealed lymphangectatic lipomatous fibrotic polyp.***

***Conclusion: Lymphangiomatous polyp of the palatine tonsils is an unusual benign lesion of the head and neck. These are commonly present as unilateral, polypoidal mass that cannot be clinically differentiated from other benign tonsillar lesions. Tonsillectomy is the recommended surgical approach for both diagnostic and therapeutic purposes. Histopathological study must be done to confirm diagnosis. (Authors' abstract)***

***Keywords: Medicine, Palatine tonsil , Pedunculated polyp, Hamartoma, Lymphangioma, Tonsillectomy***

***The urokinase plasminogen activator receptor (UPAR) is preferentially induced by nerve growth factor in PC12 pheochromocytoma cells and Is required for NGF-driven differentiation***

***Rabbani, Shafaat A. , Reddy, Srinivasa , Vician, Linda , Silver, Abigail , Farias-Eisner, Robin, Herschman, Harve***

***Nerve growth factor (NGF)-driven differentiation of PC12 pheochromocytoma cells is a well studied model used both to identify molecular, biochemical, and physiological correlates of neurotrophin-driven neuronal differentiation and to determine the causal nature of specific events in this differentiation process. Although epidermal growth factor (EGF) elicits many of the same early biochemical and molecular changes in PC12 cells observed in response to NGF, EGF does not induce molecular or morphological differentiation of PC12 cells.***

*The identification of genes whose expression is differentially regulated by NGF versus EGF in PC12 cells has, therefore, been considered a source of potential insight into the molecular specificity of neurotrophin-driven neuronal differentiation. A “second generation” representational difference analysis procedure now identifies the urokinase plasminogen activator receptor (UPAR) as a gene that is much more extensively induced by NGF than by EGF in PC12 cells. Both an antisense oligonucleotide for the UPAR mRNA and an antibody directed against UPAR protein block NGF-induced morphological and biochemical differentiation of PC12 cells; NGF-induced UPAR expression is required for subsequent NGF-driven differentiation. (Author's abstract)*

*Keywords: Medicine, Urokinase plasminogen activator receptor, Nerve growth factor, Neurotrophin, PC12 pheochromocytoma cells, Neuronal differentiation, Primary response genes, Immediate early genes*

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*JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 1, 230-239  
2000 January,  
(Filipiniana Analytics)  
NP*

0533

***Value of the 6-hour postoperative ionized calcium slope in predicting post- thyroidectomy occurrence of hypocalcemia***

*Cabance, Ryan E. , Cruz, Emmanuel Tad*

*Objective: To determine the value of the 6-hour postoperative ionized Calcium (iCa) slope versus 6-hour postoperative Calcium alone in predicting the occurrence of hypocalcemia in patients who underwent thyroid surgery in a tertiary hospital in Metro Manila.*

*Methods:*

*Design: Retrospective cross-sectional study*

*Setting: Tertiary Private Hospital*

*Subjects: Pre-operative and 6-hour postoperative ionized calcium determinations were analyzed in 59 patients of the ENT-HNS Department in a tertiary hospital in Metro Manila who underwent thyroid surgery from January 2009 to December 2013. Results: The 6-hour postoperative iCa slope (difference between the pre-operative and 6-hour postoperative iCa levels) of  $\geq 0.18$  mmol/L correctly predicted 57.1% of patients who eventually developed hypocalcemia, with a specificity of 81.6% and a positive predictive value of 63.2%. In contrast, the 6-hour postoperative iCa measurement identified only 23.8% (5 out of 21) patients who developed hypocalcemia.*

*Conclusion: The 6-hour postoperative iCa slope increased the probability of identifying patients who developed hypocalcemia from 23.8% to 57.1%. However, as a single determination, this may not suffice to take the place of serial iCa measurements after thyroid surgery. (Authors' abstract)*

*Keywords: Medicine, Ionized calcium (iCa), Hypocalcemia, Thyroidectomy*

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*Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 30 Issue No. 2, 13-18  
2015,  
(Filipiniana Analytics)  
NP*

***Videostroboscopic evaluation of neoglottis in alaryngeal patients after tracheoesophageal voice reconstruction without prosthesis***

*Madrid, Jeanne O. , Ureta, Ce*

**Objective:** *To investigate by means of videostroboscopy the characteristics of the neoglottis after total laryngectomy with primary or secondary voice reconstruction using a non-prosthetic tracheoesophageal fistula technique.*

**Methods:**

<b>Design:</b>		Cross-Sectional		Study
<b>Setting:</b>	Tertiary		Public	Hospital
<b>Subjects:</b>	Twenty		alaryngeal	patients

**Results:** *Videostroboscopy enabled evaluation of the neoglottis in all but two patients with a pectoralis major myocutaneous flap reconstruction of the pharyngoesophageal segment. Pooling of saliva was present in the cranial neoglottic opening in all subjects, but obscured visualization in these two. A circular neoglottic shape was most commonly seen. Vibration of the neoglottis was noted in 90% of all alaryngeal patients and was associated with a regular mucosal wave. Pharyngoesophageal vibration was noted in two thirds of patients. It was associated with a strong mucosal wave, regular vibration and a longer open phase.*

**Conclusion:** *Videostroboscopy confirmed that neoglottic vibration accompanies sound production while pharyngoesophageal vibration may reinforce and enhance voice production in alaryngeal patients with non-prosthetic TE voice reconstruction. (Author's abstract)*

**Keywords:** *Medicine, Larynx, Total laryngectomy, Voice reconstruction, Tracheoesophageal (te) fistula speech, Alaryngeal voice, Alaryngeal speech, Videostrobe*

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*Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 24 Issue No. 2, 14-18  
2009,  
(Filipiniana Analytics)  
NP*

***Visual biofeedback: adjunct mirror intervention during stage two labor among primiparous women***  
*Palompon,*

**This study determined the effectiveness of visual biofeedback in hastening stage II of labor between primiparous women administered with adjunct intervention and those who were not. A non-equivalent post-test design with twenty primiparous women distributed to both control and experimental groups chosen through purposive sampling. A 3 x 2 foot mirror to provide visual biofeedback (treatment), a stopwatch to measure the length of time elapsed from full cervical dilatation and effacement to the delivery of baby, and a tally sheet for recording of data were used in data gathering. Findings show that the control group (not subjected to mirror) obtained the mean of 18.92 (SD=7.17) while the experimental group (subjected to mirror) obtained a mean of 6.77 with a mean difference of 12.15 (SD=5.24). The computed t- test value is 4.37, which was greater than the table value of 2.23 tested at 0.05 level of significance. Results showed a significant difference in the duration of second stage of labor, thus, the use of mirror as a feedback mechanism during the second stage of labor reduces its duration. (Author's abstract)**

*Keywords: Medicine, Visual biofeedback, Adjunct mirror intervention, Primiparous women*

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*Asian Journal of Health, Volume No. 1 Issue No. 1, 214-226  
2011,  
(Filipiniana Analytics)  
NP*

0536

***Visualization of cranial motor neurons in live transgenic zebrafish expressing green fluorescent protein under the control of the islet-1 promoter/enhancer***

*Okamoto, Hitoshi , Hotta, Yoshiki , Higashijima, Shi*

*We generated germ line-transmitting transgenic zebrafish that express green fluorescent protein (GFP) in the cranial motor neurons. This was accomplished by fusing GFP sequences to Islet-1 promoter/enhancer sequences that were sufficient for neural-specific expression. The expression of GFP by the motor neurons in the transgenic fish enabled visualization of the cell bodies, main axons, and the peripheral branches within the muscles. GFP-labeled motor neurons could be followed at high resolution for at least up to day four, when most larval neural circuits become functional, and larvae begin to swim and capture prey. Using this line, we analyzed axonal outgrowth by the cranial motor neurons. Furthermore, by selective application of DiI to specific GFP-positive nerve branches, we showed that the two clusters of trigeminal motor neurons in rhombomeres 2 and 3 innervate different peripheral targets. This finding suggests that the trigeminal motor neurons in the two clusters adopt distinct fates. In future experiments, this transgenic line of zebrafish will allow for a genetic analysis of cranial motor neuron development. (Author's abstract)*

*Keywords: Medicine, Zebrafish, Neuron-specific promoter, Transgenic, Islet-1, Motor neuron, GFP, Live visualization*

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*JNeurosci The Journal of Neuroscience, Volume No. 20 Issue No. 1, 206-218  
2000 January,  
(Filipiniana Analytics)  
NP*

0537

***Vitamin D receptor gene BsmI polymorphism positively correlates with prostate cancer***

*Baxa-Daguplo, Bella Marilou, Calingacion, Nico , Villar, Van Anthony , Villanueva, Rebecca , Garinganao, Dinah , Santos, Remedios , Garcia, Rodrigo*

*The biologically active 1,25-dihydroxycholecalciferol has been shown to regulate the growth and differentiation of the normal prostate gland. This hormone exerts antiproliferative and oncostatic effects on prostatic cells through the vitamin D receptor, a member of the steroid/retinoid receptor superfamily of nuclear receptors that possesses tumor-suppressive functions. In a case control study, the authors evaluated the allelic frequencies and examined whether the BsmI vitamin D receptor (VDR) gene polymorphism could influence the development of benign prostate hyperplasia (BPH) and prostate cancer among Filipino patients through Restriction Fragment Length Polymorphism (RFLP). The predominant genotypes showed the absence of the BsmI restriction site in both the BPH group (BB, 28%; Bb, 44%) and the control group ( BB, 44.4%; Bb, 50%). In contrast, majority of the prostate cancer cases had the bb genotype (70%) indicating the presence of the BsmI*

restriction site, and only 28% with Bb genotype. Furthermore, homozygosity (bb) for the presence of the BsmI restriction site positively correlated with the development of prostate cancer ( $p=0.0014$ , Odds Ratio=38.9) but not with benign prostate hyperplasia ( $p=0.06$ ). These results indicate that the molecular variants of the VDR gene play a significant role in the development of prostate cancer among Filipinos and can be employed to identify high-risk individuals. (Author's abstract)

**Keywords:** *Medicine, Benign prostatic hyperplasia, Prostate cancer, Polymorphism*

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*Asian Journal of Health, Volume No. 1 Issue No. 1, 254-270*  
2011,  
(Filipiniana Analytics)  
NP

0538

### ***Vocal acoustic measures of asymptomatic Filipino young adults at a private tertiary hospital in Quezon City: a pilot study***

*Casile, Ray U. , Hawson, Frederick Y. , Delovino, Kirt*

**Objectives:** *To describe the vocal acoustic measures of non-smoking Filipino young adults without voice complaints at a private tertiary hospital in Quezon City; to determine if our baseline values are distributed normally and comparable to data in similar studies done abroad; and to recommend normative voice parameters which may be used as baseline data in our institution and for comparison in future studies.*

**Methods:**

**Design:** *Cross-sectional study*

**Setting:** *Private tertiary hospital*

**Participants:** *A total of 70 subjects were recruited at random*

**Results:** *Values extracted for f0, Jitter %, Jitter dB, Shimmer %, Shimmer dB and NHR showed normal distribution of results. The average vocal acoustic values found in the present study for male voices producing the vowel /a/ were  $f_0 = 130.6 \pm 13.65\text{Hz}$ , jitter =  $0.046\% \pm 0.184$ , jitter dB:  $37.62\text{dB} \pm 16.664$ , shimmer % =  $0.23\%$ , shimmer dB =  $0.23 \pm 0.67$  and NHR =  $0.13 \pm 0.010$ . The average values found for female voices, producing the vowel /a/ were  $f_0 = 218.38 \pm 26.192\text{Hz}$ , jitter =  $0.87\% \pm 0.61$ , jitter dB:  $34.82 \pm 22.5$ , shimmer % =  $2.72 \pm 1.07$  shimmer dB =  $0.23\text{db} \pm 0.67$  and NHR =  $0.12\text{dB} \pm 0.016$ . Values retrieved from this study show similar trends with other papers abroad.*

**Conclusion:** *Voice acoustic systems are composed of different recording criteria, recording instrumentations and algorithms which primarily cause the differences in the results obtained in various studies, thus, precluding a single normalization. Following international recommendations for individual normalization per institution, we have obtained our own values. Our data was comparable to the results of other international studies. However, further investigation is recommended in areas where possibilities of interdialectic variation may produce an effect on the outcome of the study. (Authors' abstract)*

**Keywords:** *Medicine, Vocal acoustic measures, Computerized speech lab, Normative voice parameters*

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*Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 27 Issue No. 2, 7-11*  
2012,  
(Filipiniana Analytics)



***A vocal cord polyp in a pediatric patient***  
*Nalangan, Ma. Joan*

***Objective:*** *To present a case of vocal cord polyp in a pediatric patient and discuss its differential diagnosis, assessment and management.*

***Methods:***

***Design:*** *Case Report*

***Setting:*** *Tertiary Public Hospital*

***Patient:*** *One*

***Results:*** *A seven-year-old girl presented with hoarseness and a benign, unilateral mass seen at the junction of the anterior and middle third of the vocal cord. The hoarseness resolved after excision and histopathology confirmed an inflammatory vocal cord pseudo polyp.*

***Conclusion:*** *Vocal cord polyps occur infrequently in children and adolescents. These cases are seldomly seen and reported and may arise from chronic abuse of the larynx, vocal cord trauma or phonotrauma. Hoarseness is the most common presenting symptom. Differential diagnoses include recurrent respiratory papillomatosis, laryngeal cyst and laryngeal nodule. The management of vocal cord polyps involves surgical removal followed by speech therapy. (Authors' abstract)*

***Keywords:*** *Medicine, Hoarseness, Phonotrauma, Vocal cord polyp, Recurrent respiratory papillomatosis, Vocal cord nodule, Vocal cord cyst, Flexible laryngoscopy, Speech therapy*

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*Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 29 Issue No. 2, 25-27*  
 2014,  
 (Filipiniana Analytics)  
 NP

***Vocal fold paralysis with intraoperative recurrent laryngeal nerve identification versus non-identification of recurrent laryngeal nerve in total thyroidectomy: a retrospective cohort study***  
*Formanez, Andrie*

***Objective:*** *To determine the risk of vocal fold paralysis in patients who underwent total thyroidectomy with and without intraoperative recurrent laryngeal nerve identification.*

***Methods:***

***Design:*** *Retrospective Cohort Study*

**Setting:** Tertiary Military Hospital

**Participants:** Two hundred thirty seven (237) adult patients who underwent total thyroidectomy for benign lesions based on post-operative histopathology operated on by senior third or fourth year residents. Excluded were those who underwent lobectomy with isthmusectomy or reoperation/completion thyroidectomy, had intrathoracic goiters, confirmed malignancies based on post-operative histopathology, or cases wherein the RLN had to be sacrificed due to gross involvement of the nerve caused by malignancy.

**Results:** Group A, wherein intraoperative identification of RLN was done, had a temporary and permanent RLN injury incidence of 2.75% and 0.92% respectively. Group B, wherein intraoperative identification of RLN was not done, had a temporary and permanent RLN injury incidence of 17.19% and 12.5%, respectively. Through binary linear regression, the probability of having temporary paralysis increases almost two-fold if the nerve is not identified, and the probability of having permanent paralysis increases by almost nine-fold if the nerve is not identified.

