

**Sociedad de Ciencias Morfológicas de La Plata**  
*(La Plata Morphological Sciences Society)*

Resúmenes del **X CONGRESO y 7<sup>mas</sup> JORNADAS DE EDUCACIÓN**  
*Abstracts from the X Congress and 7<sup>th</sup> Education Workshop*

18 Y 19 DE SEPTIEMBRE DE 2008  
FACULTAD DE ODONTOLOGÍA  
UNIVERSIDAD NACIONAL DE LA PLATA  
LA PLATA; ARGENTINA

- 1 -

## INTESTINE HISTOLOGY OF DORADO *Salminus brasiliensis* CUVIER, 1816 (PISCES: CHARACIFORMES). A PRELIMINARY STUDY

Andrés Laube PF<sup>1</sup>; Plaul SE<sup>1</sup>; García Romero N<sup>2</sup>; Barbeito CG<sup>1,2</sup>.

<sup>1</sup> Cátedra de Histología y Embriología. <sup>2</sup> Cátedra de Patología General Veterinaria. Facultad de Ciencias Veterinarias. UNLP. Calle 60 y 118 s/n. La Plata (1900) - Buenos Aires - Argentina.

E-mail: [pfandres@fcv.unlp.edu.ar](mailto:pfandres@fcv.unlp.edu.ar), [splaul@museo.fcnym.unlp.edu.ar](mailto:splaul@museo.fcnym.unlp.edu.ar)

We are studying the histological structure of the digestive system in the teleost *Salminus brasiliensis* (dorado). Our objective was to describe the histological structure of intestine in this fish. We used adult fishes, from 5.0 to 7.9 Kg, collected in Paraná River. Samples from pyloric caeca and different intestinal sectors were fixed in 10% formalin, and processed for hematoxylin-eosin staining. Cranial, intermediate and caudal intestinal sectors were analysed. Microscopic observations demonstrated three layers: mucosa, muscular, and serosa. The mucosa presented long and ramified villi, interconnected in pyloric caeca and cranial intestine. Villi size, number and height decreased towards caudal sector. The epithelium was columnar simple with goblet cells that increased in caudal. Chorion contained loose connective tissue with abundant lymphocytes under epithelium. Surrounding muscular connective tissue was dense. Glands were found only in the cranial sector. Pyloric caeca showed a thin chorion, which increased its thickness from cranial to caudal. Muscular in pyloric caeca presented three layers, an inner oblicuous, an intermediate circular and outer longitudinal. Intestine showed only inner circular and outer longitudinal muscular layers. The serosa was constituted by loose connective tissue with adipocytes, nervous plexus and vessels. A dense submesothelial connective tissue and a simple squamous epithelium were observed. Pyloric caeca and intestinal cranial portion showed pancreatic tissue included in their serosa. The characteristics found were similar to the ones observed in other teleosts fishes. The knowledge of the normal structure is important to determinate changes in pathological conditions in this important autochthonous species.

- 2 -

## CAUDAL EXTREMITY OF THE SPINAL CORD IN THE LLAMA (*Lama glama*)

Arzone CA; Blanco C; Genoud P; Vidal R.

Área de Anatomía I y II. Facultad de Ciencias Veterinarias. Universidad de Buenos Aires. Ciudad Autónoma de Buenos Aires, Argentina.

Email: [carlos.arzone@gmail.com](mailto:carlos.arzone@gmail.com)

The principal aim of this project was to perform a descriptive and topographical study of the caudal extremity of the spinal cord (CESC) of the llama (*Lama glama*) related to the vertebral channel, and anatomical related elements (filum terminus, cauda equina). We were interested not only in anatomical aspect, also to transfer the results to the different fields of the Veterinary Medicine, for example manoeuvres to administer local and regional anaesthetics. The CESC on domestic mammals is placed from last lumbar vertebrae to first or second sacral vertebrae. CESC or medullary cone of the llama is described from dissections realized on 10 adult animals, both sexes (2 males, 8 females), and different aptitudes. The medullary cone extends from L6, L7, S1, S2, S3, S4 and C1-C2-C3 medullar segments, with the apex of the medullary cone at S2 vertebra level. The CESC in the llama is formed by the lumbar, sacral and caudal nerves. These peripheral nerves carry the sensitive and motor information from the hind limb as well as to the somatic muscles of the hip girdle and the bladder, anus, and tail. No differences were found between sex or aptitude groups. Differences found between llama and domestic animals are discussed.

## DIFFERENT ASSESSMENT INSTRUMENTS IN MORPHOPHYSIOLOGY

*Cecho AC; Tosti SB; Peñalva MA; Sambartolomeo PM; Dominguez GE.*  
*Facultad de Odontología. Universidad Nacional de La Plata. La Plata, Argentina.*  
E-mail: [anahipenalva@gmail.com](mailto:anahipenalva@gmail.com)

Assessment is a quality control system that determines the efficacy of the teaching process. As teachers of the School of Dentistry, we consider only one or two summative evaluations insufficient as controls for learning. For this purpose, we implemented daily assessment mechanisms using different instruments. The selected instruments were: 1) open book synthesis: emphasizing problem solving; 2) open questions: clear and precise interrogates; 3) conceptual maps: the concepts should be hierarchically related with an inner coherence; 4) multiple choice test (type I and II): the student should choose one answer from several options; 5) puzzles (type I and II), designed for stimulation of intellectual, sensorial and affective areas; 6) fill in the blanks sentences: principles, norms, regulations or statements where the main words have been deleted and the blank left to be properly fulfilled; 7) matching test: two series of data are presented and the student should match those that correspond; and 8) multiple election test. Results were expressed as percentage of students having passed. The highest score was obtained by the application of instrument 1 (98%), followed by instrument 2; 4 (type I), and 5 (type I) (96.77%; 92.04 %; and 91.39%, respectively). Instruments 7 and 8 turned out to be more difficult for students to solve (45.09%; 45.34%, respectively). The analysis of these assessments will enable us to take decisions accordingly and optimize the learning of the subject.

## PARTICIPATIVE CULTURE APPLIED TO HETEROGENEOUS GROUPS IN POSTGRADUATE COURSES

*Camino NB; Achinelly MF; González SE.*  
*Facultad de Ciencias Naturales y Museo, Universidad Nacional de La Plata. La Plata, Argentina.*  
E-mail: [nemainst@cepave.edu.ar](mailto:nemainst@cepave.edu.ar)

The postgraduate course on nematology of insect which is held annually at different universities in our country, revealed the presence of diverse and individualistic groups of students of different ages, professions, needs and career goals. Three cultural groups, named as young, middle and adult cultures could be identified within these courses. We implement a participative culture methodology based on the premise of learning in a continuous interaction of group members and teachers, thus destroying the role of single leader and allowing everyone to participate. The group was divided into subgroups of 4 -5 students representing the three different cultures. Each subgroup was presented a preparation of the nematode's mouth microscopic structure, together with illustrated books, and a series of questions about the morphology and physiology of the structure that they were to observe. Each question was to be read by a member and answered within the subgroup. The meeting between the three cultures showed different degrees of individualism, as a product of their training. The participative culture aimed to destroy this individualism taking each member a turn on the observation of presented the material so that collectively the subgroup reached a conclusion, obviously taking into account the individual's prior experiences. A final discussion among the different subgroups led to a final general conclusion. In this way, with this methodology, with the classic top-down teachers and students organization was ruptured, making the learning process a fluid and interactive experience.

---

- 5 -

## BIOFILM ON TOOTH ENAMEL OBSERVED BY ELECTRON MICROSCOPY

*Basal R; Butler T; Iantosca A; Ale E; Gonzalez A; Medina L.*  
*Facultad de Odontología. Universidad Nacional de La Plata. La Plata, Argentina.*  
E-mail: [roxanabasal@hotmail.com](mailto:roxanabasal@hotmail.com)

Dental enamel has a very particular morphology, especially in the premolars and molars, which by the action of the salivary protein facilitate the adherence of biofilm microorganisms. These, once adhered to the tooth leads to caries development by means its biological components that interact with diet and proteins. We used 14 human premolars and molars extracted by orthodontists. Dental pieces were processed for electron microscopy observation with the aim of analyzing their morphological structure and possible biofilm adherence. Ten of the dental pieces under analysis were showed biofilm adherence in occlusal fissures and fossae whereas no such adherence was found in the other 4 dental pieces. The analysis by electron microscopy rendered that the destruction of the enamel prisms and the anatomy of occlusal surface of premolars and molars may cause adherence of biofilm bacteria.

- 6 -

## ULTRASTRUCTURAL CHANGES IN CARCINOMAS OF SQUAMOUS CELL OF ORAL MUCOSA

*Micinquevich S; Mayocchi K; Dorati P; Gomez M.*  
*Cátedra Patología y Clínica Estomatológica, Facultad de Odontología, UNLP.*  
E-mail: [susmic2003@yahoo.com.ar](mailto:susmic2003@yahoo.com.ar)

The squamous cell carcinoma is one of the most common disorders emerged from the oral mucosa epithelium. Many factors such as tobacco, alcohol, trauma, and viruses, among others, participate in its genesis. Carcinomatous epithelium displays a number of atypia that characterize its histological image. Materials with histopathological diagnosis of squamous cell carcinoma from the Department of Pathology and Clinical Stomatology Archives were employed for this study. Semithin-cuts stained with toluidine blue dye were used to select areas for analysis. Ultrathin cuts of 90 nm were dehydrated with increasing alcohols, embedded in epoxy resin and contrasted with uranyl acetate and lead citrate for transmission electron microscopy (TEM). The procedures and visualization were performed at the Department of Electron Microscopy, Faculty of Veterinary Sciences (UNLP). Changes detected at epithelial level in toluidine blue slides were: hyperchromatic nuclei, anisocytosis, anisokaryosis, mitotic figures, intercellular unions, intercellular edema and keratin pearls. At the ultrastructural level: light cytoplasm polygonal cells with free ribosomes, rough endoplasmic reticulum cisternae, altered mitochondria, autophagic vacuoles, nuclei of irregular contour, evident nucleolus, and minimum intercellular unions (desmosomes) were observed. In addition, the presence of intermediate filaments was noted. These data would characterize the squamous cell carcinoma of oral mucosa from the ultrastructural point of view not systematically addressed.

