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1.

AMELODENTINARY EROSIONS IN TOBA CRANIUMS

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Thirteen *craniums* of Toba natives were analyzed. The craniums are kept in the Anthropology Division in the Faculty of Natural Science and Museum (UNLP), and came from the north of our country. An escopic analysis of the dental pieces was performed and their amelodontinary erosion degree was established. The results were transcribed to registry forms and from that information contingency tables were made. Absolute and relative frequencies of the pieces were provided, considering the dental piece and its position in the corresponding osseous piece, and the degree of erosion of the piece (degrees 1-6). From a total of 118 teeth studied, 54 of them (45.76%) had degree 1 amelodontinary erosions; 53 out of the 118 teeth (44.92%) had degree 2 erosions; meanwhile only 8 teeth (6.78%) had degree 3 erosions. Only one case (2.54%) with erosion greater than degree 3 was found; it presented degree 6 erosion. The results obtained were analyzed by dental arch and the dental piece type employing the z test of signification. The sample under study showed a different behavior when compared to previous works in Argentinean Rio Negro natives. The results were analyzed according to ethnohistorical and ethnographical information about Toba natives to account for their way of living, their diet and technological development in food processing.

2.

PARACONULE STUDY ON AN ARGENTINIAN ABORIGINAL CRANIUM SERIE

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Since long time, biological anthropology has turned to dental studies for the characterization of populations, their relations and affinities. These studies have been maintained over the base of diverse metrical and non-metrical variables. Paraconule is a character in form of small cusp, located between the protocone and the paracone in the upper molars. It has been studied in the majority of the world populations although it's variable presence for being of small size and easily worn down by the attrition processes. In the current communication the results obtained in the paraconule study in an Argentinean *craniums* series are presented. The study was performed on 469 adult *craniums* of Argentinean natives, belonging to the Anthropology Division in the Natural Science Department and Museum (UNLP). It comprises individuals from a great part of the geographical Argentinean territory. Paraconule presence or absence was registered in first and second upper molars and their relative frequencies were calculated. Statistically significant differences were analyzed by the z test. The z value found was -0.35116951 and it resulted significantly minor than the limits of trust ± 1.96 established for a $p < 0.05$. No previous studies on this character were found in the literature, rendering this information new and of great importance for the research on the Argentinean natives' dentition characteristics.

3.

QUALITATIVE AND QUANTITATIVE VARIATIONS IN THE VAGINAL EPITHELIUM OF MYOCASTOR *Coypus bonariensis* (COYPU) DURING THE ESTROUS CYCLE

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The aim of the present work was to characterize qualitative and quantitative changes in the vaginal epithelium of the coypu (*M. c. bonariensis*) during the estrous cycle. Twelve females under farm breeding conditions were used. Daily colpocytological examinations were performed. After sacrifice, a macroscopical observation of the vaginal mucosa was performed, recording its coloration and hue, and the presence and appearance of content. Samples of three vaginal sections (cephalic, middle and caudal) were fixed in Bouin's liquid. Morphologic analysis (thickness, number of layers and type of superficial cells) of the vaginal epithelium was performed. The mean duration of the cycle was 36.8610.52 days, ranging from 20 to 60 days. The external genitals showed non-observable aspect and coloration changes at raw eye. As to the vaginal epithelium thickness, statistically significant variations ($p < 0.001$) between all the cycle stages were observed. The greatest epithelial thickness was observed in the proestrus and the smallest in the metestrus. Analyzing variations in the epithelial thickness within each stage of the cycle, and considering the different sections sampled, no significant differences were observed between them in the proestrus and estrus. The superficial cellular type in the proestrus and estrus was squamous, prevailing basal and intermediate cells in the metestrus and diestrus. In these two stages and in all the animals, areas with squamous cells were observed.

4.