**Conclusion:** We recommend routine intraoperative RLN identification, which has a lower risk for temporary and permanent vocal fold paralysis when compared to non-identification of the RLN. (Authors' abstract)

**Keywords:** Medicine, Cranial nerve injuries/prevention and control, Recurrent laryngeal nerve injuries, Thyroid neoplasms surgery, Thyroidectomy/adverse effects, Vocal cord paralysis/prevention control

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*Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 31 Issue No. 1, 22  
2016,  
(Filipiniana Analytics)  
NP*

0541

### ***The volunteer phenomenon of nurses in the Philippines*** Roco, Irene , Pring, Ceci

**Graduate nurses are now facing massive unemployment and underemployment. Statistics of unemployed Filipino nurses hit 150,000 in 2008. Newly licensed nurses would volunteer to work in the hospitals to get the needed experience and training. The Philippine Nurses Association (PNA) claims that volunteer nurses are being exploited by requiring volunteers to pay a fee at the same time availing of the volunteers' professional services. This study aims to explore the nature of volunteer programs and to measure the volunteer nurses' level of self-concept. Utilizing both quantitative and qualitative methods, the respondents were chosen using purposive sampling technique. Focused group discussions (FGD) with volunteer nurses and interview with hospital administrators were both utilized. Questionnaire on Professional Self Concept Scale was used. Data were analyzed using SPSS and Pearson R. The result of the study showed that newly graduate nurses enter into volunteerism program offered by different hospitals to gain clinical experience for future employment. This study concludes that graduate nurses are most likely to volunteer because of lack of opportunity to work. (Author's abstract)**

**Keywords:** Medicine, Volunteer nursing program, Nurse's self-concept, Newly graduate nurses

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*Asian Journal of Health, Volume No. 2 Issue No. 1, 95-110  
2012,  
(Filipiniana Analytics)  
NP*

***Written revalida examination as predictor in passing the radiologic technology licensure examination among the radiologic technology graduates of Liceo de Cagayan University***  
*Velasco, Oliver Y. , Semine, Nino Jan G. , Quilantang, Romil M. , Gabule, Jessa May S. , Almajar, Ja*

*The success of every student does not depend on how much grades he has, but on how he learns and applies his knowledge. Determining the academic performance of a student in the written revalida, Radiologic Technology Licensure Examination and its relationship is the primary intention of this study. Knowing the weakness and strengths of a student in a certain examination would help the student to motivate more on his/her studies. This study would also help to lessen the number of students who failed in the Radiologic Technology Licensure Examination and its contributing factor that made them to obtain a failure grade by enhancing the academic program of the school. The Radiologic Technology clinical internship program aimed to provide clinical skills and excellent core values towards patient care among intern students. Its objective is to develop the students with a broad skill in applying into clinical practice the learned theories in the classroom generally. Specifically at the point of the program the students are expected to perform different diagnostic procedures in diagnostic computed tomography, ultrasound, radiotherapy and nuclear medicine and to employ protective measures and devices for radiation workers and the general public. . The Revalida is a comprehensive examination, in oral (25%), practical application (25%) and written (50%) based on all major subjects. This will be given on the first week of October (Pre-revalida) and first week of March of the clinical internship program. Failure of the revalida will merit an extended rotation of duty. The study showed that only one Cluster is a predictor in passing the Radiologic Technology Licensure Examination compared to the Written Revalida Examination. It also showed that four clusters (1, 3, 4, and 5) are not significant in passing the Radiologic Technology Licensure Examination. All graduates have failed their Written Revalida Examination. All graduates have passed their Radiologic Technology Licensure Examination. Among all the clusters composed the examination in both Written Revalida Examination and Licensure Examination does not predict in passing the Radiologic Technology Licensure Examination, except the Image Production and Evaluation. (Author's abstract)*

**Keywords:** *Medicine*

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## **PHYSICS**

***Hysteresis and related magnetic studies on Zn & Sb substituted Cu ferrites in relation to verwey's hopping transition mechanism***  
*Brahmajirao, V. , Bangarraju, S. , Raju, M.K. , Dhanara*

*This paper is concerned with the experimental investigation about of the electronic structure of a number of Nano Crystalline Insulating Transition Metal (NCITM) compounds, in the light of Hubbard's model & Verwey's Hopping Transition Mechanism(VHTM), as detailed by Hidetoshi Fukuyama[6] in his review in the light of Hysteresis studies . Two series ( $Cu_x Zn_{(1-x)} Fe_2 O_4$ ) and ( $Cu_{(1-x)} Sb_2 Fe_2 O_4$ ) for ( $x= 0.0$  to  $1.0$ ) in steps of  $0.2$ , for 'x' are Synthesized, by the conventional ceramic method. The single-phase cubic spinel structures of the samples were confirmed by x-ray diffraction patterns. Our earlier reported Morphological studies using SEM , Structural studies using XRD , Electrical conductivity studies , using Hewlett Packard 4192A impedance analyzer, FTIR studies, using BRUKER (ALPHA) FT-IR system with OPUS 6.5 (version) software ,support the findings of the*

*present Hysteresis and related magnetic studies done in our Material science research laboratories . Results are interpreted in the light of VHTM and related models. Very recent Concurrent findings from literature are cited. (Author's abstract)*

**Keywords:** *Physics, Verweys Hopping Transition Mechanism, Doped Cu-Zn-Sb Ferrites, Hysteresis, Hubbard's model, Doped Nanoferrites, Electrical studies, Magnetic FTIR ,studies, Morphology structuralstudies, Ceramic & solid-solution synthesis of Doped Ferrites*

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*NP*

0544

***Studies on curie temperature in relation to the magnetic and electrical properties Zn & Sb substituted Cu ferrites***

***Bangarraju, S. , Brahmajirao, V. , Raju, M.K. , Dhanara***

*This paper reports about our Synthesis using solid solution Ceramic method & Curie temperature and related Magnetic and other supporting experimental studies on Two series of doped Spinel ferrites (a)  $Cu_{(1-x)}Zn_xFe_2O_4$  (b)  $Cu_{(1-x)}Sb_xFe_2O_4$  Where, x varies from (  $x = 0.0 - 1.0$  ) in steps of 0.2. Our results are presented as plots between (1) dopant concentration and Curie temperature and (2) frequency versus initial permeability. Coercivity measurements and correlation with microstructure and morphology analysis, point out concurrent conclusions with many findings of several authors cited from literature. (Author's abstract)*

**Keywords:** *Physics, Doped Spinel Ferrites, Curie temperature, Coercivity, VSM magnetic studies, Pendulum Magnetometer Technique, Permeability, Verwey's Hopping Transition, Neel's temperature, Super Para magnetism, Exchange interactions*

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*2012 May,*  
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*NP*

0545

***Verwey's hopping transition mechanism in relation to dielectric studies of Zn & Sb substituted Cu ferrites***

***Bangarraju, S. , Brahmajirao, V. , Raju, M.K. , Dhanara***

*Significant information about the substituted ferrites, in relation to their several applications, is revealed by their Dielectric studies. We present the studies on Zn & Sb substituted Cu ferrites, carried out at Material Science Research Laboratories, Department of Physics, Andhra University, Visakhapatnam-530003, A.P., INDIA. We studied the variation of dielectric constant with substituent concentration, and its frequency dependence .This paper reports the results of those studies and their comparison with very recent similar ones of literature in relation to VHTM. Our findings are in tune with several interpretations for similar works, by a host of other authors cited. (Author's abstract)*

**Keywords:** *Physics, Dielectric studies, Substituted spinel ferrites, Frequency dependence of electrical property, Microwave sintered method, Citrate precursor method, Ni-Cu-Zn ferrite, Dielectric loss, Verwey's Hopping Transition Mechanism, FTIR studies, Charge ordering, Anderson's correlated electron theory, Saturation magnetization, Sintering aids*

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NP

## **SOCIAL SCIENCES**

0546

### ***HIV/AIDS knowledge, attitudes and related behaviors among gay men in Shenzhen, China*** *Cai, Weibin , Zhang, Qing , Wang, Hongjing , Lin, Aihong , Tang, Hongxiu, Yin,*

*Gay men were supposed to be at high risk of HIV infections. The aim of this study is to determine the knowledge, attitudes and behaviors related to HIV/AIDS among gay men. A crosssectional survey was conducted and questionnaires were administered to 142 gay men in Shenzhen, China. Blood samples were detected. 114 respondents (80.28%) were valid return. The results showed: (a) Knowledge and attitudes: 77 respondents (67.5%) thought themselves unlikely to be infected with HIV; 48 men (37.2%) had no proper understanding of HIV infection routes; 32 men (28.1%) had no idea of the "window period" process; 95 men (88.0%) thought it is necessary to use a condom when having sex with men. (b) Behaviors: 5 men (4.4%) respondents had a history of drug abuse; 52 men (45.61%) used a condom every time when having sex with men; only 21 men (18.7%) used a condom at first sex experience; 78 men (68.3%) reported anal intercourse; 32 men (28.1%) reported commercial sex; 32 men (28.1%) had multiple sex partners. (c) Blood samples detection: 2 HIV-positive cases (1.75%) and 14 syphilis cases (12.3%) were found. The study concludes that gay men were less aware of HIV/AIDS knowledge and had high-risk sexual behaviors. They were risk of suffering from sexually transmitted diseases. (Author's abstract)*

**Keywords:** *Social sciences, Gay, HIV, AIDS, Knowledge, Attitudes, Behavior, Sex*

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0547

### ***Prevalence of ascariasis and the factors potentially influencing its transmission among children in Iligan City, Philippines*** *Metillo, Ephrime B., Legaspino, Req*

*The study was conducted in four locations of Iligan City in - coastal, poblacion (city proper), hillside and mountain villages. Anthropometric measurements such as body weight and height were done. Presence of helminth eggs was done following standard parasitological examination. Survey questionnaires were completed to determine factors contributing to the occurrence of infection. A total of 1,170 individual volunteers were*

*gathered. Mountain villages revealed 69% infection rate followed by coastal villages with 28.3%, hillside villages with 26.03% and poblacion village with 16.7%. Multivariate analysis reveals that the pattern of Ascaris lumbricoides infection strongly influenced by several contributory factors. People sleeping in one room, absence toilet, source of water, presence of worms, playing in the soil, deworming drugs, gender, and type of toilet, presence of flies, number of people in household, herbal medicine, house pets, health condition, distance of house from the sea and eating of raw fish significantly contributed to the prevalence of A. lumbricoides infection. This study shows that the four sampling sites in Iligan city has provided favorable conditions for intestinal ascariasis. Transmission of intestinal A. lumbricoides is linked to generally poor living conditions, poor public health services, poor sanitation and individual health behavior. (Author's abstract)*

*Keywords: Social sciences, Ascariasis, Flies, Roundworms, Prevalence, Parasite, Transmission*

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NP*

0548

### *Problems encountered by prostituted women in Cagayan De Oro City*

*Villanueva, Ingrid E. , Paguilion, Leslei V. , Ople, Henzel Joy S. , Luardo, Kim T. , Herbas, Maureen May T.,  
Mercado, Ma. Dolore*

*The study aimed to determine the problems encountered by the prostituted women in Cagayan de Oro City, with emphasis on economic and sociological aspects. It focused on the three major points, namely: (1) What is the profile of the respondents in terms of age, educational attainment, type of services, length of experience, reasons for being a prostitute, place of origin, and religious affiliation? (2) What are the problems encountered by the respondents in terms of sexual, psychological, financial, social, health, and spiritual aspects? (3) Is there a significant difference in the problems encountered by the respondents when they are grouped according to age, educational attainment, type of services, length of experience, reasons for being a prostitute, place of origin, and religious affiliation? In answering these problems, the researchers used the descriptive research design to determine the significant relationship between the independent and dependent variables of the study. The analyses yielded the following results: Most of the respondents belonged to the 21-23 age bracket. Of the 30 respondents most of them claimed that they were high school level. In terms of type of services, most of them were serving as exotic dancer. As regards length of experience, most of them responded 0-5 months. Ten of the respondents engaged in sex trading due to "poverty" and "support for the family," as reported by the respondents. Some of them were from the Province of Misamis Oriental, and majority of the prostituted women claimed to be Roman Catholics. On problems encountered by the respondents, the following findings were identified: The prostituted women reported they seldom encountered the problem on "men forcefully inserting their genital organs into our vaginas." On the psychological problems, the respondents showed fear on the statement "It's a shame in our family." In terms of financial problems, the prostituted women claimed "unequal sharing between pimp and me." The respondents had an anxiety on the statement "ashamed to mingle with other people." The prostituted women always used contraceptives, condoms, and other devices. They claimed that their spiritual life was no longer active. It can be said that prostituted women never encountered serious problems as presented in the following ratings: The respondents never encountered serious problems in regard to the sexual aspects. They sometimes encountered psychological and health problems, but seldom did they experience financial, social, and spiritual problems. It was found out that there was no significant difference in the problems encountered by the prostituted women when they were grouped according to age, educational attainment, type of services, length of experience, reasons for being a prostitute, place of origin, and religious affiliation. (Author's abstract)*

*Keywords: Social sciences, Prostituted women, Economic aspect, Sociological aspect, Educational attainment, Spiritual aspect*

***Psychological and physiological symptoms of selected menopausal women in Igpit, Opol, Misamis Oriental***

*Mende, Rosanna Marie M. , Lucero, Randy T. , Mercado, Ma. Dolores D. , Cuenco, Joffre Grant C., Manait, Jie Ann L. , Mutia, Olive*

*This study aimed to determine the Psychological and Physiological Symptoms of Selected Menopausal Women in Igpit, Opol, Misamis Oriental. It focused on three questions, namely: (1) What is the profile of the respondents in terms of age, civil status, educational attainment, and occupation? (2) What are the common symptoms of menopause in terms of psychological, and physiological and, (3) Is there a significant difference in the symptoms of menopausal in terms of age, civil status, educational attainment, and occupation? In answering these problems, the researchers used the descriptive design. The descriptive method was further used to determine the significant difference between the independent and dependent variables involved in the study. The analysis yielded the following results: (1) More than one-half of the respondents were ranging from 56-60 age brackets and claimed married. Most of them were not able to finish high school education but were employed. (2) Majority of the respondents often experienced fatigue and irritability during menopausal and hypertension. (3) On tests of significant difference, it was found out that age, civil status, educational attainment and occupation did not significantly affect the symptoms of menopausal. Therefore, the hypothesis formulated was accepted. On the basis of the findings, the following conclusions are drawn: There was more or less similar level of the respondents's assessment on the symptoms of menopausal in terms of psychological and physiological. By these findings, it came out that there was no significant difference in the symptoms of menopausal when the age, civil status, educational attainment, and occupation were considered and the hypothesis was accepted. (Author's abstract)*

**Keywords:** *Social sciences*

***Quality of work life practices in a multinational company in Sydney, Australia***

*Sy, Maria Victoria U. , Ouppara, N*

*The advent of modern technology has created a significant shift in the value placed on the benefits of industrialization, leading to reckoning its costs in what is known today as quality of work life. The concept permits a focus on key concerns – the dysfunction in the individual experience between work and the rest of life. The pressures of modern life have led to the stunted growth and development of the person which adversely affects his life experiences. It is within this purview that many companies today are increasingly more focused in providing quality of work to their employees. It is not a technique but rather a philosophy or concept adopted by*

many organizations today to balance business, human and social needs. It attempts to develop the individual while increasing productivity so that all sectors of society are benefitted. Coca Cola Amatil in Sydney, Australia espouses the core value of developing its people and rewarding performance. As a leading multinational organization, it takes pride with the fact that it conducts its operations based on the doctrine of developing and nurturing its people anchored on the principles of quality of work life. (Author's abstract)

**Keywords:** Social sciences, Quality of work life, Developing human potential, Social integration, Growth and security

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## **VETERINARY MEDICINE**

0551

### ***Abnormalities in lateral thoracic radiographs of domestic dogs with coughing***

*Gicana, Karlo Romano B. , Flores, Marianne Leila S. , Lozano, Relson B. , Oronan, Rey B. , Pajas, Arville Mar Grego*

*Lateral thoracic radiographs of dogs presented with coughing were assessed to determine abnormalities in selected thoracic structures. Thirty radiographic images were used to describe tracheal diameter and thoracic inlet ratio (TD:TI), pulmonary patterns present, cardiac silhouette abnormalities and vertebral heart size (VHS). Data collected were classified and grouped based on the age of the animal (growing, adult, senior) and the cephalic index. The TD:TI ratio was normal in all radiographs regardless of cephalic index. Majority of pulmonary patterns observed in dogs with cough were mixed patterns consisting of alveolar and bronchial forms. Loss of cranial waist and generalized cardiac enlargement were commonly seen in adult and senior dogs. Also, above normal VHS was observed in these animals, suggesting cardiac enlargement. The various radiographic abnormalities found in coughing dogs suggest that a more thorough clinical examination of patients must be done to rule out primary cardiac disease and secondary respiratory problems. (Author's abstract)*

**Keywords:** Veterinary medicine, Cardiorespiratory, Coughing, Dog, Radiography, Tracheal diameter, Thoracic inlet ratio, Vertebral heart size

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2014,  
(Filipiniana Analytics)  
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0552

### ***Analysis of genetic diversity and distances of some dog (Canis lupus familiaris) breeds based on DNA barcodes***

*Bondoc, Orville L., Gicana, Karlo Romano B. , Hurtada, Julienne Maria Undine Paz*



*DNA barcodes (i.e. cytochrome c oxidase subunit I or COI in the mitochondrial genome) obtained from 7 dog breeds sampled in the Philippines and 8 dog breeds in the United States retrieved from GenBank were analyzed using Neighbour-Joining method based on Kimura 2-parameter model in MEGA5. Based on 671 COI positions, overall genetic diversity of dog breeds was 2.9%. Average genetic distance was higher among dog breeds sampled in the Philippines ( $d=0.033$ ) than among GenBank-derived samples ( $d=0.001$ ). Average pair-wise distances between dog breeds sampled locally and those accessed from GenBank was 0.043 unit. Our results indicate that DNA barcodes can be effective in differentiating between breeds sampled in the Philippines, but not among dog breeds whose COI sequences were derived from GenBank. No genetic basis for grouping breeds based on their functional type is suggested. Dogs of the same breed from the two countries do not have the same COI sequences. Genetic distances between dog breeds from the United States were too small to identify introgressions and conclusively determine their origins and diversification. More COI sequences should thus be determined from distinct breeds and mixed-breed populations to improve reliability of using DNA barcodes to confirm breed origin of a dog. (Author's abstract)*

**Keywords:** *Veterinary medicine, DNA barcodes, Dog breeds, Evolutionary analysis, Genetic diversity*

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0553

***Anesthetic and cardiopulmonary effects of intravenous tiletamine-zolazepam with or without xylazine in goats (Capra hircus)***

*Addatu, Marianne Jane B. , Brobio, Exequiel F. , Abalos, Jovencio Hubert A., Gicana, Karlo Romano*

*The anesthetic duration and cardiopulmonary effects of tiletamine-zolazepam were compared in 16 goats using a 4 × 4 Latin square design. Tiletamine-zolazepam was administered at a dose of 5.5, 4.5, 3.5 and 2.5 mg/kg in T1, T2, T3 and T4 respectively. Additionally, 0.1 mg/kg xylazine was added as a bolus mixture to T2, T3 and T4. The anesthetic combinations were given IV to effect. The pulse rate, respiratory rate, temperature, peripheral capillary oxygen saturation (SpO<sub>2</sub>), electrocardiogram (ECG), and pain response were measured at 15 min intervals. The onset and duration of anesthesia and time to standing recovery were likewise recorded. Results show that T3 had the fastest onset of anesthesia and the duration of anesthesia was shortest for T1 and progressively increased from T4 to T2. Depression in PR, RR, temperature and SpO<sub>2</sub> was more significantly pronounced in T4 while ECG abnormalities were more frequent in T1. Results show that the addition of xylazine to tiletamine-zolazepam increases the duration of anesthesia without any significant adverse effects on the cardio-respiratory function or the frequency of cardiac arrhythmias in anesthetized animals. Tiletamine-zolazepam alone does not provide adequate analgesia for surgery. (Author's abstract)*

**Keywords:** *Veterinary medicine, Anesthesia, Cardio-pulmonary effects, Goats, Tiletamine-zolazepam, Xylazine*

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2016,  
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0554