- 7 -

## VESTIBULAR ENAMEL STRIATIONS IN CRANEUM FROM PAMPA GRANDE POPULATION (SALTA)

Batista S; Martínez C.

Facultad de Ciencias Naturales y Museo; Facultad de Odontología. Universidad Nacional de La Plata. La Plata, Argentina.

E-mail: [susylbat@yahoo.com.ar](mailto:susylbat@yahoo.com.ar)

Food marks on vestibular teeth surface give an important report about diet, nutrition and subsistence of a population. Vestibular enamel striations were registered for each cranium. Impressions were taken with Elite HD from left upper superior first molar (n=26). A subregion from a digitalized photo obtained by SEM was also selected for the study. Striations were classified in vertical (V), horizontal (H) and oblique mesio-occlusal/distal-cervical (mo/dc) and distal-occlusal/mesio-cervical (do-mc) and area density were determined. NTSYSpc 2.01c Program was applied. Four discontinuous variables were characterized (striations according to its directions) and data were loaded in a Basic Matrix of Data (BMD) that was analyzed by grouping (Q Technique) and order techniques (R Technique). Bidimensional diagrams and distance fenogram were obtained. In the first one, there was a preponderance of vertical and oblique striations (do-mc) in the representation of the component 1 whereas in the component 2 oblique (do-mc) and horizontal striations resulted preponderant. These differences were also observed at the distance fenogram where G1 and G2 appeared integrated by the same craniums. This statistical results found would suggest that this population had a mixed economy with no significant differences according to sex or age.

- 8 -

## NUTRITIONAL STATUS AND BODY COMPOSITION OF WICHI CHILDREN AND ADULTS FROM THE NORTHWEST OF CHACO

Cesani MF<sup>1,2</sup>; Garbossa G<sup>3</sup>; Oyhenart EE<sup>1,2</sup>.

1. IGEVET, Facultad de Ciencias Veterinarias, Universidad Nacional de La Plata. CCT La Plata- CONICET; 2. Facultad de Ciencias Naturales y Museo, Universidad Nacional de La Plata; 3. Departamento de Química Biológica, Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires, Ciudad Autónoma de Buenos Aires, Argentina.

E-mail: [mfcسانی@fcnym.unlp.edu.ar](mailto:mfcسانی@fcnym.unlp.edu.ar)

This study's objective was to evaluate the nutritional status and body composition of Wichi children and adults from Chaco, Argentina. Weight, height, arm circumference and subscapular and tricipital skinfold were measured in 324 individuals aged from 3 to 60 and grouped in four age-categories (3-9.9; 10-17.9; 18-29.9; 30-60). The Body Mass Index, the muscle mass and adipose tissue area of the arm were calculated. Data was transformed to Z scores using the NHANES I and NHANES II references. Z scores of -2 were used as cut-off point to determine low height-for-age (LH) and low weight-for-height (LWH). Overweight and obesity were estimated according to the International Obesity Task Force recommendations. The prevalence of LH was higher than LWH (20.7% and 6.5%, respectively) in both sexes. Age categories analysis showed a similar situation, except for the 3-9.9 age-group, where LWH was similar to LH in men but higher in women. Twenty three percent of the individuals were overweight and 5.2% were obese. Women showed the highest prevalent. Tricipital skinfold and arm fat were similar to those of the reference whereas the subscapular skinfold resulted higher ( $0 < z < 2$ ). The muscle mass area varied according to sex: in women was higher than that of the reference ( $0 < z < 1$ ) and in men it was lower ( $0 > z > -1$ ). Most of the analyzed individuals showed a distorted nutritional status and body composition, being women the most affected. The high percentage of chronic and acute undernourishment observed, express the negative effect of the environment in which these communities live.

- 9 -

## CHANGES IN THE ENAMEL ROUGHNESS DUE TO COMPOSITE RESIN RESTORATIONS AND THEIR RELATIONSHIP WITH THE BIOFILM

Butler T; Lazo G; Ale E; Basal R.

Facultad de Odontología, Universidad Nacional de La Plata. La Plata, Argentina.

E-mail: [dikybutler@yahoo.com.ar](mailto:dikybutler@yahoo.com.ar)

The biofilm formation on the dental tissues and restoration materials for depends on both unspecific factors and specific factors. During the polymerization of polymer compounds certain changes are produced and they lead to the generation of irregularities on the enamel surface. The objectives of the present work were to demonstrate the possible biofilm leak due to permanent changes that produce the composite resin on the enamel. We measured the roughness of teeth before and after treatment with composite resin. Afterwards, 5 IC (central incisor) were "in vitro" selected with a collage of previous treatment. Twenty four hours after 20 sections were made, placed in Indian ink at different temperatures but equal periods of time. Sections were observed by Scanning Electron Microscopy (SEM). The results were processed statistically. Results included 12 showing leaks on the fracture edges and major changes in the enamel roughness, the remaining 8 sections showed no leaks. The following conclusions can be inferred: the contraction suffered by the composite resin during its polymerization produced the leaking of more than 50% of the dental pieces involved, thus modifying the enamels surface structure.

- 10 -

## TRICHOMES IN *Polytaenium lineatum* (VITTARIACEAE-PTERIDOPYTA)

Martínez OG<sup>1</sup>; de la Sota ER<sup>2,3</sup>; Giudice GE<sup>2</sup>.

Facultad Ciencias Naturales, Universidad Nacional de Salta, Salta, Argentina; 2. Cátedra de Morfología Vegetal, Facultad Ciencias Naturales y Museo, Universidad Nacional de La Plata. La Plata, Argentina. 3. CONICET.

E-mail: [sota@fcnym.unlp.edu.ar](mailto:sota@fcnym.unlp.edu.ar)

The plants named *Polytaenium lineatum*, from the Vittariceae ferns, grow epiphytically, but sometimes on mossy rocks and ravines, in the South of Mexico, Great Antilles, Mesoamerica, Venezuela, Colombia, Ecuador, Peru, Bolivia, Southern Brazil and Argentina. In our country this species is not really frequent in the NW areas of the Yungas between 1000 and 1500 meters of altitude. These ferns, in general epiphytic, during their evolutionary process have developed several changes so adapting the plants to the critical boundaries of water and soil for living. Fresh and herborized materials from Salta and La Plata were used, applying photo-and scanning electron microscopes, paying specific attention looking for diminute trichomes developed sparsely on the dorsal surface of their leaves. These trichomes are designated "tillandsioid", because they clearly resemble the structures which cover the leaves of *Tillandsia*. It is a large American genus, called by the people, "Spanish moss" in Europe and, "air carnation" or "claveles del aire" in America. These trichomes are nice scales leaving each one a very small peltate foot which, interrupts the epidermis' continuity as a circular very narrow space around it. Thus, it could allow the entry of water, condensed dew and atmospheric dust, into the mesophyll of the leaf. As a hypothesis to follow this project, it is the development of a transfusion tissue or something like that, in their neighborhood. This fact would be useful for several poikilohydric epiphytic taxa.

## DETERMINATION OF GLYCOCONJUGATES IN DUODENUM OF *Myocastor coypus bonariensis* (COYPU)

Díaz AO<sup>1</sup>; García AM<sup>1</sup>; Eyheramendy V<sup>2</sup>; Felipe AE<sup>2</sup>.

1. Laboratorio de Histología e Histoquímica, Departamento de Biología, Facultad de Ciencias Exactas y Naturales. Universidad Nacional de Mar del Plata; 2. Área de Ciencias Morfológicas; Grupo de Investigaciones Biológicas, Facultad de Ciencias Veterinarias. Universidad Nacional del Centro de la Provincia de Buenos Aires, Tandil, Argentina.

E-mail: [adiaz@mdp.edu.ar](mailto:adiaz@mdp.edu.ar)

The aim of the present work was to analyze the carbohydrates composition in the duodenum of the coypu in different pre and postnatal stages. Samples were fixed in buffered formalin and routinely processed to paraffin wax. To localize and identify glycoconjugates (GCs) the following techniques were applied: 1) PAS: GCs with oxidizable vicinal diols, 2) PA\*S: sialic acid and some of their chain variants, 3) KOH/PA\*S: GCs with sialic acids residues, 4) PA/Bh/KOH/PAS: sialic acids residues with O-acyl substitution and O-acyl sugars, 5) KOH/PA\*/Bh/PAS: neutral GCs with oxidizable vicinal diols, 6) Alcian blue pH 2.5: GCs with carboxyl groups and/or with sulphate esters, 7) Alcian blue pH 1.0: GCs with O-sulphate esters and 8) Alcian blue pH 0.5: very sulphated GCs. Villi and Lieberkühn's crypts goblet cells exhibited carbohydrate heterogeneity in their secretory content in the different stages of development. Thus, in fetuses from 90 dpc (days-post coitus) were observed neutral and sulphated GCs and in those of 120 dpc GCs with sialic acids. Brunner's glands began to give positive reactions of varied intensity to the different techniques in the juvenil ones of 30 days showing the presence of scanty neutral and sulphated GCs, whereas in adults the proportion of these GCs was increased and carboxylated and sialylated GCs were also observed. The different GCs elaborated and secreted in the duodenum of the coypu during its ontogeny demonstrated a high level of histochemistry complexity related to the multiple functions that the mucus fulfills in the digestive tract.

## INNOVATIVE DESIGN TO REFUNCTION AN ORAL HISTOLOGY SYLLABUS

Llompart G; Durso G; Batista S; Tanevitch A; Anselmino C.

Facultad de Odontología. Universidad Nacional de La Plata. La Plata, Argentina.