OVARIAN ALTERATIONS IN TWO CYPRINIDAE SPECIMENS

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When great amounts of eggs cannot be expelled from the ovary, this organ is incapable to reabsorb them and the oviduct opening becomes plugged by a connective tissue mass. Two Cyprinidae specimens, one *Carassius auratus* (goldfish) and one *Cyprinus carpio* (koi carp) were sent to the Service of Pathology from a local fish farm. Signs observed in both cases were similar: unbalanced swimming, abdominal distension and anorexia. At necropsy examination, in both cases, the ovaries presented a lobulated surface and an increased size. The koi carp's ovary presented a reddish brown coloration and a solid consistency, the *Carassius auratus* specimen showed a translucent coloration and gelatinous consistency. Ovaries samples were fixed in 10% buffered formalin, processed for paraffin inclusion and subsequently stained with haematoxylin and eosin, Masson's trichromics, Giemsa stain and PAS technique for histopathological studies. Microscopic observation revealed that the koi carp ovarian structure was altered; it showed ovarian follicles absence and presented a massive connective tissue proliferation with collagen fibres prevalence lacking a uniform distribution pattern. A massive inflammatory infiltration was also observed. Goldfish ovarian samples presented haemorrhagic and oedematous areas forming big PAS negative cavities as well as an inflammatory condition. Based on the detection of similar inflammatory cell populations and the collagen rich-connective tissue from the koi's ovary, these microscopic findings led us to consider that both specimens were experiencing a fibrosis process but in different states of evolution.

5.

**EXTERNAL MORPHOLOGY OF *BLATTICOLA* SP.
(NEMATODA, THELASTOMATIDAE) A PARASITE OF CRICKETS OF GRAN LA PLATA**

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The study of insects infecting crops in Gran La Plata, Buenos Aires, showed the presence of a numerically significant population of crickets; identified as *Anurogryllus muticus* De Geer. The nymphs presented a great abundance of nematodes parasites of the genus *Blatticola* Schwenk. The samplings were realized systematically in a weekly way throughout 3 years. Insects were dissected under a stereoscope microscope to obtain the parasites. The nematodes were killed in distilled water at 60°C during 2 minutes and fixed in TAF (trietanolamine, formaldehyde, distilled water), dehydrated and metallised in gold 24 in plasma argon. Ultrastructure observations were performed by scanning electronic microscope (SEM) JEOL JSM-100. In males, as distinctive character of this species, 4 pairs of genital papillae were recognized (1 pair in pre-anal position, 1 ad-anal pair, 2 post-anal pairs). On the other hand the cloacal opening was observed opened due to its simplicity and a rudimentary esclerotized espicule. Another diagnostic characteristic was observed in females: the vagina morphology which presented the posterior lip with a major thickness, which might relate to the weakness of the male espicule. The tail appendage registered in both sexes a thin, conical, short and sharp-pointed form. Likewise in the previous end it was possible to recognize the triangular opening of the stoma, a well-visible miolabio and the presence of 8 cephalic papillae of medium size. The SEM observation on *Blatticola* allowed a reliable separation of this specimen from others related of the same genus whose hosts also correspond to blatarids.

6.

DIDACTIC RESOURCES IN THE TEACHING OF THE HUMAN VENTRICULAR SYSTEM

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Cerebral ventricles form a system of hollow cavities inside the brain. Their complex distribution makes difficult not only their teaching but also the comprehension of their spatial localization, real dimensions and relationships. In this communication we wish to show and document the teaching of the ventricular cavities anatomy employing different didactic resources. A ventricular polyester resin mould was made using an adult human brain as matrix. Cavities were presented through axial, coronal and sagittal slices, and were then related to radiological images and endoscopic videos, which allowed us to show the cavities in real time. An inquiry was used, which consisted of three parts: one about student evaluation, a second part dedicated to teacher evaluation and finally one concerning the learning and teaching process evaluation. According to the inquiry results we thus concluded that the ventricular mould was optimal for teaching the tridimensional ventricular system; it allowed showing its different cavities, its projections and the traces it produces on adjacent structures. Endoscopic videos and radiological images were excellent to compare anatomical features observed with the other techniques. Ventricular morphology is difficult to teach through simple nervous system preparations. The simultaneous use of moulds, videos and radiological images facilitated the teaching and the learning of the brain cavities.

7.

**UNDERSTANDING EMBRIOLOGY: A TEACHING STRATEGY
BASED ON THE STUDENTS' CONCEPTIONS***Felipe AE.**Dpto. Cs. Biológicas, Fac. Cs. Veterinarias, UNCPBA, Campus Universitario (B7000GHG) Tandil, Buenos Aires, Argentina.*E-mail: aefelipe@vet.unicen.edu.ar

The aim of the present work was to describe a teaching sequence based on the processes of re-elaboration of conceptions and construction of external representations of embryology's contents in a context of iterations between students of Veterinary Medicine. Twenty-one freshman students who had finished the course of Histology, Embryology and Teratology and were preparing the final exam were included. The designed and applied sequence involved strategies to developing cognitive and metacognitive abilities. The main teacher's roles were to organize the conditions and provide learning procedures and resources. Students' productions were evaluated to promote corrections by the students themselves in a recursive way, achieving an adequate progression in the elaboration of descriptions and figures and the learning of the formulation of explanations by reference to different levels of organization. Hence, it is intended to work with and from students' conceptions to promote (not to impose) their modification by: 1- the use of didactic means as a mediation on documents (books and printed material), 2- incorporating actions that favor relations between accumulated information (schemes, models, problems, etc.) and 3- promoting the mobilization of new knowledge, i.e., its use in different situations.