***Anthelmintic effects of processed mature betel nut as dewormer to native chicken and small ruminants (sheep and goats)***  
*Tangalin, Moises GI*

*The study aimed to determine the anthelmintic effects of processed mature betel nut (Areca catechu) and commercial dewormer to native chicken, sheep and goats. The study consisted of four treatments. The result of the study reveals that after thorough laboratory examination of the feces, it was found out that round worms, tapeworms and parasite eggs were expelled by the processed mature betel nut. Among the treatments used, Treatment I, 1g processed nut per 1 kg body weight is the most effective. However, those administered with 2 and 3 grams of powdered betel nut is also effective but the chickens showed unhealthy condition. While in Goat and Sheep; Treatment I, administered with 20g/20kg.BW; Treatment II, administered with 30g/20kgLW; Treatment III, administered with 240g/20kgLW; and Treatment IV, administered with 1 ml/10 kgBW using albendazole, a commercial dewormer. The result of the study revealed that the processed native betel nut can expel eggs and adult parasites like roundworms and tapeworms, while commercial dewormer can expel only roundworms. Among levels of powdered betel nut used, Treatment II, 30g/20kgBW showed better result. (Author's abstract)*

**Keywords:** *Veterinary medicine, Betel nut, Commercial dewormer, Adult parasites*

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2011,  
(*Filipiniana Analytics*)  
NP

0555

***Beneficial effects of insoluble raw fiber concentrate addition to layer diet***  
*San Andres, Joice V. , Martin, Ernesto A. , Celestino, Oliver F. , Juan, Jayson J. , Lim, Jr., Vic*

*A total of 144 Dekalb layers (19 weeks of age) were used to determine the effects of insoluble raw fiber concentrate (IRFC) addition to layer diet on production performance, egg quality, segments of the gastrointestinal tract (GIT) and economic parameters. The layers were randomly assigned to standard layer diet (SLD) and SLD + 0.80% IRFC. Each diet had six replications with 12 layers per replication. Results of the study showed that feeding diet with IRFC significantly ( $P<0.05$ ) increased egg production by 3.43%, which was related to better efficiency of feed utilization ( $P<0.05$ ). Feeding diet with IRFC did not influence egg quality parameters and size and weight of the GIT. The net benefit analysis showed an advantage of PhP 9.72 per layer (for 16 weeks) fed diet with IRFC compared with those fed without IRFC. The findings show that IRFC is a potential feed additive for layers' diet. (Author's abstract)*

**Keywords:** *Veterinary medicine, Egg production, Gastrointestinal tract, Insoluble raw fiber concentrate, Layers*

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0556

***B-Mode and M-mode ultrasonography of the heart of lactating dairy water buffaloes (*Bubalus bubalis* L.)***

*Pajas, Arville Mar Gregorio A. , Tandang, Abraham G. , Acorda, Jezie A. , Constante, Jesa*

*Ultrasonographic features of the heart of lactating dairy water buffaloes were described and the relationship between the echocardiographic features and milk production performance was established in this study. Fifty-six, 3-11 year-old Bulgarian Murrah and Philippine carabao x Bulgarian Murrah water buffaloes, weighing 300-450 kg, with milk production of 0.9-9.8 kg/day were examined to determine the B and M-mode ultrasonographic features of the heart. The lactating animals were grouped into high (>5.5 kg, 35 animals) and low (≤5.5 kg, 21 animals) average daily milk yield and were further classified based on state of pregnancy (24) and non-pregnancy (32). An ultrasound machine equipped with a 3.5 MHz convex scanner was used to evaluate the heart. Two-dimensional ultrasonography (B-mode) was used to identify and describe the cardiac structures while M-mode echocardiography was used to measure the cardiac structures. The diameter of the aorta of high milk producing water buffaloes was greater than in low milk producing ones. In high milk producing buffaloes, non-pregnant animals had higher left ventricular internal diameter at diastole, left ventricular diastolic volume and stroke volume than pregnant ones. The echocardiographic values obtained in the study can be useful in evaluating cardiovascular disorders of dairy water buffaloes with varying milk yield. (Author's abstract)*

**Keywords:** *Veterinary medicine, Echocardiography, Heart, Lactation, Ultrasound, Water buffalo*

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NP*

0557

***Body fat status and hepatic and renal ultrasonograms of adult dogs given cholesterol with or without nanoliposome encapsulated malunggay (*Moringa oleifera*) administration***

*Acorda, Jezie A. , Rodriguez, Evelyn B. , Flores, Marianne Leila S. , Garcia, Cherissa A. , Malabanan, Nel*

*The effect of administration of nanoliposome encapsulated malunggay (*Moringa oleifera*) phenolic extract in dogs given cholesterol on body fat and hepatic and renal ultrasonograms was investigated in this study. Six adult male dogs were given cholesterol without (T1) or with non-encapsulated (T2) and nanoliposome encapsulated (T3) malunggay (*M. oleifera*) phenolic extract. Data on the back fat thickness, body condition score and hepatic and renal ultrasonograms were collected at weeks 0, 1 and 5. Dogs in T3 showed inconsistent changes in the back fat thickness and body condition score. Moreover, T3 dogs exhibited decrease in both hepatic and renal echo mean values. The initial findings suggest that monitoring of the liver and kidney in cases of dyslipidemia or hyperlipidemia should be considered since ultrasonogram results indicate probable development of liver and kidney problems. Further studies are recommended to verify these results. (Author's abstract)*

**Keywords:** *Veterinary medicine, Back fat, Dog, Kidney, Liver, Moringa, Nanoliposome, Ultrasonography*

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0558

***Chemical composition, sensory quality and acceptability of cream cheese from pure buffalo's milk added with malunggay (*Moringa oleifera* L.) leaf powder***

*Lapitan, Rosalina M. , Magpantay, Veneranda A. , Sarmago, Ione G. , Oliveros, Maria Cynthia R. , Apilado, Ojo*

*The addition of malunggay leaf powder (MLP) in cream cheese produced from pure buffalo's milk was investigated to compare the nutritive value, sensory quality and consumer acceptability and determine the optimum level of inclusion of MLP. The cream cheese was produced from pure buffalo's milk and was mixed with 0% MLP (T1), 0.5% MLP (T2), 1% MLP (T3) and 1.5% MLP (T4). Moisture, fat, protein and calorie content of the cream cheese did not differ significantly among treatments while crude fiber content increased significantly with the addition of MLP. The sensory characteristics of pure cream cheese were significantly higher than those with added MLP. The inclusion levels of MLP had significant negative quadratic relationship with the color and general acceptability of the cheese. Texture, aroma, flavor and aftertaste had significant negative linear relations with the levels of MLP. Consumer acceptability of cream cheese with 0.5, 1 and 1.5% MLP was lower than 0% MLP. This indicates that malunggay leaf powder cannot be added to cream cheese from buffalo's milk at the levels used in the study. Inclusion rate for malunggay powder lower than 0.5% should be considered in the production of cream cheese. (Author's abstract)*

**Keywords:** *Veterinary medicine, Buffalos milk, Cream cheese, Malunggay, Sensory quality*

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0559

***Clinico-anesthetic and hemodynamic effects of Midazolam and Dexmedetomidine Midazolam with propofol in dogs during Ovariohysterectomy***

*Mehta, Suresh , Singh, Kaushal Kumar , Roy, Birendra Kumar , Kumari, Chandrakala , Sharma, Arvind Kumar , Kumari,*

*The purpose of the study was to evaluate and compare the clinico-anesthetic and hemodynamic effects of midazolam and dexmedetomidine-midazolam with propofol anesthesia in clinically healthy bitches during elective ovariohysterectomy. Ten nulliparous bitches, 8-18 months old, weighing 10-20 kg, were randomly divided into two groups, MP and DM, with five dogs each. In MP, midazolam was given at 0.2 mg/kg body weight intramuscularly. In DM, dexmedetomidine and midazolam were given intramuscularly at 20 µg/kg body weight and 0.2 mg/kg body weight, respectively. After 10 min, propofol 'to effect' was given intravenously. The total doses of propofol required during induction and maintenance were 16.72±1.10mg/ kg and 2.21±0.74 mg/kg in MP and DM, respectively. DM exhibited excellent muscle relaxation and shorter induction time than MP. It is concluded that both groups exhibited satisfactory surgical anaesthesia. However, DM can produce better anesthesia with excellent muscle relaxation and minimum quantity of propofol used for induction and maintenance of anesthesia during ovariohysterectomy than MP. (Author's abstract)*

**Keywords:** *Veterinary medicine, Anesthesia, Dexmedetomidine, Dog, Midazolam, Ovariohysterectomy*

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2017,  
(Filipiniana Analytics)  
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### ***Clinico-pathological findings in West African dwarf goats with peste des petits ruminants infection***

***Nwoha, Rosemary I. O., Omamegbe, Joseph O., Nwakundu, Nnenna O***

*The clinical signs and pathological changes in West African dwarf goats naturally infected with peste des petits ruminants (PPR) were studied. Twenty one goats were housed in one pen throughout the duration of the study. One out of 21 goats was purchased with clinical manifestations suggestive of PPR and the goat served as the source of natural infection to the rest of the goats. By day 3 post aggregation of the animals, 5 out of the 21 goats showed clinical signs of PPR which include coughing, sneezing, pyrexia, starry hair coat, mucopurulent ocular and nasal discharges, watery diarrhea, head pressing, kyphosis and dehydration. By day 5 post aggregation all the goats had come down with the disease. Gross pathological findings included zebra stripes on the cecal mucosa, exudative pleurisy in the thoracic cavity, ecchymotic hemorrhages on the trachea with extensive froth, consolidation and congestion of the lungs. New findings of degenerative fatty liquefaction around the coronary region of the heart and within the ventricles, including ante-mortem clots within the ventricles were made in some cases. These manifestations were observed in varying degrees of severity in the goats and can be considered pathognomonic of PPR infection. (Author's abstract)*

***Keywords: Veterinary medicine, Clinical signs, Pathological changes, Peste des petits ruminants, West African dwarf goats***

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2013,  
(Filipiniana Analytics)  
NP*

### ***Comparative evaluation of reverse transcriptase-polymerase chain reaction and immunohistochemistry for the diagnosis of porcine epidemic diarrhea in Luzon, Philippines***

***Alcantara, Amadeo A., Nicolas, Karina Marie G., Molina, Helen***

*Reverse transcriptase polymerase chain reaction (RT-PCR) and immunohistochemistry (IHC) were used to demonstrate the presence of porcine epidemic diarrhea virus (PEDV) antigen in the intestinal cells of suckling pigs in Luzon. The PEDV antigen was detected in 11 (13.75%) and 32 (40%) out of 80 intestinal samples using RT-PCR and IHC, respectively. RT-PCR generated a 412-bp cDNA probe which amplified the viral RNA encoding the membrane protein of PEDV from the intestinal segments of the jejunum. Immunohistochemistry revealed positive cells in the jejunum as indicated by the brown staining in the cytoplasm of infected cells. Comparative evaluation of the two tests revealed a fair agreement. Histopathological changes observed include vacuolation of enterocytes, villous atrophy as exemplified by 2:1 villous:crypt height ratio and exfoliation of enterocytes which are associated with the clinical signs of PED such as watery diarrhea, dehydration and acidosis. RT-PCR may be used as a screening test for PEDV antigen detection using jejunal tissue with feces because of the shorter duration of processing and testing. IHC, on the other hand, can be performed as confirmatory test using formalin-fixed jejunal samples. (Author's abstract)*

***Keywords: Veterinary medicine, Histopathology, Immunohistochemistry, Porcine epidemic diarrhea, Reverse transcriptase polymerase chain reaction (RT-PCR), Swine***

*Philippine Journal of Veterinary and Animal Sciences, Volume No. 41 Issue No. 1, 49-56  
2015,*

***Cryptococcosis in a four-year-old intact male domestic short-haired cat***  
***Eguia, Peter Mark R. , Oronan,***

*A four-year old male domestic shorthair cat was brought to the University of the Philippines Veterinary Teaching Hospital with clinical signs of sneezing and nasal, ocular and gingival discharges. Physical examination revealed ulceration of the nostrils, gingival swelling and a subcutaneous lumbo-sacral lump. Scrapings and impression smears were obtained from the oral and nasal lesions and were submitted for cytologic evaluation. Yeast-like organisms with variably-sized thick capsules resembling soap bubbles were found, confirming the presence of Cryptococcus sp. Initial treatment given before confirmation of the disease included enrofloxacin, meloxicam and ascorbic acid. Fluconazole was given after the disease was confirmed. Prognosis for the case was good, with aggressive treatment and constant monitoring of the patient. (Author's abstract)*

**Keywords:** *Veterinary medicine, Cat, Cryptococcosis, Cytology, Oral lesions, Nasal lesions*

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*Philippine Journal of Veterinary and Animal Sciences, Volume No. 39 Issue No. 1, 141-146*  
2013,  
(Filipiniana Analytics)  
NP

***Detection of antibodies against porcine reproductive and respiratory syndrome and porcine circovirus type 2 in smallholder swine farms from an abattoir in Sariaya, Quezon, Philippines***  
***Tan, Yasmin Francesca S. , Torres, Ma. Immaculada P. , Pajas, Arville Mar Gregorio A. , Domingo, Ronnie D. , Regondola, John Christopher I. , Padilla, Mildred A. , Ducusin, Rio J***

*To detect the presence of Porcine Reproductive and Respiratory Syndrome (PRRS) and Porcine Circovirus Type 2 (PCV2) antibodies from pigs raised in smallholder farms in Sariaya, Quezon, a total of 53 blood samples were collected from pigs in the Sariaya Abattoir, Quezon. Blood sera were harvested and then tested for the presence of PRRS and PCV2 antibodies using indirect enzyme-linked immunosorbent assay. This study revealed that out of 53 serum samples, 8 (15.1%) were seropositive for PRRS and 43 (81.1%) were seropositive for PCV2. Based on origin of serum samples, 5 (41.7%) out of 12 barangays studied in Sariaya, Quezon had PRRS-seropositive samples and 11 (91.7%) out of 12 barangays had PCV2seropositive samples. The results suggest that pigs raised in smallholder farms in some villages in Sariaya, Quezon were infected with these two economically important diseases and can be a threat not only to smallholder farms but also to neighboring commercial farms. (Author's abstract)*

**Keywords:** *Veterinary medicine, ELISA, Porcine Circovirus Type 2 (PCV2), Porcine Reproductive and Respiratory Syndrome (PRRS), Smallholder farm, Swine, Sariaya, Quezon, Philippines*

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*Philippine Journal of Veterinary and Animal Sciences, Volume No. 41 Issue No. 2, 153-159*  
2015,  
(Filipiniana Analytics)  
NP

***Detection of antibodies against *Toxoplasma gondii* and *Chlamydomphila felis* in Malayan Civets (*Viverra zibetha*), Palawan Bearcats (*Arctictis binturong whitei*) and Asian Palm Civets (*Paradoxurus hermaphroditus*)***

*Lastica, Emilia A. , Delos Santos, Justine Paola S. , Licuan, Daphne A. , Oronan,*

*Twelve captive civets composed of two Malayan Civets (*Viverra zibetha*), four Palawan Bearcats (*Arctictis binturong whitei*) and six Asian Palm Civets (*Paradoxurus hermaphroditus*) from the Protected Areas and Wildlife Bureau - Wildlife Rescue Center, Quezon City, Philippines were used in the study. Blood was collected and the presence of antibodies against *Toxoplasma gondii* and *Chlamydomphila felis* were detected using an ELISA-based kit. Five out of 12 civets showed antibodies against *T. gondii* while two out of 12 showed antibodies against *C. felis*. The results of this study confirmed the presence of *T. gondii* and *C. felis* antibodies in captive civets in the wildlife facility. The zoonotic potential of these organisms should be investigated and management within the rescue center should be reviewed to minimize the occurrence of the organisms. (Author's abstract)*

**Keywords:** *Veterinary medicine, Chlamydomphila felis, Civets, ELISA, Toxoplasma gondii, Zoonosis*

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*Philippine Journal of Veterinary and Animal Sciences, Volume No. 39 Issue No. 2, 287-292*  
2013,  
(*Filipiniana Analytics*)  
NP

***Detection of antibodies to feline coronavirus in stray domestic short-haired cats (*Felis catus*) and tigers (*Panthera tigris*)***

*Flores, Marianne Leila S. , Ubaldo, Franz Philip Joseph R. , Reyes, Marco F. , Suba, Sheina She*

*No study has yet been conducted on the seroprevalence of feline coronavirus antibodies in the Philippines. Sera from 42 stray domestic short-haired cats (*Felis catus*) from Metro Manila and nine captive tigers (*Panthera tigris*) from Manila Zoological and Botanical Gardens (Manila Zoo) were tested for the presence of IgG antibodies against Feline coronavirus (FCoV) using ELISA. Mutant FCoV may result to the development of feline infectious peritonitis (FIP). Results show that 86% (36/42) of cats and 100% (9/9) of captive tigers were seropositive. Chi-square test determined that the acquisition of FCoV antibodies is influenced by both the sex and the age of the animals. Approximate Z-test confirmed that the population of seropositive animals is significant and that a large proportion of the test population was exposed or is currently exposed to FCoV infection. Therefore, it is important that there is strict implementation of sanitation and waste disposal management, continuous stray cat population control measure and constant monitoring of the cats for the possible development of the fatal FIP. (Author's abstract)*

**Keywords:** *Veterinary medicine, Cat, Feline coronavirus, Feline infectious peritonitis, Tiger*

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*Philippine Journal of Veterinary and Animal Sciences, Volume No. 41 Issue No. 2, 147-152*  
2015,  
(*Filipiniana Analytics*)  
NP