E-mail: [gracieladurso@yahoo.com.ar](mailto:gracieladurso@yahoo.com.ar)

A syllabus is currently both a teaching direction guide for teachers and a learning facilitating tool and an organizer for students. The purpose of this work was to structure the syllabus of the subject around an axis or distributional generative matrix that may enable students to grasp the issues of each thematic unit. A critical analysis of four mouth histology and embryology textbooks was done, where indexes showed a topological and chronological order, as well as a critical analysis of the syllabuses (1990 and 2002) that followed a similar organizing logic. The signature was framed within the syllabus and a basis was provided, and the general aims were stated. An organizing axis called "multifunction oral system" was defined both in its biological and psycho-social contexts, giving rise to thematic units that posed a problematic idea in the form of hypotheses, questions or other. The thematic units allowed organizing and linking the different topics among themselves, thus showing the relationship existing between them and constituting a nodal element that articulates with key concepts to the syllabus' axis. We concluded that the function criteria used to make the syllabus enables it as an optimizing tool of the teaching-learning process and of the institutional commitment to the student. Moreover, the presence of an axis makes the articulation with other signatures possible.

- 13 -

## CANINE MAMMARY CARCINOMAS: VEGFR-2 EXPRESSION AND MICROVESSEL DENSITY CORRELATION. EVENTUAL INFLUENCE IN METASTASIS DEVELOPMENT

*Diessler ME<sup>1,2</sup>; Portiansky EL<sup>3</sup>; Castellano MC<sup>4</sup>; Idiart JR<sup>1</sup>.*

*1. Cátedra de Patología Especial; 2. Cátedra de Histología y Embriología; 3. Laboratorio de Análisis de Imágenes; 4. Clínica de Pequeños Animales. Facultad de Ciencias Veterinarias. Universidad Nacional de La Plata. La Plata. Argentina*

E-mail: [diessler@fcv.unlp.edu.ar](mailto:diessler@fcv.unlp.edu.ar)

Factors influencing prognosis of mammary carcinomas are controversial in veterinary oncology. The study of angiogenesis, for instance, may be done by evidencing soluble and cellular elements involved and their relationships, results of this process, or its influence on behaviour of the tumor. The aims of this study were: to compare the VEGFR-2 (syn: flk-1) expression to microvessel density (MVD), and to evaluate the relationship between these findings with lymph node (LN) metastasis. Mammary carcinomas (136) with their regional LN were immunolabelled by the indirect technique of peroxidase (LSAB2 System HRP, DakoCytomation). Primary antibodies used were: anti-VEGFR2 (Flk-1, (A-3):sc-6251, Santa Cruz Biotechnology), and anti-von Willebrand factor (vWf, clon F8/86. M 0616, DakoCytomation). Twenty 40x fields of each sample processed with anti-VEGF2r were analyzed with image software (ImagePro Plus, v6.0, Media Cybernetics). Integrated optical density (IOD) and IOD/maximal intensity were measured. Anti-vWf labelled structures were counted in 20 fields. Simple lineal regression (dependent variable: MVD) was used for the first objective and Student's t- test for the second. A high probability of a lineal relationship between flk-1 expression and MVD was found. In LN- group the IOD media was 57.607, and for the LN+, 485.713. The IOD/maximal intensity was 5.57 and 45.93 for the two groups, respectively. The MVD/mm<sup>2</sup> was 68.47 and 89.40. P-value for this comparisons was always <0.0009. We concluded that, for the samples under study, there was a significant association between flk-1 expression and MVD. Both features were associated with a higher probability of metastasis development and a poorer prognosis.

- 14 -

## SEX ESTIMATION IN NATIVE SKULLS THROUGH DIFFERENT METHODS

*Flores OB<sup>1</sup>; Silva DT<sup>1,2</sup>.*

*1. Laboratorio de Bioantropología, División Antropología. Facultad de Ciencias Naturales y Museo. Universidad Nacional de La Plata; 2. Personal Apoyo CIC.*

E-mail: [floresolga@infovia.com.ar](mailto:floresolga@infovia.com.ar)

Our work had as a primary aim to evaluate the applicability of different methods for sex estimation in skulls. We used a sample belonging to osteological collections deposited in the Division Anthropology of the La Plata Natural Sciences Museum. The sample consisted of 50 well-preserved skulls. Diagnosed probable sex was compared to results obtained through suitable already bioanthropological methods. The methods employed were: 1) Escopic (observation); 2) Discriminant function analysis using different anthropometric measures, and 3) Ferembach's method which consists in a series of observations assigning a value to each of the observed elements and making a summation which is recorded in a calculus sheet with values ranging from 0, to -1 and -2. These present a series of advantages, between them stands out the fact of being based on a bony element of easy identification and good state of conservation. The performed analysis allowed us to test the utility and precision of these methods in order to recommend certain simple indicators for diagnoses that facilitate the allocation of sex in not-documented human remains.

---

- 15 -

**ADAPTIVE MORPHOLOGY IN TRIGONIOIDA (MOLLUSCA, BIVALVIA) WITH  
SPECIAL EMPHASIS ON MYOPHORELLINAE, PTEROTRIGONIINAE AND  
STEINMANELLINAE FROM NEUQUEN BASIN**

*Echevarría J; Damborenea SE; Manceño MO.*  
*Museo de La Plata. La Plata, Argentina.*  
E-mail: [javierechevarria@fcnym.unlp.edu.ar](mailto:javierechevarria@fcnym.unlp.edu.ar)

An overview of morphological shell features of trigonoid bivalves which enable drawing inferences about their various modes of life is outlined. Available analytical methods for assessing such hypothesis are also explored. Most remarkable shell characters include overall morphology and flank ornamentation. Two basic shell-shape morphotypes are recognized, namely, (a) compact forms with broadly truncate, pyramidal posterodorsal region, suggestive of stable substrates and environments; and (b) elongate, pyriform shells with their posterior region projected in an arched rostrum, indicative of deeper burrowing habits, and probably from higher energy environmental settings. Since these represent both extremes of a continuous spectrum, geometrical outline analysis seems an appropriate tool for evaluating this character. Regarding ornamentation, oblique ribs are observed upon the flanks, either straight, or anteriorly curved (with great variability in curvature intensity), or else flexuous (i.e. posteriorly bent initially, but then becoming anteriorly curved). The possible adaptive significance of such variability is not yet clear, and its detailed analysis requires developing suitable *ad-hoc* techniques to deal with open curves with continuous growth. Ribs may also bear tubercles or crenulations which are likewise relevant for inferring life habits. This comparative survey of the above mentioned features, which are associated in various ways in different populations, and often occur with more than one state even within a single population, points to the need of performing comprehensive analytical studies taking into consideration multiple characters, adequately sized samples and ontogenetic development, when aiming at establishing systematic and phylogenetic relationships within this interesting group of infaunal bivalve molluscs.

- 16 -

**IMPORTANCE OF THE POSTERIOR PALATINE OPENING LOCALIZATION  
FOR THE PALATINE ANESTHESIA**

*Irigoyen S; Abilleira E; Segatto R; Bustamante C; Mancuso P; Fingermann G, De Locca S; Mazzeo D.*  
*Facultad de Odontología, Universidad Nacional de La Plata. La Plata, Argentina.*  
E-mail: [carlosbustamante100@yahoo.com.ar](mailto:carlosbustamante100@yahoo.com.ar)

The infiltrative anesthesia of the oral palatine mucosa is used in surgical interventions of this region, as well as in exodontias of superior teeth. The innervation and irrigation of the palatine region depend mainly on the posterior pedicle, formed by the descending palatine artery and the posterior palatine nerve that emerge from the opening under investigation. In order to locate the posterior palatine opening, it has proposed to draw two imaginary lines: a traverse line that goes by the third superior molars' distal surface and another longitudinal line backwards from the canines' distal surface. The intersection of both lines would be the location to carry out the anesthesia puncture. We were able to conclude that, although this way to locate the posterior palatine opening is of clinical utility, references are lost when teeth were absent or in malposition. These facts lead for the search of other anatomical parameters to improve the localization of the posterior palatine opening.

- 17 -

## HISTOLOGICAL STUDY OF THE OVARIC CYCLE OF THE ROCK CRAB *Platyxanthus crenulatus* (BRACHYURA: PLATYXANTHIDAE)

Farias NE; Cuartas E.

Facultad de Ciencias Naturales, Universidad Nacional de Mar del Plata, Mar del Plata, Argentina.

E-mail: [nefarias@mdp.edu.ar](mailto:nefarias@mdp.edu.ar)

While oogenesis occurs in these crabs, ovaries suffer markedly changes. We described these changes in the ovary through its maturation cycle, regarding macro and microscopically features. *P. crenulatus* mature females were captured in Mar del Plata and stage of the ovaries was determined according to a previous classification. Routine histological techniques were used in order to classify the oocytes. Macroscopically five ovarian stages were observed: 1) immature: white, filamentous and very thin, almost imperceptible by sight; epithelium with nodules of germ cells. 2) Initial: turgid and tubular, white translucent and uniform texture, with primary oocytes exclusively. 3) Maturing: slightly granulated, light lilac, with primary and secondary oocytes. 4) Mature: turgid, intense lilac to violet, occupying the whole cephalothorax cavity, with secondary oocytes. 5) Spawned: lax, violet to red translucent; with secondary residual oocytes, atricial oocytes and oogonia nodules. Microscopically we differentiated: 1) oogonia; spherical, densely grouped, with a nucleus occupying almost the whole cell. Mean diameter (MD): 14  $\mu\text{m}$ ; 2) primary oocytes (PO): large nucleus, disperse chromatin, with one large and two small nucleoli. PO had two categories: early, MD 61  $\mu\text{m}$ , homogeneous basophilic cytoplasm, few follicle cells slightly oval around it, and late, MD 121.6  $\mu\text{m}$ , with a basophilic and more heterogeneous cytoplasm, small vacuoles, surrounded by round follicle cells. 3) Secondary oocytes: smaller central nucleus, with almost one nucleolus. Acidophilic cytoplasm with vitellum and lipid drops. MD 121.5  $\mu\text{m}$ . 4) Atricial. Microscopic observation validated the sequence of previous macroscopic classification of the ovaries.