8.

ANATOMIC FOUNDATIONS OF TEMPORAL UNCUS HERNIATION*Acuña M; Larrarte G; Pérez M; Folgueira AL; Manganiello SA; Galano S.**Instituto de Morfología J. J. Naón. Unidad de Neurociencias y Centro de Neuroanatomía, Iª Cátedra. Departamento de Anatomía, Facultad de Medicina, Universidad de Buenos Aires.*E-mail: marceloacuna@fibertel.com.ar

Intracranial occupying space lesions cause pressure cones which lead to encephalic tissues displacement resulting in encephalic herniation. Mainly, this is produced by temporal masses displacing themselves downwards and medially, with a consequent protrusion of the *uncus* towards *tentorium*. The objective of this investigation was to establish an anatomic-clinical correlation in the temporal *uncus* herniation by the visualization of displaced anatomical structures and clinical histories analysis. Three human brains belonging to the Naon Morphological Institute collection were employed. One organ contained a parietal tumor; other carried a temporal mass whereas the third brain showed no macroscopic lesions. Encephalic slices were compared given special importance to changes occurred during temporal herniation and obtaining clinical conclusions. The parietal tumor caused a pressure cone which led to displacement of the lateral ventricle and temporal *uncus*. In its displacement it compressed the oculomotor nerve, producing its paralysis, and the brain stem, with reticular system distortion and consequent coma. The temporal tumor provoked *uncus* displacement, collapsing the perimesencephalic cisterns, and compressing the third nerve and the brain stem. In normal brain slices, the mentioned distortions were not observed. Bio-structural knowledge is a priority to comprehend physiopathology and clinical basis behind morbid processes. The images sequence presented allowed us to recognize the compromised structures in uncal herniations and facilitated the learning of this entity.

9.

DENTAL PALEOPATHOLOGY PROFILE IN AN AMERINDIAN POPULATION OF ARGENTINA

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Oral pathology studies and its paleodemographic analysis are important to the reconstruction of past life. This investigation was performed on previously sex and aged determined *craniums* (15) and *calvariums* (19) from the Pampa Grande Collection (La Plata Natural Science Museum, Argentina). The following pathologies were monitored by standardized methodologies in *ad hoc* registration cards: caries, alveolar resorption (slight, moderate and severe), occlusal wears and hypoplasia incidence. Out of 298 teeth studied (169 female, 129 male), 45 were *ante-mortem* teeth lost and 37 non-erupted dental pieces. Forty three caries were found (27 female, 16 male). Alveolar resorptions found were 6/7 slight, 7/4 moderate and 7/4 severe (women and men, respectively). Occlusal wears results using the Mode were: (anterior/posterior sectors) grades 2/4-16 and 5-6/4-14 for females and males, respectively. Moderate hypoplasia were detected in 3 female and 3 male *craniums* using Jacobi and Collins index. A low incidence of caries, moderate horizontal alveolar resorption, slight occlusal wears and vertical striations predominance founded, are in accord to the assigned mixed economy dietary habits of this extinct population.

10.

ANATOMY AND HISTOLOGY INTEGRATED TEACHING FOR DENTISTRY FIRST YEAR STUDENTS

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A team of teachers from the Anatomy, Histology and Pedagogic Consultantship areas in the Dentistry School (Córdoba National University) planned and developed since 2002 an integrated teaching (IT) experience for first year students. The purposes were: to facilitate the integration between the anatomical and histological aspects of the stomatognathic system, to promote an appropriate motivation in students, to guide the transfer from comparable situations to those of their future professional work, and to stimulate the development of manual abilities and complex thought processes. In 2004, a group of 32 students with good previous academic record participated in the IT experience. 32 students with similar antecedents studied Anatomy and Histology separately (control group). IT was carried out in seven weeks, concluding with an *in real situation* evaluation for the accreditation of the two subjects. The educational team developed every week a theoretical class and two practical classes based on problematic situations with clinical projection. IT and control group students' academic achievements were comparatively analyzed. IT students showed better preparation to solve the problematic situation outlined in an evaluation that both groups should carry out. 53.12% of IT students achieved the total promotion of the two subjects; the percentage in the control group was much smaller (15.62%). In the *in real situation* evaluation, IT students demonstrated knowledge understanding and integration, and capacity to select, organize and communicate information. The results indicate that IT contributes to significant learning and development of appropriate abilities for a future Dentist.