***Detection of Chlamydomphila felis antibodies in Felis catus and Panthera tigris at a wildlife facility using ELISA***

*Flores, Marianne Leila S. , Tolentino, Jesse P. , Berris, Frances Anne Therese M., Reyes, Marco*

*Thirty domestic short haired cats (Felis catus) and nine tigers (Panthera tigris) of both sexes and various ages, living within the vicinity of a wildlife facility were used in the study. These animals were apparently healthy at the time of the study. Only the tigers were vaccinated against Rabies, Feline Panleukopenia, Calicivirus and Herpesvirus and dewormed with ivermectin. The blood sera of these animals were tested for Chlamydomphila felis antibodies using an ELISA test kit. Six of the 39 (15%) animals tested had serologic evidence of exposure to Cp. felis. Three of the 30 (10%) domestic short haired cats and three out of the nine tigers (33%) tested positive. Adults (83%) were found to be more prone to exposure than juveniles (17%). Both male and female have equal predisposition to exposure to Cp. felis. The study shows that adult felids were more prone to the infection than young felids, regardless of sex. (Author's abstract)*

**Keywords:** *Veterinary medicine, Cat, Chlamydomphila felis, ELISA, Tiger*

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*Philippine Journal of Veterinary and Animal Sciences, Volume No. 41 Issue No. 1, 80-84  
2015,  
(Filipiniana Analytics)  
NP*

***Detection of Malassezia-like yeasts on the skin of apparently healthy dogs using cytology***

*Maligat, Arielle Karolina L. , Matawaran, Veron*

*The frequency, body distribution and population size of Malassezia-like yeasts were determined from 30 dogs with apparently healthy skin. Cutaneous swab samples obtained from nine sites of the body were associated with the breed, length of hair, sex and age of the animals. Of the thirty dogs, eleven (36.67%) were considered positive for Malassezia-like infections. No differences were noted in the frequency of infection between breeds, length of hair, sex and age ( $P>0.05$ ). Of the fourteen positive cases based on body distribution, 5 (35.71%) and 4 (28.57%) were obtained from the right and left ears, respectively, 3 (21.43%) from the facial area, 1 (7.14%) from the medial surface of the arm and 1 (7.14%) from the medial surface of the thigh. Population size of Malassezia-like yeast cells ranged from 0 to 273 with no differences ( $P>0.05$ ) among breeds, sex and age of dogs. The highest population counts were noted in the right ear followed by the left ear, then face, medial surface of the arm and thigh. (Author's abstract)*

**Keywords:** *Veterinary medicine, Cytology, Dog, Malassezia sp., Malasseziasis, Yeast*

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*Philippine Journal of Veterinary and Animal Sciences, Volume No. 39 Issue No. 1, 107-114  
2013,  
(Filipiniana Analytics)  
NP*



### **DNA barcoding of domestic swine breeds and crossbreeds (*Sus scrofa*) in the Philippines**

*PeÁ±alba, Francisco F. , Dominguez, Jorge Michael D. , Bondoc, Orvi*

*DNA barcodes (i.e. cytochrome c oxidase subunit I or COI in the mitochondrial genome) obtained from eight domestic pig breeds and crossbreeds (*Sus scrofa*) in the Philippines and five swine breeds retrieved from GenBank were analyzed using Neighbour-Joining method based on Kimura 2-parameter model in MEGA5. Based on 617 COI positions, overall genetic diversity of domestic swine breeds and crossbreeds was 36.3%. Average genetic distance was highest among commercial purebred pigs ( $d=0.291$ ), followed by crossbred pigs ( $d=0.289$ ), native pigs ( $d=0.202$ ) and smallest among GenBank-accessed breeds ( $d=0.008$ ). The results indicate that DNA barcodes can be effective in differentiating between breeds sampled in the Philippines, but not among swine breeds whose COI sequences were derived from GenBank. DNA barcodes can distinguish purebred pigs sampled in the Philippines from their counterpart breed listed in GenBank. Wide genetic distances of COI sequences imply greater diversity of native genetic resources that are distinctly different from pig breeds raised locally and abroad. Genetic distances between a crossbred pig and its dam's breed are not small. However, more COI sequences should be determined from distinct crossbred populations to improve reliability of DNA barcoding to discriminate them from their dam's breed and to confirm breed origin of pigs. (Author's abstract)*

**Keywords:** *Veterinary medicine, DNA barcodes, Domestic swine breeds and crossbreeds, Evolutionary analysis, Genetic diversity*

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2013,  
(Filipiniana Analytics)  
NP*

### **Effect of omega-3 fatty acid enriched feed supplement on broiler performance and carcass quality**

*Merca, Florinia E. , Acda, Sonia P. , Roxas, Domingo B. , Marco, Deanna*

*A study was conducted to determine the effect of omega-3 fatty acid enriched feed supplement on performance and carcass quality of broilers. A total of 250 seven day-old Cobb broiler chicks were randomly assigned to five treatments in a completely randomized design. The treatments were: diet with coconut oil (control) and diets with omega-3 fatty acid enriched feed supplement (n-3 FAS) replacing coconut oil at 25, 50, 75 and 100% (full replacement). Performance parameters (body weight gain, feed intake, feed efficiency, livability rate and dressing percentage) and organoleptic characteristics and fatty acid composition of meat were determined. The performance and organoleptic characteristics of broiler meat did not differ ( $P>0.05$ ) among treatments. The concentration of omega-3 fatty acid (alpha linolenic acid) in thigh meat increased ( $P<0.05$ ) upon complete replacement of coconut with n-3FAS. The n-3 FAS can, therefore, be used to replace coconut oil in the diet at any level without affecting the performance and carcass quality of birds. It can also be used to enrich the broiler meat with omega-3 fatty acid. (Author's abstract)*

**Keywords:** *Veterinary medicine, Alpha-linolenic acid, Broiler, Omega-3 fatty acid, Organoleptic characteristics, Performance parameters*

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2013,  
(Filipiniana Analytics)*

***Effects of conventional white needle acupuncture and aquapuncture on mastitis and milk production in dairy cattle***

*Rayos, Antonio A. , Daga, Jasmine D., Acorda, Jezie*

*Eighteen Holstein-Friesian x Sahiwal crossbred lactating cows, 3-8 years old, previously diagnosed with mastitis were used to evaluate the effect of acupuncture on mastitis and milk production. The animals were distributed randomly into one control (non-treated) and two acupuncture treatment groups, conventional white needle acupuncture (CWNA) group and aquapuncture group, with six animals per group. For the acupuncture groups, two acupoints, Bai Hui and Nyukon were stimulated daily for three consecutive days and repeated after a week for two weeks. The CWNA group was stimulated by thrusting and twirling of filiform needles for one minute at five minute intervals for 20-30 min daily. For the Aquapuncture group, 1 ml of 1% chilli pepper decoction was injected into each acupoint using a hypodermic needle. The observation period lasted for three months. Improvement against mastitis was observed in the Aquapuncture group but not in the CWNA and Control groups. The average daily milk production presented as percentage change in milk production showed that the Control group had the steepest decline while CWNA group had the least decline. The above results suggest that aquapuncture has the potential to decrease incidence of mastitis while both CWNA and aquapuncture have the potential to increase milk production. (Author's abstract)*

**Keywords:** *Veterinary medicine, Acupuncture, Aquapuncture, Cattle, Mastitis, Milk production*

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2013,  
(Filipiniana Analytics)  
NP*

***Effects of yeast-based non-nutritional enhancers on the performance of weanling pigs***

*Roxas, Domingo B. , Bael, Ang*

*The study was conducted to determine the effects of yeast-based nonnutritional enhancers (mannoproteins, betaglucans and nucleotides) (YNE) on the growth performance of weanling pigs. Eighty crossbred weanling pigs (40 males and 40 females) with 7-8 kg initial weight were placed in groups of five pigs per pen and randomly distributed to four dietary treatments: 1) basal diet (BD) + 0% YNE; 2) BD+ 0.05% YNE; 3) BD + 0.15% YNE; and 4) BD + 0.30% YNE. The treatments were arranged following a randomized complete block design with sex of the animals as the blocking factor. The weanling pigs were fed with booster diet for five days and pre-starter diet for 25 days. Results showed that feed intake increased ( $P<0.05$ ) only at 0.30% YNE inclusion rate. The average daily gain increased ( $P<0.05$ ) at 0.15% and 0.30% YNE inclusion rates. However, feed conversion efficiency did not differ ( $P>0.05$ ) among the treatments. Higher inclusion rate of YNE in the diet reduced the scouring incidence and increased the livability rate of weanling pigs. The addition of 0.30% YNE in the basal diet was the most practical to use among treatments. (Author's abstract)*

**Keywords:** *Veterinary medicine, Betaglucans, Mannoproteins, Nucleotides, Weanling pigs, Yeast-based non-nutritional enhancer*

***Electrocardiographic profile of captive marbled water monitor lizard (*Varanus marmoratus*, Weigmann, 1834)***

*Tan, Yasmin Francesca S., Gicana, Karlo Romano B., Lastica, Emilia*

*Electrocardiography is a very useful procedure for examination of cardiac disorders in animals. However, very few electrocardiographic (ECG) studies have been conducted on reptiles. ECG examination was conducted to obtain the baseline values of 14 captive marbled water monitor lizards (*Varanus marmoratus*) at a wildlife facility. The ECG values of the monitor lizards were compared according to gender (ten male and four female), length (nine small and five large) and weight (nine <2 kg and five 2 kg and above). Results of the study determined that the length of the animal positively affected the QRS segment. Gender and weight have no significant effect on the electrocardiographic parameters of the monitor lizards. The ECG profile obtained in the study can be used as a reference for examination of cardiovascular disorders in marbled water monitor lizards. (Author's abstract)*

**Keywords:** *Veterinary medicine, Electrocardiography, Heart, Marbled water monitor lizard, *Varanus marmoratus**

***Excretion of chlortetracycline in cow milk subsequent to intrauterine administration***

*Vicentijevic, Mihajlo, Vukovic, Vuja*

*The study was conducted to determine the time of excretion and the concentration (mg/ml) of extracted chlortetracycline in milk. Eight dairy cows were given intrauterine chlortetracycline (as the hydrochloride), milk samples were collected at 8, 20, 32, 44, 56, 68 and 80 hr after drug administration and the minimum concentration of residues in the milk was determined. The time of chlortetracycline residue retention in milk samples in treated cows ranged from 20 to 56 hr (mean of 39.5 hr). The minimum concentration of antibiotic in the milk ranged from 0.09 to 1.20 mg/ml. In some cow's milk during the trial, on average, at least 22,387 mg was excreted, which is on average at least 2.23% of the administered dose of antibiotics. The results of the study show that chlortetracycline residue can be detected in cow milk until 56 hr after administration. (Auntor's abstract)*

**Keywords:** *Veterinary medicine, Antibiotic, Chlortetracycline, Milk, Minimum concentration, Residues*

***New feather mites of the genera neocalaobia and hyomesalges (Acari) from the Palawan hornbill (Anthracoceros marchei Oustalet, 1885) (Coraciiformes: Bucerotidae) in the Philippines***  
Eduardo, Salc

Feather mites were collected from live Palawan hornbills (*Anthracoceros marchei*) kept at a wildlife facility in Quezon City, Philippines. Two new species namely, *Neocalaobia philippina* and *Hyomesalges palawanus* were identified. These are described and photographs and drawings of them are provided. *N. philippina* is characterized by a trapezoidal prodorsal shield, a hysteronotal shield extending posteriorly near opisthosomal lobes, midtransverse row location of the scapular setae inside the prodorsal shield, the presence of an inverted Y-shaped epandrium in the male and presence of inverted Y-shaped oviporus and the bow-shape epigynum in the female. *H. palawanus* is characterized by the posterior to and outside the pronotal shield position of the scapular setae and setae *si* are much closer to setae *se* than to each other. The hysteronotal shield in the male is concave in its anterior border with rounded corners while it is straight in its anterior border in the female. Both species were differentiated from closely related species of their respective genus. *Hyomesalges* is recorded for the first time in the Philippines and *Neocalaobia* is recorded for the first time in *Anthracoceros marchei* constituting a new locality and host records for the genera, respectively. (Author's abstract)

**Keywords:** Veterinary medicine, *Anthracoceros marchei*, Feather mites, *Hyomesalges palawanus*, *Neocalaobia philippina*, Palawan hornbill, Philippines

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NP

***Gross and histopathologic features of bubaline meat infected with Sarcocystis spp.***  
Rivera, Eddie P. , Navarro, Lariza G. , Bermudez, Jennifer B. , Nicolas, Karina Ma

The study was conducted to describe the gross and histopathologic features of sarcocysts in bubaline carcasses at Santiago City abattoir. A total of 1,015 newly slaughtered bubaline carcasses that passed through ante-mortem examination were examined for the presence of macrocysts which were described in terms of organs affected, shape, color and size. From the carcasses with macrocysts, tissue sections were collected and examined. Fifty (4.93%) of the carcasses had visible macrocysts predominantly found on the tunica muscularis and serosa of the esophagus (84%), muscles in the rump (4%) and in both tissue (12%). Esophageal and skeletal muscle macrocysts appeared creamy white, fusiform in shape with the esophageal macrocyst's mean biometry of 1.11mm and 0.40mm while those in rump muscles had mean biometry of 1.03 mm and 0.33 mm. Histopathology revealed that the tissue samples had muscle fiber degeneration (100%), varying sizes and thickness of microcysts wall (57%), inflammatory cell infiltration (14%), and degenerating sarcocyst (14%). Results showed the presence of *Sarcocystis* spp. in bubaline meat wherein esophageal sarcocysts were larger than those in the rump muscles and macrocysts are accompanied by microcysts. The biometry of the macrocysts found in this study was relatively smaller from previous reports in the country. (Author's abstract)

**Keywords:** *Veterinary medicine, Bubaline meat, Macrocyst, Microcyst, Sarcocystis, Water buffalo*

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2016,  
(*Filipiniana Analytics*)  
NP

0576

***Hematologic profile and biochemical values in adult dogs given cholesterol with or without nanoliposome-encapsulated malunggay (Moringa oleifera) administration***

*Flores, Marianne Leila S. , Marte, Benjamin Reuel G. , Malabanan, Nelson B. , Garcia, Cherissa A., Rodriguez, Evelyn*

*The hematologic profile and biochemical values in adult dogs given nanoliposome-encapsulated malunggay (Moringa oleifera) phenolic extract were determined in this study. Six adult dogs were divided into three groups: Group A: cholesterol only; Group B: cholesterol with malunggay phenolic extract; and Group C: cholesterol with nanoliposome-encapsulated malunggay phenolic extract, with two dogs per group. Each dog was subjected to a complete blood count at weeks 0, 1 and 5 and serum biochemistry tests at weeks 0 and 5. The results showed that thrombocytopenia and a decrease in the elevated blood urea nitrogen level were observed after administration of the nanoliposome-encapsulated malunggay phenolic extract. It also showed below normal cholesterol and low density lipoprotein levels and within normal triglyceride and high density lipoprotein levels after the experiment. These preliminary findings suggest that nanoliposome-encapsulated malunggay phenolic extract may have an effect on the platelets, kidneys, and lipid profile. However, further studies should be done to verify this association. (Author's abstract)*

**Keywords:** *Cholesterol, Veterinary medicine, Dog, Hematology, Kidneys, Moringa, Nanoliposome*

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2015,  
(*Filipiniana Analytics*)  
NP

0577

***Hematological and histological features of the testies and liver of male African catfish (Clarias gariepinus) fed ration supplemented with Vernonia amygdalina Del***

*Owoyemi, Adedoyin O. , Aina, Oluwasanmi O. , Ajala, Oluwato*

*The haematological and histological features of 56 male Clarias gariepinus fish weighing 450 ±50 g were studied after supplementing their diet with V. Amygdalina Del leaves at four inclusion levels: 0%, 5%, 10% and 15% for 45 days. The duplicate design was used in the conduct of the experiment. Hematology, testosterone assay, condition indices, Histology of the liver and testes and histomorphometry of the testes were then studied. There was no significant difference ( $p>0.05$ ) in the complete blood count, testosterone concentration, gonadosomatic index and hepatosomatic index across the groups. Histology of the liver revealed greater hepatocytes vacuolation in treated groups than the control while the histology of the testes showed the control had the best histological integrity of all the groups. The 10% and 15% groups had significantly higher seminiferous tubule widths. The results of the study show that V. Amygdalina had no significant effects on most*

of the studied parameters of fish and may not be steroidogenic; hence, the leaf can be included in the diet of male *C. Gariepinus* at the tested levels with some degree of caution. (Author's abstract)

**Keywords:** *Veterinary medicine, Clarias gariepinus, Hematology, Testosterone, Vernonia amygdalina*

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(*Filipiniana Analytics*)  
NP

0578

### ***Hematological, macroscopic and microscopic findings in two stranded whales (*Mesoplodon densirostris* and *Kogia sima*) and possible causes of deaths***

*Masangkay, Joseph S. , Aragonas, Lemnuel V. , Bondoc, Jo*

*Stranded marine mammals may serve as opportunities for probing scientific queries. This study subjected formalin-fixed tissues of two cetaceans, *Mesoplodon densirostris* (Blainville's beaked whale) and *Kogia sima* (dwarf sperm whale), found stranded in Region 11 (Davao) of the Philippines between April and July 2014 to histopathological examination following necropsy and hematological evaluations. Lesions observed in 2 of 2 animals (100%) were congested hepatic sinusoids, hemorrhages, hemosiderosis, parasitic disease and pulmonary edema. Other lesions (1 of 2, 50%) were seen in the gastrointestinal tract (congestion, Lieberkhan mononuclear cell infiltrations, villi blunting and adhesion), kidney (blood sludging, membranous glomerulopathy, tubular cell atrophy) and lungs (fungal granuloma, pneumonia). *M. densirostris* showed severe iron deficiency and thrombocytopenia but with lymphocytosis. *K. sima* revealed low white blood cell count and neutropenia but with thrombocytosis and hemoconcentration. This study suggests that systemic infection for both animals with membranous glomerulopathy and endoparasitism associated pneumonia (in *M. densirostris*) and microthrombi formation (in *K. sima*) were the major causes of their deaths. Presented results, however limited, may serve as baseline data underpinning cetacean clinicopathological research in the Philippines. (Author's abstract)*