- 18 -

## HARDNESS OF ENAMEL AND DENTIN IN BOVINE INCISORS

Fernández EN<sup>1</sup>; Abal A<sup>2</sup>; Durso G<sup>2</sup>; Cabrera J<sup>3</sup>; Martínez RD.<sup>1</sup>

1. Cátedra de Genética Animal, Facultad de Ciencias Agrarias, Universidad Nacional de Lomas de Zamora, Lomas de Zamora, Argentina; 2. Cátedra de Histología, Facultad de Odontología, Universidad Nacional de La Plata; La Plata, Argentina; 3. Laboratorio de Materiales, Facultad de Ingeniería, Universidad Nacional de Lomas de Zamora, Lomas de Zamora, Argentina.

E-mail: [ednfer@yahoo.com](mailto:ednfer@yahoo.com)

The physical characteristics of productive cattle dental tissue have great importance due to their relation to attrition process. The objective of this study was to characterize the hardness (HV0.1) of enamel and dentin of bovine incisors teeth. Five teeth of crossbred steers of 3 to 3.5 years old, from the same Santa Fe region, were sectioned transversally at half crown height, and were defined three transects that toured the tooth from the outer edge of the enamel towards dentine: mesial (Z1), central (Z2) and distal (Z3). Four measurements of hardness were taken in each transects at different depths: 30  $\mu\text{m}$  of the outer enamel (P1), 30  $\mu\text{m}$  before reaching dentin-enamel junction (DEJ) (P3), equidistant between P1 and P3 (P2) and 30  $\mu\text{m}$  past the DEJ (P4). Descriptive statistics were calculated and simple linear regression analysis was applied to study the functional relation of hardness related to depth. ANOVA was performed to detect mean differences between transects. The average values of hardness and standard deviations to the depths P1-P4 were respectively 367.87 (35.15); 334.40 (47.31); 273.60 (59.76); 57.83 (8.04). The average hardness for transects Z1 to Z3 were 324.73; 325.93 and 325.20 for the enamel and 56.88; 58.04 and 58.56 for the dentin. The average ratio between the hardness of dentin and enamel was 17.7%. Results indicated that hardness of enamel decreased with increasing depth with an estimated slope of -47.13 ( $p < 0.01$ ), while averages between transects were not significant for any depths. The analyses were conducted using SAS 9.1.3 (2007).

## INTERSTITIAL CELLS OF CAJAL IN THE SMALL INTESTINE OF THE HORSE

Márquez SG<sup>1,2</sup>; Galotta JM<sup>1,3</sup>; Gálvez GA<sup>2</sup>; Portiansky EL<sup>4</sup>; Barbeito CG<sup>4,5</sup>

1. Facultad de Ciencias Agrarias, UCA, Ciudad Autónoma de Buenos Aires; 2. CBC, Universidad de Buenos Aires; 3. Facultad de Ciencias Veterinarias, Universidad de Buenos Aires, Ciudad Autónoma de Buenos Aires; 4. Instituto de Patología; 5. Cátedra de Histología y Embriología, Facultad de Ciencias Veterinarias, Universidad Nacional de La Plata. La Plata, Argentina.

E-mail: [silviamarquez@gmail.com](mailto:silviamarquez@gmail.com)

Myocytes (CML), neurons, enteroglia, and the Interstitial Cells of Cajal (ICC) can be mentioned among the cells present in the tunica muscularis of small intestine. ICC play a role in motor coordination due to their interaction with CML and *enteric nerves terminals*. These cells not only form a net between them but establish synapses with neurons of the enteric plexus and gap junctions with digestive system wall CML. In the present work the ICC presence, aspect and distribution in duodenum and jejunum of adult horses from local abattoirs were compared. Slices of paraffin-embedded material were submitted to immunochemical techniques using anti-c-kit/CD117 antibodies to specifically identify ICC. Anti-vimentin and anti-desmine antibodies were used as a positive and negative control, respectively. LSAB was employed as the detection method. Diaminobenzidine and Hill hematoxylin were the staining molecule and counterstain, respectively. In duodenum, ICC were observed as a continuous net alongside the myoenteric plexus, showing an intensive cytoplasmic staining with multipolar pattern. ICC (ICC-CM) were observed in the muscular circular layer whereas in the muscular longitudinal layer, ICC (ICC-LM) spread from the interface of myoenteric plexus, reaching ICC-MP. In jejunum, ICC-CM were scattered among CML. ICC-MP showed similar aspect to duodenum ICC. Abundant ICC-LM were detected in this organ, but isolated among the muscle cells of the longitudinal layer. The performed immunostaining allowed us to recognize positive anti-c-Kit cells in the muscle layers of horses' small intestine. In our opinion, due to their localization, morphology and connections those cells were ICC.

## DETERMINATION OF THE ANGULATION OF THE POSTERIOR PALATINE DUCT IN ADULT HUMAN TOOTHLESS SKULLS

Irigoyen S; Abilleira E; Segatto R; Bustamante C; Mancuso P; Fingermann G, De Locca S; Mazzeo D.

Facultad de Odontología, Universidad Nacional de La Plata. La Plata, Argentina.

E-mail: [carlosbustamante100@yahoo.com.ar](mailto:carlosbustamante100@yahoo.com.ar)

The need to suppress the sensibility in the posterior area of the hard palate makes necessary the application of surgical techniques on this area, so that precise references to locate the inferior opening of the posterior palatine duct (PPD) which contains the greater palatine nerve that transmits stimuli to the central nervous system. The precise infiltration and the sensibility suppression should avoid nuisances to the patient and later operative failures. Taking into account the lack of bibliographical data on this topic, the objectives of the present work were: 1) to establish the PPD angulations in adult human toothless skulls; 2) to establish location parameters for the PPD inferior opening; 3) to determine if significant variability exists in comparison to the toothless maxillary. The size of the sample was of 100 adult human toothless skulls, considering each hemi-skull as an experimental unit of angulation. The obtained preliminary results indicated a significant variation, compared to data found on toothed skulls in the classic bibliography.

- 21 -

## IMPORTANCE AND DETERMINATION OF THE POSTERIOR PALATINE DUCT ANGULATION IN TOOTHED HUMAN ADULT SKULLS

Irigoyen S; Abilleira E; Segatto R; Bustamante C; Mancuso P; Fingermann G, De Locca S; Mazzeo D.  
 Facultad de Odontología, Universidad Nacional de La Plata. La Plata, Argentina.  
 E-mail: [carlosbustamante100@yahoo.com.ar](mailto:carlosbustamante100@yahoo.com.ar)

Different surgical situations require the anesthetic blockade of the anterior palatine nerve; among those that stand out are the extractions of retained canines and the surgery of palatine torus. Moreover, the topography of the posterior palatine duct (PPD) is also important when it is necessary the placement of dental implants. Classical available data on the PPD angulation refers to 60 – 70 degrees taking the axis of the duct in connection with the occlusal plane as references. As current literature does not include more reference values for the PPD angulation, the objectives of the present work were: 1) to determine the angulation of the PPD in toothed skulls; 2) to compare the results obtained to those of the classic bibliography; 3) to determine if significant variability exists in comparison to toothless maxillary. The size of the sample was of 100 toothed skulls, which considering each hemi-skull as an experimental unit (EU), it represented a total of 200 EU. The obtained partial results indicated that there was a statistically significant difference to the above referred PPD angulation.

- 22 -

## CLAW CLOSER MUSCLE OF *Neohelice granulata* (GRAPSOIDEA, VARUNIDAE): HISTOCHEMICAL HETEROGENEITY OF FIBERS

Longo MV; Díaz AO.  
 Departamento de Biología; Facultad de Ciencias Exactas y Naturales. Universidad Nacional de Mar del Plata. Mar del Plata, Argentina.  
 E-mail: [mvlongo@mdp.edu.ar](mailto:mvlongo@mdp.edu.ar)

The claw is a multifunctional organ, which is used by the crustacean during feeding, mating, agonistic interactions and burrowing. It is composed by muscles with diverse types of fibers. Histochemically, these fibers can be differentiated according to the myosin ATPase (mATPase) and oxidative enzymes activities. The aim of the present study was to analyze the fiber composition of *Neohelice granulata* claw closer muscle derived from the activities of Succinate Dehydrogenase (SDH) and mATPase enzymes, and the pH stability of the mATPase. Adult male crabs on intermoult collected from the Mar Chiquita Lagoon (Bs. As., Argentina) were acclimated in aquaria. The specimens were cold anesthetized and their claws were removed. The closer muscle was fixed in liquid nitrogen. Cryosections were subjected to histochemical techniques: SDH and mATPase (pH 9.4 at room temperature: with no preincubation and with preincubations at pH values 4.6, 10.05 and 10.4). This study allowed characterizing four types of muscle fibers in the *N. granulata* claw closer muscle. I and IV types would be "extreme" groups: I fibers (large and peripherally distributed, weak and pH labile mATPase, weak SDH); IV (small and central, very strong and pH resistant mATPase, strong SDH). II and III types would belong to "intermediate" group. They are composed by two subtypes of fibers according to their size, the SDH and the pH stability of the mATPase. Concluding, the histochemical heterogeneity of fibers in the *N. granulata* claw closer muscle would be linked to the role that each cell type carries out.

## TECHNICAL DIFFICULTIES DURING THE DISSECTION OF THE LARGE GROUP OF THE *MUSCULI DORSI PROPII* IN HUMANS

Karlen H; Patronelli F; García S; Berrhau S; San Mauro M.

Cátedra de Anatomía "B", Facultad de Ciencias Médicas. Universidad Nacional de La Plata. La Plata, Argentina.