11.

PARANASAL SINUSES AND DIDACTIC RESOURCES

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Paranasal sinuses are pneumatized cavities adjacent to nasal fossae. In number of four, they are displayed within the cranial bones. Their main functions are: to lighten the cranial weight, to participate in phonation and those related with immunity. The goal of this communication were to show different teaching techniques in order to facilitate the comprehension and the teaching and learning processes. Three skulls were used; one of them was injected with colored materials to reveal adjacent hollow bony structures. Formalized adult cadaveric material was sectioned in different spatial planes, together with sphenoid sinus silicone moulds and endoscopic images of the cavities. Sinusal structures were correlated with neuroradiological images. The didactic resources utilized allowed a better appreciation of the cavities situation and relationships to adjacent structures. The maxillary sinus was detected as the biggest cavity, with its pyramidal shape and in relation to dental roots. The relationship between ethmoidal sinuses and orbitary structures, optic nerves and intracavernous carotid artery was clearly displayed, and also the tight reciprocity between the frontal sinus and the *endocranium*. The teaching of sinusal cavities was facilitated by these diverse didactic resources. The relation among adjacent elements was shown and the inclusion of pathological and surgical data stimulated and improved the learning process.

12.

**EVALUATION RESOURCE IN DIGITAL SUPPORT
FOR HISTOLOGY AND EMBRYOLOGY STUDENTS**

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A new modality with the purpose of optimizing the Histology and Embryology course Unit II evaluation was planned and implemented, in order to stimulate a student's dynamic and autonomous work and to avoid the stress state due to long waiting. This evaluation activity consisted on a digital atlas designed in Microsoft PowerPoint software with histological pictures, diagrams and short-answer questions about different topics to evaluate. It was to be completed in an annexed sheet of paper. Digital resource was installed in a server PC with 19 PC connected in net from Dentistry School classroom. Each student could access from his PC to the assigned personal file. The resolution of the evaluation implied to observe and to identify the illustrations, and to answer the respective questions during the habitual schedule of practical classes. In a 30 minutes time, the student could implement his own working rhythm and could examine the 6 images of the test several times. With this methodology the time required to complete the test was optimized; and at the same time the stress generated in students and teachers by the long delays in the reception and correction of the evaluation was minimized, unlike it happened with the previously used individual oral evaluation modality.

13.

CAROTID CANAL MORPHOMETRY

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In the present work a morphometric study of the carotid canal external opening was performed. The aim was to determine the existence of significant differences between right and left side diameters carotid canal. Materials included 30 skull bases from the First Chair of the Anatomy Department and Neurosciences Unit (School of Medicine, Buenos Aires University). FECIT calibres were employed to measure the major and perpendicular diameters of foramens. Data storage and processing was performed using Microsoft Excel software. Results were expressed by different statistical functions, such as geometric average and relative frequencies, among others. A Student's test was carried out to evaluate the statistical signification of differences. A significant difference ($p = 0.0116$) between the major diameters from left and right sides carotid canal. Nevertheless the differences found between the perpendicular right and left diameters were not statistically significant ($p = 0.1133$). By these results, it is concluded that the significant differences between the right and left diameters of the carotid canal external opening are to be assigned to their major diameter and not related to their differences in the perpendicular diameter.

14.