**Keywords:** *Veterinary medicine, Hematology, Histopathology, Kogia sima, Mesoplodon densirostris, Stranding*

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NP

0579

### ***Histidine decarboxylase-producing bacteria and histamine content of gill muscles from longtail tuna fish (*Thunnus tonggol*) in Oman Sea***

*Shoaibi-Omrani, Babak , Koohdar, Val*

*The study was conducted to detect histidine decarboxylase-producing bacteria and determine histamine content for evaluation of potential histamine poisoning in 30 frozen specimens of longtail tuna harvested from the Oman Sea. Bacteriological isolates and the amount of histamine were obtained from 500 g of gill muscles. Trypticase soy agar was used for examination of mesophilic and psychrophilic counts. Enterobacteriaceae and histamine producing bacteria were enumerated in violet red bile dextrose agar and Niven's media, respectively.*

The results indicated that the average of total count and psychrophilic count were  $4.81 \pm 0.26$  and  $4.66 \pm 0.25$  Log<sub>10</sub> CFU/g, respectively. Several bacteria were identified as histidine decarboxylase-producing bacteria. Among them, *Clostridium perfringens* had the highest contribution (24.4%) followed by *Proteus* spp. (23.0%), *Klebsiella* spp. (13.9%) and *Enterobacter* spp. (11.1%). Histamine contents in 20.0, 15.0 and 65.0% of samples were <20, 20-50, and >50 ppm, respectively. The high percentage of samples (65%) with histamine content higher than the standard (<50 ppm) suggests potential histamine poisoning due to longtail tuna fish consumption in humans. (Author's abstract)

**Keywords:** Veterinary medicine, Histamine, Histidine decarboxylase, Longtail tuna, Oman Sea, *Thunnus tonggol*

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NP

0580

### ***Histology, morphometry and morphology of papillae in the ventral sac of the rumen of neonatal dairy calves (*Bos taurus* Linnaeus) fed different types of diets***

***Ducusin, Rio John T. , Maala, Ceferino P. , Vicenal, Jov***

The study was conducted to describe the histology, morphometry and morphology of the papillae on the ventral sac of the rumen of neonatal dairy calves using light, digital and scanning electron microscopy. Sixteen two-week old Holstein Friesian-Sahiwal cross calves were divided into four groups then fed with different diets for 60 days. The diets were T1 (milk replacer), T2 (milk replacer and fresh Napier grass), T3 (milk replacer and concentrate) and T4 (milk replacer, fresh Napier grass and concentrate). The epithelium was thinnest ( $7.8 \pm 1.67 \mu\text{m}$ ) ( $P < 0.05$ ) and thickest ( $15.6 \pm 3.9 \mu\text{m}$ ) ( $P < 0.05$ ) in T3 and T2, respectively. The lamina muscularis was thinnest ( $71.7 \pm 20.67 \mu\text{m}$ ) ( $P < 0.05$ ) and thickest ( $175.1 \pm 15.43 \mu\text{m}$ ) ( $P < 0.05$ ) in T1 and T2, respectively. Papillae were shortest ( $35.7 \pm 3.47 \mu\text{m}$ ) ( $P < 0.05$ ) and longest ( $214.8 \pm 37.79 \mu\text{m}$ ) ( $P < 0.05$ ) in T1 and T4, respectively. All the treatments reacted to Periodic Acid-Schiff and Alcian blue pH 1.0 and pH 2.5 stains. Finger-like and tongue-shaped papillae were the predominant papillae observed. Complex branching of papillae were seen only in T4. The study showed that there were significant differences in the anatomical features of the papillae in calves fed with different diets. (Author's abstract)

**Keywords:** Veterinary medicine, *Bos taurus*, Histology, Morphometry, Rumen papilla, Scanning electron microscope, Ventral sac

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NP

0581

### ***Impaired recognition memory in monkeys after damage limited to the hippocampal region***

***Buffalo, Elizabeth A. , Stefanacci, Lisa , Teng, Edmond , Squire, Larry R. , Zola, Stuart M., Clark, Rober***

Monkeys with lesions limited to the hippocampal region (the hippocampus proper, the dentate gyrus, and the subiculum) were impaired on two tasks of recognition memory: delayed nonmatching to sample and the visual

*paired-comparison task. Recognition memory was impaired in five different groups of monkeys, whether the lesions were made by an ischemic procedure, by radio frequency, or by ibotenic acid. The finding that the hippocampal region is essential for normal recognition memory performance is considered in the context of current ideas about the role of the hippocampus in declarative memory. (Author's abstract)*

*Keywords: Veterinary medicine, Hippocampus, Recognition memory, Monkeys, Radio-frequency lesions, Ischemic lesions, Ibotenic acid lesions, Delayed nonmatching to sample, Visual paired comparison*

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(Filipiniana Analytics)  
NP*

0582

***Incidence of right-horn and left-horn pregnancies in locally raised holstein-freisian x sahiwal crossbred dairy cattle***

*Rayos, Anto*

*The study was conducted to compare the incidence of right-horn and left-horn pregnancies in Holstein Freisian-Sahiwal dairy cows and heifers. Pregnancy diagnosis was done by rectal palpation. Pregnancies wherein the corpus luteum is on the same side or on the opposite side of the pregnant horn is also presented. Six hundred seventy-eight dairy cows and 178 dairy heifers from four dairy farms in Laguna and Batangas provinces were used in the study. The study showed that 64.2% of the cows examined had right-horn pregnancy which was higher ( $P<0.05$ ) than left-horn pregnancy at 35.8%. For the heifers, right-horn pregnancy (61.2%) was also higher ( $P<0.05$ ) than left left-horn pregnancy (38.8%). There was no significant difference between right and left-horn pregnancies in the cows and heifers examined. The study also showed that of the 678 cows and 178 heifers, 98.1% and 97.8%, respectively had corpus luteum on the same side of the pregnant horn. These figures were higher ( $P<0.05$ ) than the 13 or 1.9% of the pregnant cows and 4 or 2.2% of the heifers with corpus luteum on the opposite side of the pregnant horn. The present study confirms previous findings that the incidence of right-horn pregnancy is higher than left-horn pregnancy and in almost all cases, the corpus luteum was on the same side of the pregnant horn. (Author's abstract)*

*Keywords: Veterinary medicine, Corpus luteum, Dairy cattle, Left-horn, Pregnancy, Rectal palpation, Right-horn*

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2017,  
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NP*

0583

***High level resistance and multi-resistance to medically important antimicrobials in Escherichia coli isolated from healthy pigs at slaughter in Laguna, Philippines***

*Amatorio, Marietta Q. , Padilla, Mild*

*The disc diffusion assay was used to evaluate the susceptibility of Escherichia coli isolates from slaughter pigs to a panel of 12 antimicrobials used in human medicine. Samples of colon contents were collected from 120 pigs*



at three abattoirs in Laguna. *E. coli* showed high level resistance (95%) and multiresistance (76.3%) to >3 classes of antimicrobials important for human treatment. Most commonly observed resistance was towards chloramphenicol (78%), trimethoprim (68%), sulfamethoxazole-trimethoprim (65%), ampicillin (62%) and tetracycline (60%). Some were resistant to streptomycin (48%), nalidixic acid (32%) and ciprofloxacin (28%); and few were resistant to gentamicin (18%) and kanamycin (2%). Resistance was not detected to cefotaxime and ceftriazone. Of concern is the resistance to critically important classes of antimicrobials for treatment of human infections: fluoroquinolones, aminoglycosides and penicillins. Twenty-six resistance phenotypes comprised up to nine compounds from six classes. Concurrent resistance to ampicillin, chloramphenicol, trimethoprim and trimethoprim-sulfamethoxazole was the most common co-resistance phenotype (35.7%). The high level resistance of *E. coli* in different combinations of medically important antimicrobials raises concern about potential spread of resistant *E. coli* to humans through contaminated pork. The findings point to the need for surveillance of antimicrobial resistance and drug usage in pigs. (Author's abstract)

**Keywords:** Veterinary medicine, Antimicrobial resistance, *Escherichia coli*, Philippines, Pig

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NP

0584

**Macroscopic and microscopic findings in the liver, gallbladder, spleen and kidneys of captive reticulated pythons (*Python reticulatus*, Schneider, 1801) (Reptilia: Pythonidae) with pneumonia**

Lola, Suzanneth G. , Pajas, Arville Mar Gregorio A. , Acorda, Jezie A. , Samaniego, Cherry Ann A., Lastica, Emilia

The macroscopic and microscopic findings in the liver, gallbladder, spleen and kidneys of 12 reticulated pythons with pneumonia were described through gross and histopathological examinations. Gross findings in the liver observed were lesions on the surface (milliary white nodules and adhesions) and within the parenchyma of the organ. The gallbladder had a circumference of  $15.71 \pm 4.75$  cm and length of  $6.28 \pm 2.01$  cm. Gross lesions in the kidneys include congestion, thickened capsule and web-like adhesions. Twenty-five percent of the animals were found to have spleen that was irregularly shaped, oblate-spheroid organs with varying discolorations. Histopathological examination revealed signs of hepatitis, nephritis and nephrosis, splenitis and hyperplasia of the pseudostratified epithelium of the gallbladder. Significant histopathologic findings include presence of visceral larva migrans in the liver and kidneys, granuloma formation, presence of intracytoplasmic eosinophilic round inclusion bodies within the hepatocytes and renal tubule as well as presence of lipid vacuoles and cholesterol crystals in the splenic parenchyma. Macroscopic and microscopic findings suggest that presence of lesions in other organ systems is highly likely in snakes with pneumonia. (Author's abstract)

**Keywords:** Veterinary medicine, Gallbladder, Histopathology, Kidney, Liver, Pneumonia, Reticulated python, Spleen

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2015,  
(Filipiniana Analytics)  
NP

***M-mode echocardiographic measurements and values in male and female Philippine native horses (*Equus ferus caballus*)***

*Pajas, Arville Mar Gregorio A. , Palou, Samantha Alexis L., Acorda, Jezi*

*Little is known about the echocardiographic measurements in the Philippine native horse. To establish baseline references for echocardiographic measurements and values for the Philippine native horses, 29 apparently healthy animals, aged one month to 10 years old with body weights ranging from 19.9-344.7 kg were used in the study. The horses were distributed by sex (15 males and 14 females) and by age (< 1 year old – 6 animals, 1-3 years old – 11 animals, and > 3 years old – 12 animals). Using a 3.5 MHz convex scanner, BM-modes of the heart were obtained through right parasternal short axis views at the level of the ventricles, atria and aorta. Echocardiographic parameters were subjected to Student t-test or one-way ANOVA and correlation analysis. Fractional shortening and ejection fraction were observed to be higher in female than in male Philippine native horses. Differences were also observed in several parameters between age groups. High correlations were found between most echocardiographic parameters and body weights in both male and female Philippine native horses. Most echocardiographic parameters in Philippine native horses were affected by age and body weight, indicating that growth and size of the horse were important factors to take into consideration when performing echocardiography. (Author's abstract)*

**Keywords:** *Veterinary medicine, Echocardiography, Heart, Philippine native horse, Ultrasound*

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*Philippine Journal of Veterinary Medicine, Volume No. 53 Issue No. 2, 79-87  
2016,  
(Filipiniana Analytics)  
NP*

***Molecular characterization and phylogenetic analysis of newcastle disease virus isolated from clinical cases of newcastle disease in commercial layer farms in the Philippines***

*Katoh, Hiromitsu , Umandal, Mel C. , Torres, Maria Immaculada P. , Lopez, Anna Luisa M. , Umali, Den*

*Newcastle Disease (ND) is an economically devastating disease of poultry. At present, limited data are available regarding the molecular characteristics of Newcastle disease virus (NDV) from the Philippines. Clinical and molecular characterizations were performed on five clinical cases of ND in vaccinated commercial layer farms from four provinces in the Philippines, namely Bulacan, Pampanga, Zamboanga del Sur and Davao Del Sur. Clinical signs observed on affected chickens were conjunctivitis, gasping, tracheal rales, facial swelling, lethargy, greenish diarrhea, torticollis and paralysis. Disease onset ranged from 21 to 124 days with mortality rates of 15 to 61%. Gross morphological lesions identified were Presence of serous exudates in the infraorbital sinuses, hemorrhagic trachea, enlarged spleen, liver and kidneys and petechial hemorrhages in the proventriculus and cecal tonsils. Nucleotide sequencing showed that all field strains were velogenic with F0 proteolytic cleavage site of <sup>112</sup>RRRKR\*F<sup>117</sup> and <sup>112</sup>RRQKR\*F<sup>117</sup> patterns. Phylogenetic analysis showed that all field NDV strains belong to class II genotype VII, subgenotypes VIIa, VIIh and VIIi. Evolutionary divergence showed that the field NDV strains were closely related (up to 99% similarity) to the newly identified subgenotypes of virulent NDVs currently emerging in Southeast Asia and the Middle East. (Author's abstract)*

**Keywords:** *Veterinary medicine, Genotype VII, Newcastle disease virus, Philippines, Phylogenetic analysis*

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***Molecular diversity of rumen methanogens in cattle in response to dietary tannin***  
Vega, Renato S.A. , Yebron, Jr., Medino Gedeun N. , Alcantara, Antonio J. , Capitan, Severino S. , Sevilla, Cesar C. , Radovan, Gondel

*The molecular diversity of rumen methanogens in cattle fed tannin rich banana leaves or supplemented with commercial tannin extract was assessed using PCR-DGGE. Primer set 0357 F-GC and 0691 R was used to amplify the methanogenic archaeal community of the rumen. A total of 17 DNA fragments were excised from DGGE gels and their nucleotide sequences were determined. PCR-DGGE band profile and nucleotide sequence analysis revealed that methanogen resembling Methanobrevibacter thaueri strain CW and Methanobrevibacter millerae strain ZA-10 are the predominant methanogens in cattle. Furthermore, feeding of tannin-rich banana leaves to cattle significantly increased blood urea nitrogen but decreased rumen fluid ammonia nitrogen (RF NH<sub>3</sub>-N) level suggesting a protective effect of tannin on feed protein and possible inhibitory effect on methanogens by limiting the supply of available hydrogen from ammonia. (Author's abstract)*

**Keywords:** *Veterinary medicine, Banana leaves, Cattle, Methanogens, Rumen, Tannin*

***Morphological and histological features of the bursa of Fabricius from non-vaccinated one month old female gamefowl chicks from hyperimmunized breeders***  
Bernardo, Francis Andrew Eugene M. , Villanueva, Abra

*The bursa of Fabricius of chickens plays an important role in early immunity, providing B lymphocytes that produce antibodies to neutralize pathogenic organisms, such as viruses and bacteria to protect the body from detrimental effects. This study aimed to determine the normal morphological and histological parameters of the bursa of Fabricius in a month old female gamefowl chicks coming from hyperimmunized breeders. The study utilized 25 gamefowl chicks from five different gamefowl farms. The results of the study across farms, show normal and uniformity of values for both morphology and histology; threshold values were obtained for each parameter and a strong positive linear relationship was observed between the weight of the chicken and the bursa of Fabricius. Immune and protective competency of the bursa started at four weeks in gamefowls. The results suggest that vaccination can be postponed up to four weeks old in case of gamefowls coming from hyperimmunized breeders. (Author's abstract)*

**Keywords:** *Veterinary medicine, Bursa of fabricius, Gamefowl, Histology, Immunization, Morphology*

**Optimized extenders for cryopreservation of buck semen for artificial insemination**

**Aquino, Flocerfida P. , Cruz, Emilio M. , Atabay, Edwin C. , Atabay, Eufrocina P. , Beltran, Ma. Asuncion G., Cruz, Libertado**

*The study was conducted to evaluate the efficiency of different nonpermeating cryoprotectants for freezing buck semen. Semen samples were collected from three healthy bucks and were evaluated for volume, color, consistency, pH, motility and concentration. Samples with 60% and above motility were allocated to the following treatments of Tris-Citric Acid-Fructose –Raffinose-Glycerol-based extenders: T1 – 5% egg yolk; T2 – 10% egg yolk; T3 – 15% egg yolk; T4 – 20% egg yolk; T5 – 2.5% goat serum; T6 – 5% goat serum; T7 – 10% goat serum; T8 – 10mg Bovine Serum Albumin (BSA); T9 – 30 mg BSA; and T10 – 50 mg BSA. Post-thawing evaluation revealed that extenders with 5% egg yolk (T1), 2.5% goat serum (T5), and 30 mg BSA (T9) yielded high rates of sperm motility and acrosome integrity. In terms of the proportion of live sperm at post thawing, 5% egg yolk was found significantly higher than 2.5% goat serum and 30 mg BSA. Moreover, cost analysis revealed that supplementation with 5% egg yolk was cheaper than with goat serum and BSA. Artificial insemination (AI) using frozen-thawed semen with 5% egg yolk resulted in 70.50% birthrate. This work demonstrates the successful production of kids from frozen buck semen enhancing the potential of AI technology for goat production. (Author's abstract)*

**Keywords:** *Veterinary medicine, Artificial insemination, Buck semen, Cryopreservation, Ultrasonography*

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2013,  
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NP*