E-mail: [hugokarlen@hotmail.com](mailto:hugokarlen@hotmail.com)

Based in its anatomical complexity, the dissection of the large group of the *musculi dorsi propii* presents technical dissection difficulties. The superposition of muscles layers is one of them, creating difficulties for its approach, identification and systematic dissection. The objective of the present paper was to describe the technical difficulties found during the economical dissection process of the large group of the *musculi dorsi propii* in humans, made by layers following the dissection planes. For this purpose 10 adult human torsos preserved in 10% formaldehyde were dissected and the different muscular groups were identified. The technical difficulties found during dissection from the superficial layers to the deeper ones were: 1) localization of the individual layer between the *M. latissimus dorsi* fascia and the fascia *lumbodorsalis*; 2) separation of the *M. serratus dorsalis cranealis* and *caudalis* fascias from the *M. rhomboideus major* and *M. latissimus dorsi* fascias because of their superimposed location; 3) the finding of the separation plane between the *M. longissimus* and *M. iliocostalis* in the caudal region; 4) dissection of the accessory bundles that *M. longissimus* sends to *M. spinalis thoracis*; 5) identification of the *M. longissimus* accessory bundles that takes insertion in corpus vertebrae, its transverse processes and angulus costae. As a conclusion, the superimposed location of the fascias and the presence of accessory bundles are pointed out as technical difficulties found during the dissection of the large group of the *musculi dorsi propii* in humans.

## PULPODENTINAL COMPLEX ANALYSIS IN RATS AND HUMANS WITH COLLAGENASE TYPE II

Kohli A<sup>1</sup>; Postiglione G<sup>1</sup>; Pezzotto SM<sup>2</sup>; Poletto L<sup>2</sup>; Dávila H<sup>2</sup>.

1. Cátedra de Histología y Embriología; 2. Consejo de Investigaciones, Universidad Nacional de Rosario. Rosario, Argentina.

E-mail: [Aliciakohli@hotmail.com](mailto:Aliciakohli@hotmail.com)

Dental pulp is studied with colorations, while dentine inorganic aspects are studied using erosion technique; both tissues constitute the pulpodentinal complex. These tissues share the same connective nature, but it is difficult to visualize them together. Fixation of its organic components constitutes a difficulty, mainly for the odontoblast process located within the dentine. Our objective was to apply demineralization, elimination of collagenous fibers and the use of different colorations to visualize pulpal structures, odontoblasts and processes in human and rats' dentine. Thirty healthy human teeth extracted for orthodontic reasons from 6-18 years old both sexes' patients, and 12 jaws of inbred rats 12 weeks old were used. After extraction human teeth were injected with 10% formaline to fix pulp *in situ*. They were divided in a standardized way, decalcified in 8% nitric acid and the collagen fibers were eliminated with collagenase type II. Rats were sacrificed and jaws separated surgically, fixed in 10% formaline, demineralized, and treated with collagenase type II. All pieces were paraffin-embedded and 3 teeth's histological sections were stained with hematoxylin-eosin, PAS and Schmorl. Jaws' histological sections were stained with hematoxylin-eosin. The pulp-dentine junction was observed in teeth and jaws. Blood vessels and nerves, and the pulp odontoblasts were well preserved. The odontoblasts and the emergent processes were visualized with hematoxylin-eosin and PAS, while Schmorl coloration kept the emergent processes hidden by granulations. These results would make possible to develop an experimental model for the study of pulpodentinal complex dynamics during the carious process.

- 25 -

## INTRAUTERINE GROWTH RETARDATION IN RATS: BONE MODIFICATIONS AND SEXUAL DIMORPHISM AT BIRTH

Luna ME<sup>1</sup>; Quintero FA<sup>1,2</sup>; Cesani MF<sup>1</sup>; Fucini MC<sup>1,3</sup>; Guimarey LM<sup>1,4</sup>; Villanueva M<sup>5</sup>; Prio V<sup>6</sup>; Oyhenart EE<sup>1,2</sup>.

1. IGEVET, Facultad de Ciencias Veterinarias, UNLP- CCT La Plata; 2. CONICET; 3. Cátedra de Antropología Biológica IV, Facultad de Ciencias Naturales y Museo, Universidad Nacional de La Plata; 4. Cátedra de Radiología. FAO. UNLP. <sup>(4)</sup> Servicio de Endocrinología. Hospital SSM Ludovica – CICPBA; 6. Servicio de Diagnóstico por Imagen; Facultad de Ciencias Veterinarias. Universidad Nacional de La Plata. La Plata, Argentina.

E-mail: [lunamariaeugenia@hotmail.com](mailto:lunamariaeugenia@hotmail.com)

Intrauterine growth retardation (IUGR) is characterized by a reduction of the fetal growth rate. Most studies about IUGR analyze growth through an evaluation of birth weight. However, few of them investigate the postcranial skeleton. The objectives of this communication, based on an experimental study, were to evaluate: a) the IUGR effect on different bone segments at birth, and b) the specific responses in each sex. Wistar rats were divided in groups: control, IUGR and sham-operated. The IUGR was induced by partial bending of both uterine vessels at day 1 of pregnancy. The animals were X-rayed at birth. Humerus, radius and femur lengths and widths, and pelvic length and *inter-ischial*, *inter-pubic* and *pubic widths*, were measured on each Rx. Data were analyzed by ANOVA and LSD post hoc test. "F" values indicated significant differences for treatment in the majority of the analyzed variables and it showed no significant differences between sexes. Nevertheless, IUGR females in comparison to sham-operated individuals showed percentually smaller relative differences. In males, sham-operated and IUGR individuals showed significant differences in pelvic lengths and widths, humerus, radius, femur and tibia widths. In females, there were only significant differences for humerus widths, radius length and width and femur and tibia widths. It can be concluded that reduced placental blood supply caused a differential delay of the appendicular skeleton growth. Pelvic length was more affected than limbs' length. In turn, widths were more affected than lengths. Under more disadvantageous IUGR circumstances females were more affected than males.

- 26 -

## COMPARISON OF ROOT CANAL WALL DENTIN SURGICALLY PREPARED WITH AND WITHOUT USE OF ERBIUM-YAG LASER

Milat E; Basal R; Etchegoyen L; Procacci M; García Gadda B; García Gadda E; Cantarini M.

Cátedra de Radiología y Fisioterapia, Cátedra de Biología, Facultad de Odontología. Universidad Nacional de La Plata. La Plata, Argentina.

E-mail: [roxanabasal@yahoo.com](mailto:roxanabasal@yahoo.com)

The success of the endodontic treatment depends on a careful technique, proper cleaning and obturation. In 1975, McComb and Smith were the first to describe the existence of a smear layer after endodontic procedures in the root-canal system, comprised of hydroxiapatite, organic substances and a biofilm (matrix-embedded bacteria), and determined that its complete elimination is key to a successful obturation. The aim of this work was to demonstrate the efficiency of the Erbium-YAG laser in the removal of the smear layer of the root canal wall dentine. Erbium-YAG laser with a wavelength of 2940 nm was used in this study, targeting water as a chromophore and hydroxyapatite present in dentine composition. The laser was tested on 12 dental pieces, which were extracted and clinically and radiographically selected (with only one canal free of dilacerations or other dental anomalies), and endodontically treated. Then the pieces were marked and cut with a chisel in longitudinal direction, followed by metal coating in order to prepare them for SEM observations. The use of the Erbium-YAG laser had proved to be a useful and efficient tool in the removal of the smear layer of the dentinal wall.

---

- 27 -

## EXCEPTIONAL PRESERVATION OF THE BRACHIDIUM IN TERTIARY TEREBRATELLIDINES (BRACHIOPODA, RHYNCHONELLIFORMEA) FROM PATAGONIA

*Manceñido MO<sup>1</sup>; Griffin M<sup>1,2,3</sup>; Rodriguez Raising M<sup>2,3</sup>.*

*1. División Paleozoología Invertebrados, Museo de La Plata, La Plata, Argentina; 2. CONICET; 3. Facultad de Ciencias Exactas y Naturales, Universidad Nacional de La Pampa, Santa Rosa, La Pampa, Argentina.*

E-mail: [mmancenifcny@unlp.edu.ar](mailto:mmancenifcny@unlp.edu.ar)

The brachidium is a delicate and fragile internal skeletal structure possessed by many rhyntonelliformean brachiopods. Shaped like a thin ribbon made up of fibrous calcite, it hangs in continuity from the crura, and projects into the mantle cavity. Its function is to provide further support to the lophophore (food gathering organ bearing filamentous tentacles, also involved in respiration). In the case of fossil material, inasmuch as the structure was not severely damaged by biostratinomic processes (as often is), the main techniques for revealing brachidial shape are serial sectioning (when sedimentary matrix is lithified) or careful mechanical excavation (when surrounding sediment is friable enough). Brachiopod shells collected from the early Miocene Centinela Formation, cropping out near Lake Cardiel (Santa Cruz province), include fine specimens with their loops in exquisite three-dimensional preservation. As the shells were tightly closed and void, destructive or potentially risky procedures were unnecessary to expose the detailed morphology of such slender structures. This important finding is thus interesting from both morpho-anatomical as well as taphonomical viewpoints. The development and peculiar preservation of a loop showing descending and ascending lamellae plus transverse band joined in organic connection allow referring it to the teloform type, and support assigning the specimens among the terebratellidines. Besides, such brachidium morphology suggests that in life it was compatible with a lophophore having zygolophe up to plectolophe degree of complexity. A remarkable preservational feature is the unusual crystalline drusiform lining, product of diagenetic precipitation that coats the brachidium and the inner surface of both valves.

- 28 -

## DIFFICULTY DEGREE OF THE MEASURING INSTRUMENTS (MULTIPLE CHOICE) IN MORPHOPHYSIOLOGY

*Peñalva MA; Tosti SB; Cecho AC; Sambartolomeo PM; Domínguez G.*

*Facultad de Odontología. Universidad Nacional de La Plata. La Plata, Argentina.*

E-mail: [anahipenalva@gmail.com](mailto:anahipenalva@gmail.com)

After an evaluation has been being administered and scored, it is convenient to analyze each of its items. This procedure gives information about the degree of difficulty determined by the amount of correct answers provided by the student. The degree of difficulty is calculated dividing following number of correct answers by the total number of students. It varies between values close to 0 (when the item is difficult) or to 1 (when it is of low difficulty). We analyzed 8 multiple choice items taken by 99 Physiology course students of the Dentistry School. The degree of difficulty for the items under analysis were: 0.73; 0.46; 0.35; 0.42; 0.53; 0.50; 0.68; 0.83, respectively. The lowest difficulty item was number 8 whereas the most difficult was item number 3. This instrument should be correlated with other didactic elements in order to take decisions.