EVALUATION OF THE DIDACTIC RESOURCES EMPLOYED IN CELL BIOLOGY TEACHING: THE GRAPHICAL MATERIALS

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Cell Biology is a first year Veterinary Sciences career obligatory course. It was first dictated in 2006; due to its innovating character exercise booklets were specially designed. In this communication we present the criteria followed in the booklets elaboration and their evaluation by professors and students, with particular reference to graphical materials. The formats adopted for exercises were diverse, mainly: schemes and texts filling; short answer, multiple choice and true or false questions; discussion of scientific texts. This first group of activities is related to the data and concepts processing, retention and retrieval. For the development of learning strategies and abilities, other tasks were included: images interpretation to facilitate the appropriation of highly theoretical contents, short text writing, mainly paragraphs dealing with scientific terms and low complexity problem solving situations related to the veterinary professional labor. The booklets evaluation was performed by a students' questionnaire and a professors' self-evaluation. 184 students answered the questionnaire. The appreciation for the work with images in the practical activities was highly favorable (73.30%), favorable (25%) and little favorable (1.70%). The self-evaluation was filled-in by 11 professors. Nine professors (81.82%) evaluated the graphical materials as a great aid for their practices. Our satisfaction for the results, a favorable general valuation of the booklets produced for this course is reflected in the following commentaries about the best aspects of the printed materials: "illustrations to complete" (student N°18); "It had images with which it was easier to remember the contents" (student N°96). Goethe in the XVIII century when observing a palm tree, which is the title of this communication.

15.

**CUTICULAR ULTRAESTRUCTURE OF TWO AFRICAN SPECIES OF
Chordodes GENUS (NEMATOMORPHA): *Chordodes clavatus*, LINSTOW 1906
AND *C. digitatus*, LINSTOW 1901**

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To date about 90 species of *Chordodes* have been described around the world, 35 of which occur in Africa. The cuticle of *Chordodes* species contains a higher diversity of structures compared to other genera of Nematomorpha. Characteristics for the genus are crowned areoles. Most of the African species of *Chordodes* were incompletely described and without photographic register, that made necessary a deeper reinvestigation of this species in order to establish their validity. We investigated by scanning electron microscope (SEM), the holotypes of two African species of *Chordodes*: *C. clavatus* and *C. digitatus*. Parts of the central region of the body (about 5mm in length) were dehydrated in an increasing ethanol series, critically point-dried, mounted on bronze blocks and gold-sputter coated. Observations were performed using a JEOL JSM 6360 LV scanning electron microscope. *C. clavatus* males showed five types of areoles whereas *C. digitatus* showed four. *C. clavatus* and *C. digitatus* had simple, tubercle, circumcluster and crowned areoles. *Chordodes clavatus* displayed another areolar type, thorn areoles. Both species showed sexual dimorphism: females, besides presenting crowned areoles with short filaments over the whole cuticle, possessed crowned areoles with long filaments only on each side along the ventral midline. The cuticular characteristics shown by *C. clavatus* and *C. digitatus* allowed considering them as valid species.

16.

**THE INTERPRETATION ON CORM AXIS
OF THE MOST PRIMITIVE FERNS AND ALLIED PLANTS**

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The objective is, taking as an example, *Selaginella-novae-hollandiae*, try to resolve the question around the nature of the rhizophores. This chosen taxon is placed in the great group of Lycopods, Selaginellas and Isoetes, plants that during the evolutionary process were going away very early from ferns and spermatophytes, to the point of arising presumption of a diphytelic origin for vascular plants. We have concluded that these always discussed organs in *Selaginella*, with the three well-known interpretations - root/stem/ " sui generis organ" - are very specialized shoots, dimorphic stems? having endogenetic-developed roots at their ends. This is in accord to the evidence given by protein electrophoretic proof - shown in the bibliography- and their stem structure. The presence of rhizophores, are not only occurring, at least like lateral specialized organs but a conversion, along terminal portion, of the common shoots in *S. novae-hollandiae* from the southern Yungas. Other few *Selaginella* taxa introduce hesitation on the primary homorhizic condition, the bipolarity of the corm and the absence of rhizophores. *Isoetes* species with secondary growth have rhizomorphs instead of rhizophores and these organs are not really homologous applying the criteria of position. Again, an unclear setting between stems and roots was appearing on primitive plants.

17.