**Performance of free-range broiler chickens under different restricted feeding regimens**

**Gaffud, Oliva M., Reyes, Joel**

*Ninety 5-week-old free-range broiler chickens were raised for six weeks to investigate the growth performance in response to different restricted feeding regimens. The birds were randomly distributed to three treatment groups: Treatment 1 - three times a day; Treatment 2 - fed twice a day; and Treatment 3 - fed once a day. Each treatment group was replicated three times with ten birds per replication. Production parameters and dressing recovery were measured and subjected to analysis of variance in a completely randomized design. The average final weight and gain in weight of broilers in Treatment 1 were higher than the other two treatments ( $P < 0.01$ ). Feed consumption and feed efficiency were higher in Treatment 1 compared to the other treatments ( $P < 0.05$ ). The dressing percentage with and without giblets did not differ significantly among the three treatment groups ( $P > 0.05$ ). No mortality was observed in all treatment groups. Birds fed thrice a day (Treatment 1) showed the highest income over feed cost, followed by Treatment 2. The results suggest that higher production and income in free range broiler chickens can be achieved by feeding thrice a day, compared to twice a day or once a day feeding. (Author's abstract)*

**Keywords:** *Veterinary medicine, Broiler, Feeding regimen, Free-range chicken, Production*

**Prevalence of dog erythrocyte antigen 1 blood group in different dog breeds of Punjab State of India**

*Randhawa, Charanjit S. , Mohindroo, Jitender , Dhaliwal, Pritpal S. , Bhat, Ri*

*Though the frequency of occurrence of the dog erythrocyte antigen (DEA) 1 system is well known in many countries, little information is available for dogs in India. The study was conducted to determine the prevalence of the DEA 1 blood group (1.1 and 1.2 subgroups) utilizing 100 1-9 years old dogs of both sexes and various breeds. Blood collected from the cephalic or saphenous vein was immediately subjected to standard DEA 1 blood typing procedure using a commercially available KABB Dog Blood Typing Kit. The prevalence of DEA 1 blood type system was observed to be 78%, of which 52% and 26% of the animals were positive for DEA 1.1 and DEA 1.2, respectively. Considerable variation was observed in DEA 1.1 and 1.2 prevalence among different breeds with Pug and German Shepherd showing the highest prevalence for DEA 1.1 and DEA 1.2, respectively. In conclusion, this study demonstrated general frequencies of DEA 1, DEA 1.1, DEA 1.2 blood types as 78%, 52% and 26%, respectively in different breeds of dogs in the Punjab State of India. (Author's abstract)*

**Keywords:** *Veterinary medicine, Blood type, Cross matching, Dog, Dog erythrocyte antigen 1, India*

**Prevalence of internal parasite infection in pigs and analysis of risk factors in smallholder pig farms in Cavite and Batangas, Philippines**

*Ducusin, Rio John T. , Padilla, Mild*

*In order to determine the prevalence and associated factors for infection of pigs with internal parasites, a cross-sectional study was undertaken in 65 smallholder farms in Cavite and Batangas, Philippines. Fecal samples were examined by flotation and sedimentation methods. Data on potential risk factors for infection were collected using pre-tested structured questionnaires and analyzed using appropriate descriptive and univariate analysis. Overall prevalence was 29.1%, with Cavite and Batangas farms having 29.6% and 28.9%, respectively. *Hyostrongylus rubidus* accounted for 13.8% of infection, followed by *Trichuris suis* and *Stephanurus dentatus*, each with 3.1%, and *Ascaris suum* and *Eimeria* spp. with 1.5% each. About 23% were infected with single parasite type and 6.1% with dual infections. None of the factors studied were associated with infection prevalence. (Author's abstract)*

**Keywords:** *Veterinary medicine, Endoparasites, Epidemiology, Philippines, Pig, Prevalence, Risk factors*

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***Production of water buffalo clone embryos using ear skin fibroblasts as donor cell in nuclear transfer***

*Atabay, Eufrocina P. , Atabay, Ed*

*The present study investigated the possibility of producing water buffalo clone embryos using ear skin fibroblasts from ear skin tissues tested for viability post collection and cryopreservation. Water buffalo ear skin samples were collected and maintained in 4°C at different time points: 12, 24, 48, 72, 96, 120 and 168 hr post-collection. After storage at specified time, tissue samples were processed for primary culture. Fibroblasts obtained from ear skin tissues were cryopreserved using different freezing procedures and were then used as donor nuclei for nuclear transfer. The maximum time lapse when ear skin fibroblast proliferation did not decrease significantly was at 120-hr post-collection (hpc). The post-thaw viability of the fibroblasts cryopreserved with the alternative rapid freezing procedures was comparable with that of the control group. The fibroblasts survived the alternative cryopreservation procedure and reached cell confluency at sub-culture. When used further for nuclear transfer, no significant differences were observed from the control group in terms of rates of cleavage and development to blastocyst, and cell numbers of the blastocyst formed. The present findings indicate that ear skin fibroblasts derived from tissues stored up to 120 hpc can be used as donor nuclei without compromising the developmental competence of the reconstructed embryos. (Author's abstract)*

**Keywords:** *Veterinary medicine, Ear skin cryopreservation, Fibroblast, Somatic cloning, Storage time, Water buffalo*

***Production performance and carcass characteristics of broilers fed diets with or without phytase supplementation***

*Lavega, Cisima P. , Manaig, Marvin Ross T. , Cu, Rodeza Kristine S. , Magpantay, Veneranda A. , Oliveros, Benito A. , Agbisit, Jr, Elpi*

*To evaluate the effect of phytase supplementation, 300 day-old broiler chicks were distributed to five treatments following a completely randomized design: T1 - Positive Control (PC); T2 - Negative Control 1 (diet with available phosphorus [P], calcium [Ca] and metabolizable energy [ME] lower than PC by 0.15%, 0.18% and 75 kcal/kg, respectively); T3 - T2 + 100 g phytase per ton of feed; T4 - Negative Control 2 (diet with available P, Ca and ME lower than PC by 0.18%, 0.23% and 95 kcal/kg, respectively); and T5 - T4 + 200 g phytase/ ton of feed. Phytase supplementation improved body weight, weight gain and feed efficiency of broilers fed the negative control diets. Significant differences among treatments were observed in % abdominal fat, % leg and % thigh. Higher income over feed and chick cost was obtained in broilers fed diets with phytase compared to those fed the negative and positive control diets. The results suggest that growth performance of broilers fed diets with lower*

specification in available P, Ca and ME is not adversely affected if phytase is added in the diet. (Author's abstract)

**Keywords:** *Veterinary medicine, Broilers, Carcass, Growth performance, Phosphorus, Phytase*

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2013,  
(*Filipiniana Analytics*)  
NP

0595

***Serological and molecular detection of newcastle disease virus from captive raptors in a wildlife rescue center in the Philippines***

*Umali, Dennis V. , Ty, Maria Sofea C. , Lastica-Ternura, Emi*

*Relatively little is known about the distribution of Newcastle Disease Virus (NDV) among raptors in the Philippines. Serological and molecular detection of NDV were performed in apparently healthy and clinically-ill captive raptors from a wildlife rescue center. Results showed that out of 42 raptors, 16 (38.11%) were positive for NDV antibodies, which include five Brahminy Kites, five White-bellied Sea Eagles, one Changeable Hawk-eagle, one Philippine Hawk-eagle, one Crested Serpent Eagle, one Black Kite, one Crested Goshawk and one Philippine Eagle. Hemagglutination inhibition (HI) NDV antibody titers were  $2^7$  to  $2^{10}$  with a geometric mean titer (GMT) of  $2^9$ . Except for minor physical injuries and non-specific lesions, all raptors did not show clinical signs of Newcastle Disease (ND) at the time of examination. Molecular detection through nested reverse transcription polymerase chain reaction (nRT-PCR) using pooled oropharyngeal and cloacal swabs showed that all raptors were negative. The presence of unusually high antibody titers, the absence of clinical signs and the negative nRT-PCR results may suggest that the raptors were exposed to virulent NDV but may have already recovered from clinical disease. The study showed that apparently healthy and clinically ill captive raptors may be infected with NDVs and that they may play important roles in the epidemiology of ND in the field. (Author's abstract)*

**Keywords:** *Veterinary medicine, Hemagglutination inhibition, Newcastle disease, Philippines, RT-PCR, Raptors*

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NP

0596

***Seroprevalence of Toxoplasma gondii antibodies in Felis catus from a tertiary public hospital***  
*Santiago-Flores, Marianne Leila A. , Chua, III, Pretextato G., Reyes, Marco*

*The study was conducted to determine the seroprevalence of antibodies against Toxoplasma gondii, a zoonotic parasite, in cats found within the vicinity of a tertiary public hospital. A total of 42 stray domestic short-haired cats of both sexes, six to 48 months of age were used in the study. The animals had no record of deworming and vaccination and no owners claimed the cats used in the study. Blood sera were tested for Toxoplasma gondii antibodies using commercially available ELISA kit. It was observed that 42.86% (18/42) cats had serologic evidence of T. Gondii infection. Of these, 33.33% (6/18) were males and 66.67% (12/18) were females. With*

regards to age, 22.22% (4/18) were juveniles while 77.78% (14/18) were mature. Neutrophilia, eosinopenia and lymphocytosis were observed in all seropositive animals. (Author's abstract)

**Keywords:** *Veterinary medicine, Cat, Domestic, Hospitals, Toxoplasmosis*

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2014,  
(*Filipiniana Analytics*)  
NP

0597

***Ultrasonographic features of experimentally-induced corneal ulcer treated with autologous serum in dogs***

*Pajas, Arville Mar Gregorio A. , Oronan, Rey B. , Acorda, Jezie A. , Reyes, Marco F. , Caneba, Judennesse At*

*Fifteen adult female 5-9 years old non-descript dogs were used to determine the ultrasonographic features of experimentally-induced corneal ulcer treated with normal saline solution, tobramycin and autologous serum (Groups A, B and C, respectively) at day 7, 14 and 21. An ultrasound machine equipped with a 7.5 MHz linear array scanner with an aid of a modified stand-off pad was utilized in this study. Upon ultrasound examination, the hyperechoic cornea, iris sphincter, anechoic anterior and posterior chamber were seen. The lens and vitreal chamber and the retina with other choroidal layers which appeared as a mesh of hyperechoic and hypoechoic structures were successfully visualized. Corneal ulceration appeared as hypoechoic with hyperechoic structure. The mean±SD central corneal thickness was 589.87±0.252 µm. Groups B and C had significantly greater decrease in corneal ulcer depth and gap at day 21 than Group A. Echo mean analysis revealed increasing echogenicity as the healing process progressed throughout the observation period and could be attributed to fibroblastic proliferation. The results show that ultrasound can be used to monitor and evaluate the healing of corneal ulcers. (Author's abstract)*

**Keywords:** *Veterinary medicine, Autologous serum, Corneal ulcer, Dog, Eye, Ultrasound*

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*Philippine Journal of Veterinary Medicine, Volume No. 54 Issue No. 1, 9-16*  
2017,  
(*Filipiniana Analytics*)  
NP

0598

***Ultrasonographic features of the heart and lungs of captive reticulated pythons (*Python reticulatus*, Schneider 1801) (Reptilia: Squamata: Pythonidae) with Granulomatous pneumonia and Myocarditis***

*Pajas, Arville Mar Gregorio A. , Acorda, Jezie A. , Lampa, Rizza Elaine B., Lastica-Ternura, Emilia*

*Twelve adult reticulated pythons diagnosed with granulomatous pneumonia and myocarditis were utilized to examine the ultrasound features of the heart and lungs using an ultrasound machine equipped with a 6.5 MHz linear array scanner. B-mode and M-mode ultrasonograms were obtained and digital analysis was conducted to calculate the echo mean values. Echocardiographic features and echo mean values were determined and compared to data on apparently healthy reticulated pythons. Higher B-mode measurements of the left atrial*



*internal diameter and circumference of pulmonary trunk, left aortic and right aortic arches were obtained. Higher M-mode values for amplitude measurements for left atrium, right atrium, sinus venosus, pulmonary trunk, left aortic artery, right aortic artery, cavum venosum and cavum arteriosum; and base measurements for all cardiac structures were also observed. Increased echo mean values indicated higher echogenicities of all the cardiac structures. Increased echocardiographic measurements were higher indicating pathologic changes. Echocardiography was found useful in detecting cardiac pathologic changes which can be associated with granulomatous pneumonia and myocarditis. Because of reverberations observed in all lung ultrasonograms, the study determined that ultrasonography cannot be used in detecting small lung lesions in cases of mild to moderate pneumonia. (Author's abstract)*

**Keywords:** *Veterinary medicine, Echocardiography, Heart, Lungs, Pneumonia, Reticulated pythons, Ultrasound*

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*Philippine Journal of Veterinary Medicine, Volume No. 53 Issue No. 2, 88-95*  
2016,  
(*Filipiniana Analytics*)  
NP

0599

***Ultrasonographic features of the kidneys in apparently healthy ostriches (*Struthio camelus*) raised in captivity***

*Acorda, Jezie A. , Bang-asan, Preci*

*Ten apparently healthy captive-bred ostriches (*Struthio camelus*), four adult females, three adult males and three juveniles, were examined to evaluate the ultrasonographic appearance and echo mean values of the kidneys using an ultrasound machine equipped with a 3.5 MHz convex array scanner. The scanner was placed in the mid-dorso-lateral area, between the rib cage and the pelvic area. Only the cranial lobe and the cranial part of the middle lobe of the kidneys were observed. The kidneys appeared as a non-homogeneous structure with hypoechoic and hyperechoic sections surrounded by a thick hyperechoic capsule. There was no distinct junction between the cortex and the medulla. The kidneys of the adult females and juveniles were more visible than those of the adult males. In female and juvenile ostriches, the left kidney was more visible than the right kidney. In juveniles, the left kidney appeared to be wider than the right kidney. In all groups, the cortex had greater echo mean values than the medulla. The transcutaneous lateral approach where the transducer was directed caudo-dorsally against the flank was shown to be an appropriate acoustic window for examining the cranial lobe and cranial part of the middle lobe of the kidneys of ostriches. (Author's abstract)*

**Keywords:** *Veterinary medicine, Echo mean, Kidney, Ostrich, Ultrasound*

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*Philippine Journal of Veterinary and Animal Sciences, Volume No. 39 Issue No. 2, 259-268*  
2013,  
(*Filipiniana Analytics*)  
NP

0600

***Ultrasonographic findings in the liver, gallbladder and kidneys of captive reticulated pythons (*Python reticulatus*, SCHNEIDER, 1801) (REPTILIA: PYTHONIDAE) with pneumonia***

*Pajas, Arville Mar Gregorio A. , Acorda, Jezie A. , Lastica, Emilia A. , Samaniego, Cherry*

*Ultrasonography was performed using a 6.5 MHz linear array scanner in order to determine the ultrasonographic features of the liver, gallbladder and kidneys of 12 captive reticulated pythons with pneumonia in comparison with macroscopic findings. The organs were examined using an ultrasound machine equipped with a 6.5 MHz scanner and echo mean values were calculated. The liver appeared elongated with a hypoechoic parenchyma and a large anechoic central hepatic vein with a hyperechoic wall. The gallbladder was observed as a large elliptical structure with a hypoechoic wall and an anechoic lumen. The kidneys appeared as hypoechoic granulated, elongated structures with the right kidney located more cranially than the left. No differences were observed between ultrasonographic and gross measurements of the different organs. Histogram analysis showed that there was a distinct increase in the Emean values of all structures, except the kidneys which showed decrease in Emean values. The results suggest that pneumonia causes changes in the echogenicity of the liver, gallbladder and kidneys in reticulated pythons. (Author's abstract)*

**Keywords:** *Veterinary medicine, Echo mean, Gallbladder, Kidneys, Liver, Pneumonia, Python, Ultrasound*

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*Philippine Journal of Veterinary and Animal Sciences, Volume No. 41 Issue No. 2, 2015, (Filipiniana Analytics) NP*

0601

***Ultrasound features of the kidneys, urinary bladder, ovarian follicles and vaginal sacs of female water monitor lizard (Varanus marmoratus, Weigmann, 1834)***

*Lastica, Emilia A. , Acorda, Jezie A. , Prades, Rac*

*Four apparently healthy female water monitor lizards (Varanus marmoratus), weighing 0.8-3.8 kg, were examined using an ultrasound machine equipped with a 5.0 MHz linear array scanner to determine the ultrasound appearance, dimensions and echo mean values of the urogenital organs. The kidneys of the varanids were observed caudal to the ovarian follicles, appearing as elongated structures with hypoechoic parenchyma and hypoechoic to hyperechoic interlobular spaces. The urinary bladder appeared as an elongated anechoic structure with hypoechoic wall. Two out of four female varanids showed ovarian follicles located laterally on both sides within the caudal half of the animal's body. Both pre-vitellogenic and vitellogenic stages were observed. Pre-vitellogenic follicles appeared round and anechoic while vitellogenic follicles appeared hypoechoic to hyperchoic in the ultrasonograms. The vaginal sacs appeared as anechoic tubular structures with hypoechoic walls. Echo mean values correlated well with the echogenicity of the different organs. The results of the study can be used for comparison with the ultrasound features of the diseased urogenital organs in the water monitor lizards. (Author's abstract)*

**Keywords:** *Veterinary medicine, Kidney, Monitor lizard, Ovarian follicle, Urinary bladder, Vaginal sac, Varanus*

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*Philippine Journal of Veterinary and Animal Sciences, Volume No. 39 Issue No. 1, 115-124 2013, (Filipiniana Analytics) NP*

**ZOOLOGY**

0602

## ***Rapid assessment and feeding guilds of birds in selected rubber and oil palm plantations in North Cotabato***

*Bretaña, Bryan Lloyd P. , Agduma, Angelo R. , Tanalgo, Krizler C. , Bello, Violeta P. , Casim, Lothy F. , Achondo, Marion John Michael M., Mancao, Liezl S. , Salem, James Gregor*