- 29 -

## INTERSTITIAL CELLS OF CAJAL IN THE JEJUNUM IN THREE STAGES OF DEVELOPMENT OF BOVINES

Márquez SG<sup>1,2</sup>; Galotta JM<sup>1,3</sup>; Gálvez GA<sup>2</sup>; Portiansky EL<sup>4</sup>; Barbeito CG<sup>4,5</sup>

1. Facultad de Ciencias Agrarias, UCA, Ciudad Autónoma de Buenos Aires; 2. CBC, Universidad de Buenos Aires; 3. Facultad de Ciencias Veterinarias, Universidad de Buenos Aires, Ciudad Autónoma de Buenos Aires; 4. Instituto de Patología; 5. Cátedra de Histología y Embriología, Facultad de Ciencias Veterinarias, Universidad Nacional de La Plata. La Plata, Argentina.

E-mail: [silviamarquez@gmail.com](mailto:silviamarquez@gmail.com)

The Interstitial Cells of Cajal (ICC) are involved in the regulation of the digestive system motility and are connected between them linking with myoenteric plexus and myocytes. They are subordinated to the Kit signaling pathway for their development and phenotype preservation. In the present work, to establish related- age changes the ICC presence, aspect and distribution in the jejunum were compared among fetuses, calves and adult bovines. Samples were taken from 20±2 week fetus, two week calves and Hereford cows and immunohistochemically treated with anti-c-kit/CD117 antibodies to specifically identify ICC. Anti-vimentine and anti-desmine were used as positive and negative controls, respectively. The detection method was LSAB, diaminobenzidine was the staining molecule. Samples were hematoxylin- counterstained. In all the studied cases ICC were found in relation to the myoenteric plexus (ICC-MP). ICC-MP showed a gradual decrease in the staining intensity with age. Their morphological aspect also changed with age. In fetuses, ICC-MP were scattered in the plexus, but they were gradually placed in the periphery during calf - adult stage transition in which these cells adopted their characteristic single-layered columnar palisade aspect. Besides, ICC were observed in both muscle-layers: ICC-LM and ICC-CM. The fetuses' ICC-LM were conspicuous, fusiform, adjacent. In calves and adults, ICC-LM were placed among the intermuscular septa. ICC/myocytes ratio diminished throughout the growing and development, therefore increasing the tunica muscularis. Based on the morphology, distribution, aspect and immunohistochemical staining we can conclude that those cells were ICC and that morphological and distributional changes occurred through development stages.

- 30 -

## MORPHOMETRIC STUDY OF GREATER RHEA (*Rhea americana*) EPIDERMIS: ONTOGENIC AND REGIONAL DIFFERENCES

Picasso MBJ<sup>1</sup>; Mario RC<sup>2</sup>; Barbeito CG<sup>2,3,4</sup>.

1. División Paleontología Vertebrados, Museo de La Plata, Universidad Nacional de La Plata; 2. Cátedra de Histología y Embriología; 3. Cátedra de Patología General Veterinaria, Facultad de Ciencias Veterinarias. Universidad Nacional de La Plata. La Plata, Argentina. 4. CONICET

E-mail: [mpicasso@fcnym.unlp.edu.ar](mailto:mpicasso@fcnym.unlp.edu.ar)

The greater rhea is a flightless and cursorial bird from South America. During the last decade the farming of rhea has received attention in Argentina and South America. Despite this, many aspects of their anatomy are unknown like their skin features. In this preliminary work, we studied morphometrically the *Rhea* epidermis during postnatal life. Skin samples were taken from three corporal regions: dorsomedial, antero-lateral and caudo- lateral in adults, eight month old female and chicks between 14 and 59 days of age. The samples were fixed in 10% neutral formalin and embedded in paraffin, cut with sledge microtome and stained with hematoxylin and eosin. The histological preparations were observed with a 40x magnification. Six images were taken in each sample and six measurements were performed on *stratum corneum* and nucleated cells. In all studied birds, the nucleated cells showed few layers (1-3). No differences between gender or corporal regions were found. The thickness of the *stratum corneum* increased mostly with age, this change could be related with variations in cellular differentiation that occur through postnatal ontogeny.

## INCIDENCE OF PLANKTONIC FLORA IN THE FORMATION OF BIOFILM ON THE SPITTING SINK

Butler T; Casariego Z; Fernández Lorenzo M.

Facultad de Odontología, Universidad Nacional de La Plata. La Plata, Argentina.

E-mail: [dikybutler@yahoo.com.ar](mailto:dikybutler@yahoo.com.ar)

Planktonic flora present in the water entrance to the dental equipment suffers significant changes when passing through the pipes of the same. These microorganisms associated with those from the saliva of the patients, are a real mixed biofilm on the internal walls of the spitting sink, and may act as routes of infection transmission. For the reasons stated above this work's main goal was to raise awareness among dental professionals about the importance of the implementation of safety standards and regular monitoring of water quality in dental equipment, to prevent the transmission of opportunistic pathogens. Fifty clinics from two different regions (Z1 and Z2) from the La Plata city were chosen. Twenty sections of spitting sinks were made and placed in the clinics for 24 and 48 hs. Routine microbiological methods were conducted. The UFC/ml and UFC/cm<sup>2</sup> analysis rendered a significant difference (P<0.05) in relation to the exposure time between planktonic and sessile flora. There was no significant difference between areas (Z1 and Z2). Results suggest that the lack of regular monitoring of water quality entering the equipment, their hygiene, the patients' saliva, as well as the physical and chemical characteristics of the materials (ceramics) in dental washbasin, induce the formation of a mixed biofilm able to carry pathogens of easy transmission to patients, practitioners and dental assistants.

## EVOLUTIVE HISTOLOGY OF THE LIVER IN VERTEBRATES

Plaul SE<sup>1</sup>; Andrés Laube PF<sup>1</sup>; Díaz AO<sup>2</sup>; Barbeito CG<sup>1</sup>.

<sup>1</sup> Cátedra de Histología y Embriología. Facultad de Ciencias Veterinarias. UNLP. Calle 60 y 118 s/n. La Plata (1900). Buenos Aires. Argentina. <sup>2</sup> Departamento de Biología, Facultad de Ciencias Exactas y Naturales. UNdMP. Funes 3250 3° piso (7600). Mar del Plata. Argentina.

E-mail: [splaul@museo.fcnyu.unlp.edu.ar](mailto:splaul@museo.fcnyu.unlp.edu.ar), [pfandres@fcv.unlp.edu.ar](mailto:pfandres@fcv.unlp.edu.ar)

Vertebrate's history developed along 550 million years. Some organs in the members of this group have a similar morphology independent of its habitat. We chose the liver as a structural model using shape, function, adaptation and natural selection. All classes of vertebrates have a similar liver histological structure, but the tridimensional architecture of stroma and parenchyma show differences. The objective of this work was to describe the adaptation of hepatic parenchyma along phylogeny to obtain a high efficiency. We used livers of Osteichthyes Characids (*Astyanax* sp., *Salminus brasiliensis*), Atherinids (*Odontesthes bonariensis*) and Cyprinids (*Cyprinus carpio*, *Carassius auratus*, *Ctenopharingodon idella*); amphibians (*Rana catesbeiana*); birds (*Fulica leucoptera*, *Gallus gallus*), and mammals (*Sus scrofa domestica*, *Cavia porcellus*, *Ratus norvegicus*, *Mus musculus*). Samples were fixed in formalin, and processed for paraffin embedding and hematoxylin - eosin staining. Microscopic observations explained how biliar canaliculus changed its position from central to intercellular throughout evolution. A simple pattern with hepatocytes arranged in tubules surrounding biliar canaliculus is found in cyclostomes. An intermediate pattern with hepatocytes disposed in layer to form tubes surrounding sinusoids is present in teleosts and amphibians. Finally, birds and mammals have adopted a radial pattern called muralium or trabecular with hepatocytes arranged in interconnected layers, resulting in a higher contact with hepatic sinusoids. In the two last patterns a central vein is present in the hepatic lobule. The characteristics of the hepatic structure from the different organisms are similar to other members of the classes previously studied.

- 33 -

## OSSEOUS GROWTH MODIFICATIONS EVOKED BY HORMONAL TREATMENT IN PRENATAL GROWTH RETARDED RATS

Quintero FA<sup>1,2</sup>; Luna ME<sup>1</sup>; Castro L<sup>2</sup>; Cesani MF<sup>1</sup>; Fucini MC<sup>3</sup>; Villanueva M<sup>4</sup>; Prío V<sup>4</sup>; Guimarey LM<sup>5</sup>; Oyhenart EE<sup>1,2</sup>.

1. IGEVET, FCV. UNLP- CCT La Plata, CONICET; 2. Facultad de Ciencias Naturales y Museo. UNLP; 3. Facultad de Odontología. UNLP, 4. Servicio de Diagnóstico por Imagen, Facultad de Ciencias Veterinarias. Universidad Nacional de La Plata. La Plata, Argentina; 5. Comisión de Investigaciones Científicas de la Provincia de Buenos Aires.

E-mail: [fquintero@fcnym.unlp.edu.ar](mailto:fquintero@fcnym.unlp.edu.ar)

It has been postulated that intrauterine growth retardation (IUGR) causes postnatal sex-dependent consequences. Experimental model of partial binding of the uterine arteries leads to modifications of fetal growth by placental insufficiency. The aim of this study was to analyze the postnatal growth of rats with IUGR treated with growth hormone (GH) and sexual hormones. Wistar rats were divided into the following groups: control, IUGR (induced by partial obstruction of the uterine arteries on day 14 of gestation) and sham-operated. The IUGR group was divided into the following subgroups: IUGR; IUGR plus GH (GH), IUGR castrated (Ca), IUGR castrated plus GH (Ca+GH), IUGR treated with testosterone (Te) and estradiol (Es). The animals were X-rayed at 1, 21, 42, 63, and 84 days of age and the following dimensions of bones were measured: the length, width, and height of the neuro- and splanchnocranium; the length of the vertebral column; the pelvic length and the upper, middle, and lower pelvic widths; and the lengths and the widths of the humerus, femur, and tibia. The data were analyzed by analysis of variance (ANOVA); multiple-range, minimal-significant-difference (LSD) and multiple-correlation tests. We concluded that IUGR modified every metrics variables in both sexes. The castration increased growth in females and inhibited growth in males. Testosterone produced a mosaic-effect growth in long bones while estradiol inhibited global growth. GH activity caused sex-dependent response.

- 34 -

## CLINICAL - EPIDEMICAL STUDY OF THE STOMATOLOGICAL LESIONS WITHIN A HOSPITAL UNITY

Rom M; Mercado M; Barilaro L; Bernardi H; Gimenez J; Salvatori M; Arcuri M; Micinquevich S.

Cátedra de Patología y Clínica Estomatológica, Facultad de Odontología. Universidad Nacional de La Plata. La Plata, Argentina.

E-mail: [monicagrom@yahoo.com.ar](mailto:monicagrom@yahoo.com.ar)

Due to its morphological features, the oral cavity is the location for different lesions and diseases, whether local or systemic in origin. This study was conducted to determine which were the most recurrent oral cavity's lesions and diseases that suffer both, outpatients and inpatients, from the hospital's Pathology unity. Different variables such as age, sex, occupation, condition and aetiology were analysed on a total of 90 patients assisted within a year, on a weekly basis (52 women, 38 men). Ages ranged from 2 to 87 years with a 52.7 average. There were 43 outpatients and 47 inpatients. One hundred and twenty seven cases of lesions and diseases were registered. Some of the most relevant were: superficial mycosis (10.23%) which involved immunosuppression; mucocele (6.30%) which was related to traumatic factors; leukoplakia (6.30%) which is a precursor lesion associated mainly with tobacco and alcohol consumption; aphthas (5.51%) which were observed mainly in patients who suffered from emotional tension, and diabetes (8.66%), a systemic disease, generally involving *Candida* in the oral mucous. We concluded that: 1) superficial mycosis were chiefly observed as a stomatological manifestation of systemic diseases in out and inpatients; 2) traumatic factors played a major role in lesions of different kinds such as tumour evolving without causing further damage (mucocele). The result of this study contributed to prioritise lesions and diseases that the dentist must diagnose in order to administer the appropriate treatment and handle preventive measures to protect oral health.

---

- 35 -

## INTESTINAL PARASITIC NEMATODES OF INSECTS AND THEIR ATTACHMENT STRUCTURES

Schargorodsky G; Achinelly MF; Camino NB.

Centro de Estudios Parasitológicos y de Vectores, CEPAVE (CCT-La Plata-CONICET-UNLP-CIC). La Plata, Argentina.

E-mail: [nemainst@cepave.edu.ar](mailto:nemainst@cepave.edu.ar)

The study of parasitic nematodes of crickets (Orthoptera, Gryllidae) in the Buenos Aires province (Argentina), showed a variation of specific genera *Blatticola* Schwenk and *Hammerschmidtella* Chitwood, all parasites of the insect's hindgut characterized by having attachment structures. The purpose of this study was to describe these structures and relate them to parasitism. Parasites were killed in distilled water at 60° C for 2 minutes and fixed in TAF (triethanolamine, formalin and water). Ultrastructural observations were performed under scanning electron microscopy (SEM JEOL JSM-100). Specimens were dehydrated in an increasing alcohol series and then coated in gold 24 in argon plasma. The anchoring forms found were the lateral alae and the presence of pointed long tail appendage or a short one ending in a concave structure, whose role could be related to the nematode fixing to the intestinal walls as an alternative to avoid being dragged along with faeces into the external environment.

- 36 -

## AGE-RELATED LOSS OF RED NUCLEUS NEURONS IN FEMALE RATS

Silva LB<sup>1</sup>; Piove ML<sup>1</sup>; Cambiaggi VL<sup>1</sup>; Goya RG<sup>2</sup>; Zuccolilli G<sup>1</sup>.

1. Instituto de Anatomía, Facultad de Ciencias Veterinarias, Universidad Nacional de La Plata; 2 INIBIOL, Facultad de Ciencias Médicas, Universidad Nacional de La Plata. La Plata, Argentina.

E-mail: [guoszucc@fcv.unlp.edu.ar](mailto:guoszucc@fcv.unlp.edu.ar)

Aging is a process that involves several mechanisms that become in morphological and biochemical changes. Age-related modifications observed in different areas of the nervous system are usually associated with behavioral changes. However, they are linked with other alterations, such as the muscle fibers decrease (sarcopenia), which promote a disabled motor activity. Mesencephalic red nucleus is a main structure to perform normal movements in mammals; therefore, neuron number changes in old animals may be associated with loss of muscle. The aim of this work was to compare the red nucleus neurons number in healthy rats at different ages. Therefore, three groups of Sprague-Dawley female rats, adult (aged 6 months), old (aged 24 months) and very old (aged 32 months) were used. Animals were anesthetized and perfused with a 4% paraformaldehyde solution by an intracardiac method. The brain was removed and trimmed down to a block containing the whole mesencephalon. The block was serially cut into coronal sections 40 µm thick on a freezing-microtome. The sections were stained with 1% Thionine, dehydrated and observed by optical microscopy. The neurons number was similar in the red nucleus of adult and old animals; however, very old rats showed an important lack of neurons compared with counterpart groups. In fact, during the last eighth month of life 26% of neurons that were present at 24 month of age disappeared. These observations suggested that during the last part of life neuron death by apoptosis is the main process accountable for loss of neuronal bodies.

- 37 -

## MICROSTRUCTURE OF ENAMEL: RELATED BIOMECHANICAL FACTORS

*Tanevitch A; Durso G; Abal A; Batista S; Anselmino C; Licata L.*  
*Facultad de Odontología, Universidad Nacional de La Plata. La Plata, Argentina.*  
 E-mail: [gracieladurso@yahoo.com.ar](mailto:gracieladurso@yahoo.com.ar)

According to Koeniswald, mammalian teeth enamel presents increasing degrees of complexity. Variability of prism morphology and enamel types in human teeth has been analyzed under Scanning Electron Microscopy (SEM). Samples have been embedded in epoxy resin, grinded, etched with hydrochloride acid, metalized and observed under SEM. Prisms in transverse sections presented a round, ovoid and key-hole shape, and in longitudinal sections they presented rounded rods of irregular diameter. They appeared arranged in rows or in a head-fitting-tail disposition; the interprismatic matrix varied from scarce to abundant. In the deciduous pieces aprismatic enamel was found on the outer surface, and the enamel type Hunter Schreger Bands (HSB) was found in the incisal and cuspal zone of anterior teeth and in the medial and cervical zone of posterior teeth. In permanent teeth, HSB were found in all the thirds, and irregular enamel was found in the premolar cusps. HSB and irregular enamel appeared in the inner area and were combined with the radial enamel adjacent to the outer surface; this disposition contributes to increase the resistance to abrasion and fracture. The variability in prism morphology depended on the section plane and crystal orientation. In transverse section, the shape of prism was sub circular, and the key-hole eye was observed when the section was not perfectly transverse. The identification of enamel types allowed to closely relate morphology to the biomechanical function and the type of diet.

- 38 -

## ASOCIATION BETWEEN MENARCHE AND ANTHROPOMETRIC CHARACTERISTICS IN GIRLS FROM LA PLATA CITY (BUENOS AIRES PROVINCE, ARGENTINA)

*Torres MF<sup>1,2</sup>; Orden AB<sup>3</sup>; Castro LE<sup>4</sup>; Cesani MF<sup>2</sup>; Luis MA<sup>4</sup>; Luna ME<sup>1</sup>; Quintero F<sup>4</sup>; Sicre ML<sup>4</sup>; Oyhenart EE<sup>2</sup>*  
*1. Facultad de Filosofía y Letra, Universidad de Buenos Aires, Ciudad Autónoma de Buenos Aires; 2. IGEVET; FCV. UNLP-CCT La Plata; CONICET; 3. IDIP (MS; CICPBA); CONICET; 4. Facultad de Ciencias Naturales y Museo. Universidad Nacional de La Plata. La Plata, Argentina.*  
 E-mail: [fernandatib@yahoo.com.ar](mailto:fernandatib@yahoo.com.ar)

The most conspicuous and unequivocal characteristic from the female sexual maturation is the menarche. This event has been profusely investigated, however in many populations we do not have updated information about the age of occurrence and the changes associated with the size and body composition. The aim of the present study was to analyze the incidence of the menarche in growth and body composition from girls from La Plata city, Buenos Aires province. In a sample of 1291 students aged from 8 to 16 years old were relevated the menarche presence and the following anthropometric variables: body weight, total and sitting heights, tricipital and subscapular skinfolds. Body mass (BMI) and subscapular tricipital (STI) indices and upper arm fat and muscle areas were calculated. In 34.2% of the evaluated girls the menarche was present, distributed between 10 and 16 years old with the mean age at 12.6 years old which was calculated by the status quo method. Sample was divided by menarche and chronological age into two developmental groups. Descriptive parameters were estimated in each group and were compared by ANOVA or Kruskal Wallis tests in accord to the variables distribution normality. Both maturative groups were significantly different in the majority of relevated and calculated variables. In relation to the developmental event is possible to conclude that a) the menarche mean age was not different with respect to the previous national data reports, and b) the menarche is a powerful discriminative factor for the intrapopulational growth and development.