*The degradation of tropical rainforests in Mindanao has augmented the interest in the potential value of commercial plantations for the conservation of biodiversity. However, it is not yet apparent how this type of land use affects forest bird fauna since there were no studies conducted yet to document birds in commercial plantations, particularly in North Cotabato. Hence, this study was done to determine occurrence of birds in Carumba Oil Palm Plantation (COPP) and Platinum Rubber Plantation (PRP) in North Cotabato. A combination of mist netting and transect walk technique had recorded 30 birds species belonging to 6 orders, 19 families and 26 genera. Passeriformes was the most represented order having 20 species, six of which were country endemics and two were Mindanao faunal region endemics. Noteworthy was the presence of one threatened species (*Alcedo argentata*) from PRP with a vulnerable conservation status. Results indicate that oil and rubber agro-forestry systems contribute to conservation efforts by serving as habitats to endemic bird species. In addition, major feeding guilds of birds were also determined. Insectivorous species predominated in both areas. This high number of insectivorous species delivers a natural pest control service in the plantations which is beneficial to farmers and owners. (Author's abstract)*

**Keywords:** *Zoology, Bird fauna, Endemism, Feeding guilds, Rubber plantation, Oil palm plantation, North Cotabato*

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NP*

0603

## ***SNARE protein-dependent glutamate release from astrocytes***

*Doyle, Robert T. , Li, Nianzhen , Araque, Alfonso, Haydon, Phili*

*We investigated the cellular mechanisms underlying the Ca<sup>2+</sup>-dependent release of glutamate from cultured astrocytes isolated from rat hippocampus. Using Ca<sup>2+</sup> imaging and electrophysiological techniques, we analyzed the effects of disrupting astrocytic vesicle proteins on the ability of astrocytes to release glutamate and to cause neuronal electrophysiological responses, i.e., a slow inward current (SIC) and/or an increase in the frequency of miniature synaptic currents. We found that the Ca<sup>2+</sup>-dependent glutamate release from astrocytes is not caused by the reverse operation of glutamate transporters, because the astrocyte-induced glutamate-mediated responses in neurons were affected neither by inhibitors of glutamate transporters (*l*-threo-hydroxyaspartate, dihydrokainate, and *l*-trans-pyrrolidine-2,4-dicarboxylate) nor by replacement of extracellular sodium with lithium. We show that Ca<sup>2+</sup>-dependent glutamate release from astrocytes requires an electrochemical gradient necessary for glutamate uptake in vesicles, because bafilomycin A1, a vacuolar-type H<sup>+</sup>-ATPase inhibitor, reduced glutamate release from astrocytes. Injection of astrocytes with the light chain of the neurotoxin Botulinum B that selectively cleaves the vesicle-associated SNARE protein synaptobrevin inhibited the astrocyte-induced glutamate response in neurons. Therefore, the Ca<sup>2+</sup>-dependent glutamate release from astrocytes is a SNARE protein-dependent process that requires the presence of functional vesicle-associated proteins, suggesting that astrocytes store glutamate in vesicles and that it is released through an exocytotic pathway. (Author's abstract)*

**Keywords:** *Zoology, Astrocyte-neuron signaling, Astrocyte calcium waves, Transmitter release, Botulinum neurotoxin, Bafilomycin, Exocytosis, SNARE protein, V-ATPase*

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*2000,*  
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## SUBJECT INDEX TO FILIPINIANA S&T PUBLICATIONS

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The analgesic effects of supraspinal  $\mu$  and  $\delta$  opioid receptor agonists are potentiated during persistent inflammation Hammond, Donna L. , Hurley, Robert W.. **JNeurosci The Journal of Neuroscience**, 2000 February, 20(3):1249-1259 NP

### $\mu$ OPIOID RECEPTOR

The analgesic effects of supraspinal  $\mu$  and  $\delta$  opioid receptor agonists are potentiated during persistent inflammation Hammond, Donna L. , Hurley, Robert W.. **JNeurosci The Journal of Neuroscience**, 2000 February, 20(3):1249-1259 NP

### 192IGG-SAPORIN

Nerve growth factor (NGF) augments cortical and hippocampal cholinergic functioning after p75NGF receptor-mediated deafferentation but impairs inhibitory avoidance and induces fear-related behaviors Thal, Leon J. , Ramirez, Gilbert A. , Winkler, Jürgen , Waite, Jerene J. . **JNeurosci The Journal of Neuroscience**, 2000 January, 20(2):834-844 NP

### 2-DEOXYGLUCOSE

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Kv4.2 mRNA abundance and A-Type K<sup>+</sup> current amplitude are linearly related in basal ganglia and basal forebrain neurons Surmeier, James , Baranauskas, Gytis , Tkatch, Tatiana. **JNeurosci The Journal of Neuroscience**, 2000 January, 20(2):579-588 NP

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### AB AFFERENTS

Synaptic reorganization in the substantia gelatinosa after peripheral nerve neuroma formation: aberrant innervation of lamina II neurons by AB afferents Ishikawa, Kuniko , Kohama, Ikuhide, Kocsis, Jeffery D. . **JNeurosci The Journal of Neuroscience**, 2000 February, 20(4):1538-1549 NP

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Neuronal–Glial interactions mediated by Interleukin-1 enhance neuronal acetylcholinesterase activity and mRNA expression Mrak, Robert E. , Barger, Steven W. , Sheng, Jin G. , Kang, Jinsong , Liu, Ling , Li, Yuekui, Griffin W. Sue T. . **JNeurosci The Journal of Neuroscience**, 2000 January, 20(1):149-155 NP

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#### ACTIVITY-DEPENDENT MODULATION

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Effects of conventional white needle acupuncture and aquapuncture on mastitis and milk production in dairy cattle Rayos, Antonio A. , Daga, Jasmine D., Acorda, Jezie A. . **Philippine Journal of Veterinary and Animal Sciences**, 2013, 39(1):133-140 NP

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The M1 muscarinic agonist CI-1017 facilitates trace eyeblink conditioning in aging rabbits and increases the excitability of CA1 pyramidal neurons Disterhoft, John F. , Welty, Devin , Schwarz, Roy D. , Oh, Matthew , Preston, Alison R. , Weiss, Craig. **JNeurosci The Journal of Neuroscience**, 2000 January, 20(2):783-790 NP

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	0026	Bauyot, Marleonie M.	0128		0566
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Masangkay, Joseph S.	0578	Bermudez, Jennifer B.	0575	Garcia, Cristina C.	0037
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Merca, Florinia E.	0009	Buenavista, Dave P.	0265	Gicana, Karlo Romano B.	0551
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		Tan, Hazel Alena	0029	Arcadio, Mark	0129
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Forten, Ronald Regan	0045	Lerma, Juan	0360	Opiso, Einstene M.	0045
Gador, Charmelaine	0160	Luis, Edwin S.	0025	Oronan, Rey B.	0597
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Ekker, Marc	0364	Giuffrida, Raffaella	0337	Iadecola, Costantino	0315
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Enriquez, Howard M.	0346	Goswami, Subodh Chandra	0391	Jiang, Dongmei	0412
Everitt, Barry J.	0339	Gould, Tom W.	0363	Jiang, Guisen	0438
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Faller, Wilfredo C.	0048	Gruss, Peter	0072	Jones, Matthew	0113
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Kaplan, David R.	0278	Gonzalo DV.		Manoto, Anthony	0226
Karim, M. R.	0244	Lo, Tom Edward N.	0529	Oliver B.	
Kaspar, Brian	0210	Lohrum, Marion	0505	Mariani, Jean	0517
Kater, Stanley B.	0508	Long, Qiaoming	0364	Marshall, John F.	0352
Keller, Asaf	0519	Lopa, Ramon	0307	Marti, Andreas	0293
Khoyi, Mohammad	0382	Antonio B.		Mat Ali, Siti Aishah	0349
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Mackenzie D.	0170	Lu, Michael Adrian	0200	McMahon, Stephen	0359
Kirino, Takaaki	0466	L.		B.	
Kittler, Josef T.	0069	Lu, Wei-Yang	0331	McReynolds, John	0355
Knight, David L.	0296	Lubos, Lesley C.	0085	S.	
Kolodziej, Peter A.	0501	Lucero, Randy T.	0549	Mead, Larissa A.	0425
Kraus, Nina	0255	Lum, Chee Lun	0404	Meeren, Hanneke	0399
Kueng-Hitz, Nicole	0293	Lund, Raymond D.	0496	K. M.	
Labes, Monika	0378	Lusay, Joseph Pet	0117	Mende, Rosanna	0549
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Lambert, Stephen	0087	Lyons, Ernest	0278	Mendoza, Daniel	0525
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Landis, Story C.	0325	Madhusudan,	0342	Mendoza, Daniel	0531
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Lauri, Sari E.	0064	Magramo, Melchor	0084	Michael, Gregory J.	0359
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		Manganar, Maria	0226	Moss, Stephen J.	0069



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Ami, Mazita	0463	A.		Ringo G.	0454
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B.		Artates, Anne	0354	Baker, David A.	0352
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	0265	Asai, Akio	0466	Balaga, Paolo	
Ampong, April	0226	Ashano, E.C	0241	Angelo Gica.	0497
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Andreassen, Ole A.	0412	Askari, Mohamad	0172	Kenneth	0370
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	0052	Atabay, Edwin C.	0593	Banke, T. G. D.	0310
Anuar, Khairullah	0328	Atabay, Eufrocina	0589	Banks, Matthew I.	0387
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	0158	Boncalon, Rhoda	Cabance, Ryan E.	0533
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Benabise, Edgar V.	0033	Bowie, H.-K.	Cachuela, Joseph E.	0489
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Bestil, Lolito C.	0019	Buffelli, Mario	Carlson, Greg C.	0519
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	0451	Chazal, Geneviève	0309	Constante, Jesalyn L.	0032
	0506	Chen, Aileen	0434		
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Casalan, Florie C.	0117	Chowdhury, Ahsan Raja	0404	Cruz, Dennis E.	0191
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	0446	Chua, Antonio H.	0233	Cruz, Melanie Grace Y.	0254
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	0249	Chua, Antonio H.	0350		
		Chua, Antonio H.	0383	Cu, Rodeza Kristine S.	0016
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De Guzman, Mark P.	0134	Diefenbach,	0508	Eguia, Peter Mark	0562
		Thomas J.		R.	
De Guzman, Thanh Vu T.	0523	Dimaguila, Gerardo	0513	Eldadah, Basil A.	0490
		Aniano C.		Elio, Angela	0227
de la Cruz,	0418	Diola, Anthony	0440	Corazon B.	
Rhodieleen Anne R.		Ashly G.		Ellevera, April Ann	0220
De Leon, Marco	0181	Dittman, Jeremy S.	0381	A.	
Alejandro D.		Dobi, Albert	0499	Emnace, Ivy C.	0029
De Silva-Leonardo,	0348	Dolojan,	0006	Emverda, Floricel	0341
Jennifer		Fredisminda M.	0018	M.	
Decena, Krystalene S.	0010		0031	Enriquez, Anjelane	0410
		Dolojan,		M.	
Defensor, Joel P.	0397	Fredisminda M.	0035	Ernst, Alan F.	0507
Del Cano, Ser	0200	Dolojan,		Espina, Edzen A.	0454
Christian R.		Fredisminda M.	0039	Estanero, Romeo A.	0185
del Mundo, Daryl	0232	Dolojan,		Estimar, Ruth S.	0307
Anne A.		Fredisminda M.	0568	Estolano, Patrick	0233
Del Rosario, Mike	0008	Dominguez, Jorge		Joseph L.	
V.		Michael D.	0517	Estrada, Ronald D.	0219
dela Cruz, Charisse	0170	Doughty, Martin		Estrella, Rogelio	0160
C.		Doydora, Marianito	0001	Eustaquio, Maristel	0095
Delos Trinos,	0035	M.	0426	D.	
Cecilia H.		Drisdell, Renaldo C.	0333	Everling, Stefan	0427
Delovino, Kirt	0373	Dubinsky, Janet M.	0304	Falahat, Alireza	0192
Areis	0538	Duckett, S. G.	0563	Farias-Eisner,	0532
		Ducusin, Rio John		Robin	
Demavivas, Windel	0118	T.	0592	Fawcett, James P.	0345
Jane T.		Ducusin, Rio John			

Fegade, Vasundhara	0236	Futter, Marie	0113	Gicana, Karlo	0552
Fekete, Csaba	0257	Gabule, Jessa May	0542	Romano B.	0553
Felix, Elmer S.	0037	S.			0572
Fern, Robert	0473	Gaffud, Oliva M.	0590		0337
Fernando, Adrian F.	0264	Gallardo, Susan M.	0132	Giffard, Rona G.	0472
	0281		0142	Giszter, Simon F.	0240
Fernando, Adrian F.	0435	Gallardo, Susan M.	0162	Gladun, Anatoly	0217
Fernando, Edwino	0207	Gallo, Gianluca	0507	Go, Ma. Stephanie	0161
S.		Galvan, Grace	0344	C.	0516
Fernando,		Naomi B.		Gobaco, Bryan	0248
Lawrence Anthony	0144	Garcia, Cherissa A.	0557	Godde, Ben	0509
T.		Garcia, Cherissa A.	0576	Gold, Joshua I.	0475
Ferster, David	0411	Garcia, Gemerlyn	0037	Goldberg, David H.	0488
Fickbohm, David J.	0082	G.		Golosino, Ernesto	0198
Fillone, Alexis M.	0141	Garcia, Karlo	0148	O.	0146
Finn, John T.	0063	Roman C.		Gong, Yun H.	0238
Fiorica-Howells,	0500	Garcia, Laurence	0295	Gonzales, III,	0526
Elena		Garcia, Ronald O.	0048	Arthur	0026
Flaisch, Tobias	0408	Gargoles, Hazel M.	0105	Gopez, Alfred K.	0303
Flanagan-Cato,	0343	Garzon, Marilyn U.	0128	Goyal, Shivangi	0339
Loretta M.		Gascon, Cecilia N.	0048	Gozo-dy, Estelita	0426
Fleischhauer,	0097	Gascon, Mervin G.	0521	Gragasin, Richard	0293
Richard			0522	Joseph T.	0112
Flores, Marianne	0074	Gasendo, Cherie D.	0110	Graham, Margaret	0091
Leila S.		Gaspillo, Pag-asa		E.	0361
Flores, Mariz Kay	0116	D. Shim, Hojae	0145	Granon, Sylvie	0356
M.		Yang, Shang-Tian		Green, William N.	0384
Florida, Kristine	0229	GÃ¼nhan-Agar,	0495	Grimm, Christian	0453
Ruth V.		Emine		Gualvez, Lloyd	0508
Fong, Voon Hoong	0385	Gelera, January E.	0480	Jason H.	
Formanez, Andrie	0540	Gellada, Lorna D.	0084	Guevara, Verman	
Jeremy		Gendeh, Balwant	0349	G.	
Francisco, Karlo	0226	Singh		Guevarra, Patrick	
Misael N.		Gendeh, Balwant	0437	John	
Franken, Paul	0524	Singh		Guintu, Ferdinand	
Freeman, John H.	0324	Gendeh, Balwant	0487	Z.	
Fricker, Lloyd D.	0369	Singh		Gul, Saima	
Froc, David J.	0401		0528	Gumban, Ma.	
Fukuda, Takaichi	0357	Gerstner, Andrea	0415	Theresa L.	
Furukawa, Shigeto	0300	Ghosh, Debangshu	0391	Guthrie, Peter B.	