## PREGNANCY GINGIVITIS: CONCENTRATION OF ESTROGEN AND PROGESTERONE IN PREGNANT WOMEN IN THE FIRST QUARTER

Tosti S; Baudo J; Dominguez G; Di Salvi N; Allegretti P.  
 Facultad de Odontología, Universidad Nacional de La Plata. La Plata, Argentina.  
 E-mail: [sobetis@yahoo.com.ar](mailto:sobetis@yahoo.com.ar)

In pregnancy the increase of the sexual hormone seric level is accompanied with a huge answer in gingival tissues to bacterial plaque. The aim of this work was to prove that the increase of the estrogens (estradiol) and progesterone seric levels are associated with gingival conditions of different seriousness. The sample included 60 women aged 18 - 30 years (30 non-pregnant women and 30 women in their first quarter of pregnancy). The control was achieved 7 days after prophylactic procedures. Gingival inflammation grade was determined by the Silness and Loe index (grades of 0-3 denoting absent, mild, moderate, and severe inflammation, respectively). Estradiol was detected by immunoassay and progesterone's metabolite, the urinary pregnadiol was monitored by direct radioimmunoassay t determination. A low grade of gingival inflammation was detected in all non- pregnant women. In pregnant patients 38% of them had low degree of gingival inflammation whereas 62% of them had moderate grade. The seric level of estradiol and progesterone was evaluated in the pre-ovulatory period in non-pregnant patients resulting in 50pg/ml for estradiol and less than 1ng/ml for progesterone. Measurements in pregnant women were performed during the third week post-ovulation; seric estradiol level was 150 - 500 pg/ml and progesterone level was higher than 20 ng/ml. The results indicated that the levels of sexual hormones affected directly the installation of gingival inflammation.

## VARIATION IN THE EXPRESSION OF CARBOHYDRATES BETWEEN DIFFERENT STRAINS OF *Tritrichomonas foetus* (T. FOETUS)

Monteavaro C<sup>1</sup>; Woudwyk M<sup>2</sup>; Doumecq ML<sup>1</sup>; Cuichi M<sup>1</sup>; Gimeno E<sup>3,4</sup>; Soto P<sup>1</sup>; Echevarria H<sup>1</sup>; Catena M<sup>1</sup>; Barbeito CG<sup>2,3,4</sup>.  
 1. Cátedra de Microbiología, Facultad de Ciencias Veterinarias Universidad Nacional del Centro de la Provincia de Buenos Aires;  
 2. Instituto de Patología y 3. Cátedra de Histología y Embriología, Facultad de Ciencias Veterinarias Universidad Nacional de La Plata. Buenos Aires Argentina. 4. CONICET.  
 E-mail: [barbeito@fcv.ulp.edu.ar](mailto:barbeito@fcv.ulp.edu.ar)

The bovine tritrichomonosis is a venereal disease that produces significant economic losses in many countries, including Argentina, due to the reduction in the number of pregnant animals in the cattle. The agent is the flagellate protozoa *Tritrichomonas foetus* which belongs to the kingdom Protista, subkingdom Dictyozoa, *Phylum* Parabasalia, class Trichomonadae, order Trichomonadida. *T foetus* is a pyriform-shaped protozoan and it is approximately 9 to 18 x 4 to 8 µm. It has an undulating membrane with 2 to 5 waves. In the pathogenesis of the disease the processes of adhesion between the epithelial cells of the genital organs of the female and the parasite are very important. In these processes both glycoconjugates found on the surface of protozoa as in the cells of the host are crucial. The present study examines, through lectin histochemistry, the pattern of carbohydrates of this protozoan from different strains. Smears were performed from culture broth and were incubated with the following biotinylated lectins: SBA, Con-A, UEA-I, PNA, RCA-I, DBA y WGA. Streptavidin was used for the detection of lectins, diaminobenzidine as chromogen and hematoxylin as contrast. The observation was made under immersion objective and the following cellular structures were considered: cytoplasm, undulating membrane, cell membrane and flagellum. There were significant variations in the lectin binding pattern of the undulating membrane, cytoplasm and the cell membrane between different strains of *T. foetus*. Future studies will relate these results with the *in vivo* and *in vitro* adhesiveness and pathogenicity.

---

- 41 -

## CARBOHYDRATES EXPRESSION ON THE LARGE INTESTINE OF RABBIT INTOXICATED WITH *Solanum glaucophyllum*

Zanuzzi CN<sup>1,2,3</sup>; Barbeito CG<sup>1,2,3</sup>; Lozza F<sup>1</sup>; Fontana PA<sup>1,3</sup>; Portiansky EL<sup>1,3</sup>; Gimeno EJ<sup>1,3</sup>

1. Instituto de Patología; 2. Cátedra de Histología y Embriología, Facultad de Ciencias Veterinarias. Universidad Nacional de La Plata. La Plata, Argentina; 3. CONICET.

E-mail: [carozanuzzi@fcv.unlp.edu.ar](mailto:carozanuzzi@fcv.unlp.edu.ar)

*Solanum glaucophyllum* is a toxic plant responsible for the enzootic calcinosis of ruminants, containing high levels of 1,25-dihydroxy vitamin D<sub>3</sub>. The chronic ingestion of these leaves induces a hipervitaminosis D-like state, with changes on mineral homeostasis, immunoregulation, and cellular proliferation and differentiation. During the cell differentiation process changes on carbohydrate expression occur and they can be studied by lectin histochemistry (LHQ). Taking into account the changes found in previously studies, we aimed to determine the existence of modifications in the colon and rectum of the intoxicated animals. Three months-old New Zealand male rabbits were orally intoxicated during 15 or 30 days. A third group was employed as control. Samples of colon and rectum were included in paraffin and sections were incubated with the following biotinylated lectins: WGA, CON-A, DBA, SBA, PNA, RCA-1 y UEA-1. In the colon we observed a reduction on DBA and SBA binding in the glycocalix of the surface epithelium and in a lesser extend, of the crypts. In the rectum we observed the same result with DBA, but no change was found with SBA. UEA-1 heavily bound to the superficial epithelium of intoxicated groups. There was a reduction on the expression of N-acetil galactosamine and an increase in  $\alpha$ -L fucose, carbohydrates specificities corresponding to DBA and SBA, and UEA-1, respectively. Vitamin D functions as a steroidal hormone and regulates the gene expression. We suggest that vitamin D could be participating on the regulation of genes that codificate for enzymes involved in the saccaride pattern.

<b>INDICE DE AUTORES</b>			
<b>A</b>		Castro L	33
Abal A	18-37	Castro LE	38
Abilleira E	16-20-21	Catena M	40
Achinelly MF	4-35	Cecho AC	3-28
Ale E	5-9	Cesani MF	8-25-33-38
Allegretti P	39	Cuartas E	17
Andrés Laube PF	1-32	Cuichi M	40
Anselmino C	12-37	<b>D</b>	
Arcuri M	34	Damborenea SE	15
Arzone CA	2	Dávila H	24
<b>B</b>		de la Sota ER	10
Barbeito CG	1-19-29- 30-32-40-41	De Locca S	16-20-21
Barilaro L	34	Di Salvi N	39
Basal R	5-9-26	Díaz AO	11-22-32
Batista S	7-12-37	Diessler ME	14
Baudo J	39	Domínguez G	28-39
Bernardi H	34	Dominguez GE	3
Berrhau S	23	Dorati P	5
Blanco C	2	Doumecq ML	40
Bustamante C	16-20-21	Durso G	12-18-37
Butler T	5-9-31	<b>E</b>	
<b>C</b>		Echevarria H	40
Cabrera J	18	Echevarría J	15
Cambiaggi VL	36	Etchegoyen L	26
Camino NB	4-35	Eyheramendy V	11
Cantarini M	26	<b>F</b>	
Casariago Z	31	Farias NE	17
Castellano MC	13	Felipe AE	11
		Fernández EN	18
		Fernández Lorenzo M	31

Fingermann G	16-20-21		<b>L</b>	
Flores OB	14	Lazo G		9
Fontana PA	41	Licata L		37
Fucini MC	25-33	Llompart G		12
	<b>G</b>	Longo MV		22
Galotta JM	19-29	Lozza F		41
Gálvez GA	19-29	Luis MA		38
Garbossa G	8	Luna ME		25-33-38
García AM	11		<b>M</b>	
García Gadda B	26	Manceñido MO		15-27
García Gadda E	26	Mancuso P		16-20-21
García Romero N	1	Mario RC		30
García S	23	Márquez SG		19-29
Genoud P	2	Martínez C		7
Gimenez J	34	Martínez OG		10
Gimeno E	40-41	Martínez RD		18
Giudice GE	10	Mayocchi K		6
Gómez M	6	Mazzeo D		16-20-21
González A	5	Medina L		5
González SE	4	Mercado M		34
Goya RG	36	Micinquevich S		5-34
Griffin M	27	Milat E		26
Guimarey LM	25-33	Monteavaro C		40
	<b>I</b>		<b>O</b>	
Iantosca A	5	Orden AB		38
Idiart JR	13	Oyhenart EE		8-25-33-38
Irigoyen S	16-20-21		<b>P</b>	
	<b>K</b>	Patronelli F		23
Karlen H	23	Peñalva MA		3-28
Kohli A	24	Pezzotto SM		24

---

Picasso MBJ	30		<b>V</b>	
Piove ML	36	Vidal R		2
Plaul SE	1-32	Villanueva M		25-33
Poletto L	24		<b>W</b>	
Portiansky EL	13-19-29-41	Woudwyk M		40
Postiglione G	24		<b>Z</b>	
Prío V	25-33	Zanuzzi CN		41
Procacci M	26	Zuccolilli GO		36
<b>Q</b>				
Quintero FA	25-33			
Quintero F	38			
<b>R</b>				
Rodriguez Raising M	27			
Rom M	34			
<b>S</b>				
Salvatori M	34			
Sambartolomeo PM	3-28			
San Mauro M	23			
Schargorodsky G	35			
Segatto R	16-20-21			
Sicre ML	38			
Silva DT	14			
Silva LB	36			
Soto P	40			
<b>T</b>				
Tanevitch A	12-37			
Torres MF	38			
Tosti S	39			
Tosti SB	3-28			