Gutierrez, Alma Maria Jennifer	0160	Hurtada, Julienne Maria Undine Paz A.	0011	Kandasamy Katupitiya, Jayantha Calilung, Edwin	0194
Gutierrez, Rene Louie C.	0443	Husain, Salina	0487	Katz, Paul S.	0082
Gutierrez, Ruby Lyn V.	0130	Husbands, Phil	0353	Kawaguchi, Yasuo	0319
Haghighi, Ali Pejmun	0417	Husin Athar, Primuharsa Putra Sabir	0365	Kelley, Darcy B.	0066
Hamizan, Aneeza Khairiyah W.	0402	Hussain, Syed Majid	0530	Kermer, Pawel	0378
Hammond, Donna L.	0263	Hyseni, S.	0212	Khater, H.M.	0168
Harris, Kerri-Lee	0501	Ibanez, Jayson C.	0051	King-Chao, Nikki Lorraine Y.	0271
Hartman, Vesta N.	0282	Ibay, Emmanuel L.	0409	King-Chao, Nikki Lorraine Y.	0386
Hassel, Björn	0429	Ingram, Susan L.	0266	KlÄ¶cker, Nikolaj	0378
Hawson, Frederick Y.	0269	Ishikawa, Kuniko	0515	Klivenyi, Peter	0412
Hawson, Frederick Y.	0538	Iwasaki, Shinichi	0323	Knudsen, Eric I.	0248
Hayashi, Yuichiro	0121	Japos, Genaro V.	0085	Kohama, Ikuhide	0515
Herbas, Maureen May T.	0548	Japos, Genaro V.	0125	Kolls, Bradley J.	0071
Hernandez, Josefino G.	0221	Jarcia, Emma G.	0041	Koohdar, Valiollah	0579
Herrera, María T.	0360	Johnson, Juliette	0503	Kosaka, Toshio	0357
Hibiya, Kazuaki	0178	Johnson, Kenneth O.	0504	Kreitzer, Anatol C.	0381
Higashijima, Shin-ichi	0536	Johnstone, Louise E.	0399	Kreitzer, Anatol C.	0414
Holgado, Jan Warren A.	0277	Jose, Reizl P.	0056	Kubota, Yoshiyuki	0319
Holtzman, David M.	0088	Juan, Jayson J.	0023	Kumar, Shanta M.	0434
Honorio, Moses Gil F.	0003	Jungao, E. A.	0555	Kumari, Laxmi	0559
Horn, John P.	0494	Kabiling, Wilfrido D.	0149	Laaris, Nora	0519
Hotta, Yoshiki	0536	Kahn, Dianna	0495	Labatos, Jr., Bonifacio D.	0204
Hsiung, Shu-chi	0284	Kalanov, Temur Z.	0245	Lacar, Honorina L.	0135
Hunter-Ensor, Melissa	0258	Kalita, Dimbeswar	0246	Lachyankar, Mahesh B.	0087
Hurley, Robert W.	0263	Kane, Justin K.	0431	Lagnado, Leon	0094
		Kaneez, Fatima Shad	0384	Lagura, Elaine Marie A.	0275
		Kargo, William J.	0472	lal Shrestha, Bikash	0376
		Karila, Paul	0494	Lam, Ying-Wan	0441
		Kathiresan,	0054	Lamano, Ronald John L.	0002
				Lambio, Angel L.	0004

	0028	Leveroni, Catherine	0425	Luardo, Kim T.	0548
	0075	L.		Lubos, Lesley C.	0070
Lampa, Rizza		Li, Ming D.	0431		0102
Elaine B.	0598	Li, Nianzhen	0603	Lubos, Lesley C.	0125
Lamsa, Karri	0064	Li, Richard C.	0161	Lukasiewicz, Peter	
Landmesser, Lynn		Li, Shuxin	0407	D.	0355
T.	0449	Li, Xiaoshen	0336	Lunar, Bernardo C.	0093
Langreo, Nathalie		Li, Yuekui	0430	Luu, Phan	0408
Grace C.	0119	Licuan, Daphne A.	0564	Luzano, Dafoodil	
Laoag, Alexander		Ligon, Jona Minette	0334	O.	0220
T.	0356	E.		Lynch, Gary	0452
Lapa, Ma. Mayla		Lim, Aimee	0406	Maala, Ceferino P.	0580
Imelda M.	0214	Caroline E.		Macapundag,	
Lapa, Ma. Mayla		Lim, Jr., Victor P.	0555	Qamarah R.	0440
Imelda M.	0295	Lim, KWilliam S.	0373	Macasaet, Mary	
Lapena, Jose		Lim, Tanya	0190	Ann V.	0470
Florencio F.	0281	Lim, William S.	0230	Madhusoodanan,	
	0377	Lim, William S.	0483	Ramakrishnan	0104
Lapira, Edzel R.	0200	Lin, Aihong	0546	Madrid, Jeanne O.	0534
Lara, Hasmin		Liu, Kuo-peing	0284	Magbojos, Carina	
Hannah R.	0461	Liu, Ling	0430	R.	0456
Lastica, Emilia A.	0040	Liu, Philip Lance A.	0374	Magday, Jr., Joel C.	0050
	0584	Llaguno, Erickson	0174	Magill, Peter J.	0484
Lastica, Emilia A.	0600	L.		Magpantay,	
Lastica, Emilia A.	0601	Llanes, Erasmo	0406	Veneranda A.	0016
Lastica-Ternura,		Gonzalo DV.		Magpantay,	
Emilia A.	0595	Lobite, Neil Jun S.	0085	Veneranda A.	0017
Lastica-Ternura,		Lopa, Ramon	0529	Mahilum, Jofi	
Emilia A.	0598	Antonio B.		Valdehueza	0218
Lauterborn, Julie C.	0452	Lopez, Anna Luisa	0586	Malabanan, Nelson	
Lautermilch,		M.		B.	0557
Nathan J.	0481	Lopez, Jr., Rogelio	0028	Malabanan, Nelson	
LÃ©grÃ©di,		V.		B.	0576
GÃ©bor	0257		0075	Malabrigo, Jr.,	
Le, Trung-Thanh	0237	Lopez-Molina, Luis	0524	Pastor L.	0098
Lee, Seungbok	0501	Loquellano, Ma.	0105	Maligat, Arielle	
Legaspino, Requel	0547	Corazon S.		Karolina L.	0567
Legault, Mark	0294		0108	Mallamaci,	
Legendre, Pascal	0476	Lozano, Emiliana J.	0219	Antonello	0072
Lein, Edward S.	0474	Lozano, Relson B.	0551	Mallari, Rachelle P.	0053
				Mamounas, Laura	0278

A.		Mercado-Evasco,	0308	Torio, Manuel	
Manns, Ian D.	0330	Rachel T.		CSTIFDP Research	
Marchand, Sophie	0079	Mercurio, Sara	0072	Team, Santelices,	
Marco, Deanna Joy	0569	Mermelstein, Paul	0311	Myrna A. Vargas,	
M.		G.		Sonia R. Padilla,	
Marcos, Kizzy T.	0512	Metillo, Ephrime B.	0547	Vicente G.	
Mardan, Faizal T.	0526	Meyer, Ronald L.	0071	Villacorta, Christian	
Marence, Miroslav	0165	Miano, Rommel S.	0099	V. Tubato, Marlon	
Maridable, Julius B.	0188	Milbrandt, Jeffrey	0433	Salvador, Edmond	
Maroteaux, Luc	0500	Miraj, M.	0244	Torio, Soni	
Martens, David J.	0090	Mirando, Jevie S.	0189	Mosuro, G.O.	0211
Martin, Ernesto A.	0023	Mirasol, Joy M.	0049	Muddebihal, M. H.	0243
Martin, Richard	0007	Mirasol, Jr., Felix S.	0049	Mukherjee, Ankur	0280
Martinez, Norberto	0326	Mizoguchi,		Munoz, Douglas P.	0427
V.		Kazushige	0297	Munoz, Jose Co	0186
	0450	Mohagan, Alma B.	0057	Murphy, P. C.	0304
		Mohagan, Alma B.	0058	Musngi-Paras,	0464
Martinez, Norberto	0480	Mohagan, Alma B.	0059	Claudine Ann	
V.		Mohagan, Alma B.	0060	Myhr, Karen L.	0055
Masagca, Jimmy T.	0005	Mohagan, Dave P.	0060	Naguit, Ma. Rio A.	0208
	0030	Mohamed, Diyana	0291	Nahial, Donnah D.	0106
	0095	Molina, Helen A.	0561		0109
	0124	Momiyama, Akiko	0323	Nakamura, Yuki	0046
	0203	Monleon, Arnolfo	0004	Nakanishi, Hiroshi	0262
Matawaran,	0567	M.		Nalangan, Ma. Joan	0539
Veronica A.		Montanano,	0171	Nemis	
Mattson, Mark P.	0457	Rosemarie L.		Nasara, Meredith Y.	0183
Matubis, Jacob S.	0479	Moral, Sarah D.	0299	Nasir, Abd Majid	0413
Matveev, Victor	0372	Morales, Minerva I.	0030	Md	
MÃ©tin, Christine	0380	Morales, Minerva I.		Navarro, Lariza G.	0575
MÃ¶ller, Thomas	0473	Araojo, Aurora E.		Nehring, Ralf B.	0428
McFarlane, Sarah	0491	Tribiana, Estrella T.		Neisewander, Janet	0352
McKinzie, Audra	0369	Vargas, Sonia R.	0124	L.	
A.		Brillante, Socorro		Nemeroff, Charles	0296
Mena, Manolo G.	0159	T. Tolentino, Perla		B.	
Mena, Marie	0159	A. Prolles,		Neri, Donna Lou E.	0223
Stephanie S.		Victoriano A.		Nicholson, Daniel	0324
Menes, Carmen C.	0043	Morales, Minerva I.		A.	
Mercado, Ma.	0549	Tribiana, Estrella T.	0005	Nicol, Trent	0255
Dolores D.		Arcilla Jr., Ricardo		Nicolas, Karina	0561
		V. Tumaque, Pedro		Marie G.	

	0575		0447	Panganiban,	0510
Nieves, Cristina S.	0421	Ontoy, Dexter S.	0126	Windolyn D.	
Niwa, Kiyoshi	0315	Operta, M,	0212	Papa, II, Enrique C.	0289
Noda, Mami	0262	Opiso, Einstene M.	0045	Papadopoulos,	0337
Noebels, Jeffrey L.	0458	Opulencia,	0230	Marios C.	
Nogodula, Judee N.	0119	Alejandro P.		Paras, Edrian P.	0012
Novak, Kristine D.	0363	Oreta, Andres	0151	Pareta, Kuldeep	0179
Nower, Naushin	0239	Winston C.		Pareta, Upasana	0179
NuÑ±eza, Olga M.	0083	Orlov, Sergey	0042	Parilla, Xirxiz Vin	0489
NuÑ±eza, Olga M.	0209	Oronan, Rey B.	0562	C.	
Nwoha, Rosemary			0564	Parsadanian,	0488
I. O.	0560	Orong, Denise O.	0129	Alexander S.	
Obra, Rocel Joy C.	0106		0471	Parsons, Sarah	0325
Ocbian, Magdalena		Osman, Sabah,	0021	Pascua, Julmarie	0110
M.	0313	Ouppara, Nipa S.	0550	Claire C.	
Ogata, Kazuo,	0206	Owoyemi,	0577	Pascual, Ma.	0234
Olano, Jr.,		Adedoyin O.		Victoria P.	0477
Servillano Sb.	0135	Oye, N. D.	0235		
Olano, Jr.,		Pacia, Adeline A.	0199	Pascual, Ma.	0478
Servillano Sb.	0182	Padilla, Mildred A.	0563	Victoria P.	
	0184	Padilla, Mildred A.	0583	Pasia, Jasmen S.	0128
Oliveros, Maria			0592	Passetti, Filippo	0339
Cynthia R.	0002	Padua, Paula	0483	Paternain, Ana V.	0360
Oliveros, Maria		Francezca		Patricio, Jose	0201
Cynthia R.	0558	Padua, Roberto N.	0126	Hermis P.	
Olumide, Busari		Pajas, Arville Mar	0551	Payne, John A.	0400
Afis	0165	Gregorio A.		Paz, Sherryl L.	0083
Olveda, Mildred B.	0392	Pajas, Arville Mar	0585	Pearce, Robert A.	0336
Olveda. Mildred B.	0520	Gregorio A.		Pearce, Robert A.	0387
Omamegbe, Joseph		Palacpac, Eric P.	0003	Pelayo, Jerald L.	0340
O.	0560	Palkovits, Miklos	0499	Peralta, Rommel G.	0014
Omosanya, K.O.	0211	Palompon, Daisy	0214	Pereda, Alberto	0423
Ongkiko, Aileen		Palompon, Daisy	0229	Pereira, Edna F. R.	0432
Grace M.	0144	Palompon, Daisy	0419	Perez, Juveneil	0044
Onofre, Rubiliza			0535	Eissyd J.	
DC.	0335	Palou, Samantha	0585	Pernia, NiÑ±a Eliza	0329
Onofre, Rubiliza		Alexis L.		R.	
DC.	0421	Palva, J. Matias	0064	Petralia, Ronald S.	0322
Onofre, Rubiliza		Pangan, Normita S.	0268	Philippides,	0353
DC.	0443			Andrew	

Picardal, Jay P.	0099	Ramirez, Gilbert A.	0422	Robinson, Phillip J.	0283
Pilaro, Karl Ezra	0186	Ramirez, Jr.,	0375	Roces, Ritzmer Jay	0111
Pineda-Henson,	0133	Ricardo L.	0482	Roces, Susan A.	0152
Ruby			0510	Roco, Irene	0541
Pirvola,Ulla	0486			Rodriguez, Ignacio	0438
Polinsky, Michael	0370	Ramirez, Ray	0058	R. R.	
Pollock, Natashka	0491	Kristoffer Casio		Rodriguez, Tessie J.	0231
S.				Rogushina, Julia	0240
Powell, Andrew D.	0445	Ramos, Arnulfo B.	0405	Roldan, Rodante A.	0215
Prades, Rachel B.	0040	Rances, Karen	0287		0249
	0601	Adiel D.		RomprÃ©, Pierre-	0279
		Ranjit, Peter	0342	Paul	
Preston, Alison R.	0073	Rao, Srinivas G.	0321	RomprÃ©, Pierre-	0294
Prevette, David	0363	Rattan, Kamal Nain	0395	Paul	
Pring, Cecilia C.	0541	Raymond, Clarke	0115	Romualdez, Joel A.	0403
Prinsen, Clemens F.	0416	R.	0582		0446
M.		Rayos, Antonio A.	0301		0469
Promentilla, Shella	0335	Reddy, L.S.S.	0301		0493
May A.		Reddy, Sai		Rosenbaum,	0332
Provencio, Ignacio	0438	Satyanarayana	0414	Tamara	
Puertollano,	0187	Regehr, Wade G.	0490	Rosenblum, Kobi	0113
Azucena A.		Ren, RenÃ©e F.	0013	Rossi, Susana G.	0398
Puzon Nacu,	0157	Reyes, Francis	0590	Roxas, Domingo B.	0571
Debbie Ann		Carlo C.	0462	Roxas-Dimaano,	0173
Qian, Jing	0458	Reyes, Joel L.	0091	Maria Natalia	
Qiu, Jian Hua	0466	Reyes, Manuelito	0596	Royer, Sebastien	0514
Quimpo, Fra-And	0089	M.	0597	Safo, Patrick	0332
Timothy		Reyes, Marco F.	0224	Saggau, Peter	0253
Quirog, Liza M.	0024	Reyes, Marco F.	0251	Saha, Somnath	0358
Quiros, Edwin N.	0150	Reyes, Niel	0116	Sakakibara, Shin-	0046
Rabacchi, Sylvia A.	0288	Khangel S.	0120	ichi	
Rabo, Justin	0403	Reyes-Quintos,	0348	Sakthivel,	0054
Iohanne Siy		Maria Rina T.	0462	Kollimalai	
Radovan,	0587	Ribo, Annabelle A.	0103	Salau, T. A.O.	0155
Gondelina A.			0261	Salazar, Carlita M.	0197
Rafael, Dune Vienis	0108	Ricalde, Rosario R.	0338	Salces, Agapita J.	0001
Karen N.		Ricalde, Rosario R.		Salces, Agapita J.	0024
Rafuse, Victor F.	0449	Rivero, Gilda C.		Salces, Agapita J.	0027
Raju, M.K.	0543	Robberecht, Wim		Salces, Caro B.	0027
Raju, M.K.	0544	Robertson, Brian			
Raju, M.K.	0545				

Salinas, Michael Luke T.	0267	Selda, Edison A.	0167	Smith, Jenifer C.	0527
Salpin, Ansarie P.	0464	Selimi, Fekrije	0517	Son, Young-Jin	0459
Salvador, Isabel F.	0006	Sen, Indranil	0280	Soriano, Ronaldo G.	0326
Salvedia, Claire B.	0062	Sen, Sharmila	0358	Soriano, Virginia J.	0174
Samaniego, Cherry Ann A.	0584	Sensi, Stefano L.	0260	Southan, Andrew P.	0338
	0600	Senut, Marie- Claude	0210	Spitzer, Nicholas C.	0481
Samson, Emmanuel S.	0289	Seva, Rosemary R.	0156	Squire, Larry R.	0581
San Agustin, Maria Luz M.	0274		0195	Srinivasa, G.	0243
Sanada, Kamon	0121	Sevilla, Cesar C.	0034	Stauffenberg, Beate	0516
Sang, Dinh Thanh	0206	Sevilla, Cesar C.	0587	StÃ¼hmer, Thorsten	0364
Sanger, Terence David	0367	Shahrul, Hitam	0328	Stienekemeier, Martina	0371
Sans, Nathalie	0322	Shaikh, Sadique	0236	Stuart, Greg J.	0252
Santiago, Arthur Pius P.	0153	Shanabrough, Marya	0081	Stys, Peter K.	0407
Santos, Ervin S.	0150	Sharma, Arvind Kumar	0559	Suadicani, Sylvia O.	0379
Sariana, Lalaine G.	0077	Shatz, Carla J.	0474	Suba, Sheina Sheila R.	0565
	0122	Sheluhin, O.I.	0180	Subosa, Bemboy NiÃ±o F.	0189
Sarinas, Brian Gil S.	0084	Shoaibi-Omrani, Babak	0579	Suhr, Steven T.	0210
Sarte, Michael A.	0271	Shouval, Harel Z.	0509	Sultana, Nazneen	0087
Sattler, Rita	0331	Sia-Vargas, Lily L.	0228	Sumagaysay, Charity Joy B.	0047
SauvÃ©, Yves	0496	Siddique, Muhammad Fahad	0312	Sumagaysay, James B.	0047
Sawali, Halimuddin	0314	Sigua, Ricardo G.	0134		0341
Sawchenko, Paul E.	0290	Silverman, Ann- Judith	0076	Sunderland, William J.	0459
Scemes, Eliana	0379	Singh Kadian, Yogender	0395	Supangco, Enrico S.	0062
Schmid, Christoph D.	0371	Singh, Sarnam	0101	Sutherland, Anne K.	0076
Schotland, Peter	0258	Singh, Tarun P.	0101	Sy, Maria Victoria U.	0550
Schweitzer, Paul	0286	Sintay, Robert	0396	Sybingco, Edwin	0131
Schweizer, Renate	0327	Kennard M.		Szerencsei, Robert T.	0416
Seeley, Randy J.	0492	Sio, Maria Christina D.	0285	Tadosa, Edwin R.	0065
Segocio, Donnie Jan L.	0247	Siriban-Manalang, Anna Bella	0166		
Seidenberg, Michael	0425	Siy, Eric A.	0169		
		Skelton, Kelly H.	0296		

	0086	Tribiana, Estrella T.	0203	Villarta, Jr., Romeo	0274
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Advancing Radiologic Technology Research  
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IAMURE International Journal of Health Education  
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