HISTOLOGICAL DESCRIPTION OF THE ENDOCERVIX AND EXOCERVIX OF COYPU (*Myocastor coypus*) DURING THE ESTROUS CYCLE

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The aim of the present work was to qualitatively and quantitatively analyze the epithelia of the coypu's endocervix and exocervix at estrous cycle different stages. Three samples in the following stages were collected: proestrus, estrus, metestrus and diestrus - 5, 10, 20 and 30 days postestrus (d.p.e.)-. Analysis of the epithelium consisted in determining thickness and layers number, high and shape of superficial cells and counting of intraepithelial lymphocytes (IEL). In all the stages, endo and exocervical epithelia were stratified. In the proestrus, superficial cells from the endocervix were cylindrical with oval nuclei and of secretory aspect. In the exocervix, superficial cells were cubical with rounded nuclei. In estrus, the endocervical epithelium showed cylindrical cells of secretory aspect with flattened and basal nuclei. The exocervix showed desquamation of squamous cells. As to the number of layers of the exocervical epithelium, significant differences ($p < 0.001$) between proestrus and the other cycle stages were observed. Estrus showed significant differences ($p < 0.001$) compared to proestrus, metestrus and 5 d.p.e. diestrus, but not with 20 and 30 d.p.e. diestrus. All the stages showed significant differences ($p < 0.001$) in the height of the exocervical epithelium. During the estrus, the IEL number in the endocervix was higher than in the exocervix, where the counting was the lowest. The highest IEL counting for the exocervix was in the 10-d.p.e. diestrus.

18.

CIRCADIAN RHYTHM OF THE VEGF EXPRESSION IN THE ADULT MOUSE LIVER

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Blood vessel proliferation is a fundamental requirement for normal and tumoral tissues development. VEGF is a mitogen and angiogenic factor that promotes the existence of vascular vessels. The objective of the present study is to determine the presence of a circadian rhythm of VEGF expression in hepatocytes from adult mouse intact liver. For this purpose 69 (34 female and 35 male) C3H/S 90 days old mice standardized for periodicity analysis were used. Animals were divided into lots of males and females ($n=5-6$) and sacrificed at 00:00, 04:00, 08:00, 12:00, 16:00 and 20:00 h. At necropsy liver were removed and processed for the immunohistochemical technique with the primary antibody VEGF (C-1) mouse monoclonal IgG_{2a} and hematoxylin counterstain. The reaction was developed using diaminobenzidine. Results were expressed as $X \pm SEM$ and were analyzed by Anova and Newman-Keuls tests. Male mice showed a highly significant differences in VEGF expression ($p < 0.0002$) whereas it resulted significant at $p < 0.05$ for females. No significant differences in the VEGF expression between males and females for the same time-point were found; however the highest and the lowest expression values were coincident for both sexes (20:00h and 04:00h, respectively). These findings corroborated our hypothesis on the existence of a circadian rhythm in VEGF expression in hepatocytes from adult intact female and male mice.

19.

**SHOVEL-SHAPED TEETH IN A FORMOSEÑA POPULATION
OF THE GREAT CHACO (ARGENTINA)**

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Upper incisors may display a shovel shape in their lingual face; the name of this characteristic comes from the teaspoon form or shovel. The interest of this feature is that it is a mongoloid characteristic. Since Hrdlicka in 1920 informed on the shovel-shaped incisors, this phenomenon has been considered a teething mongoloid feature. Its high prevalence has been registered among the Eskimo, North American Indians, and Indians from Brazil, Venezuela and Chile. The prevalence of this teeth type was investigated, by inspection, in 115 children and adolescents between 6 and 12 years from a population of Laguna Yema (Formosa province, Great Chaco, Argentina). The total incidence of shovel-shaped maxillary incisors found was 41.73%. This indicates miscegenation with mongoloid populations, in this case indigenous populations. This result led us to think that the mongoloid component is not entirely present in the population under study as it has been observed in other populations from Argentina; v. gr. in Tastil (1973) this trait was found in 100% of the population surveyed. As far as these results allow, the indigenous population cannot be determined but they indicate a clear miscegenation.

20.

GLYCOCONJUGATES IN GILLS OF *Apareiodon affinis* (Steindachner, 1879)

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As part of our research in the glycoconjugates (GCs) determination on teleosts, the purpose of this work was to analyze the carbohydrates composition in the gills mucous cells of *Apareiodon affinis* of the hydrographic basin of the middle Uruguay River, in Uruguaiana, Rio Grande do Sul, Brasil. The gill samples were processed according to the classical methodology for paraffin inclusion. To localize GCs the following techniques were employed: 1) PAS: GCs with oxidizable vicinal diols, 2) PA*S: sialic acid and some of their chain variants, 3) KOH/PA*S: total sialic acids, 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. A cellular type that secretes neutral, sialilated and sulphated GCs was identified. The different types of GCs detected in the mucous cells proved a high level of histochemical complexity related with the diverse functions that the mucosubstances found in fresh water fishes play. The sulphated GCs were associated with a lubrication action while the sialilated GCs indicated a protection function against exogenous agents. The GCs with oxidizable vicinal diols would control mucous secretion acidity content. Moreover, the neutral GCs were associated with other activities, like cellular recognition and reception of chemical information. In conclusion, the high heterogeneity occurring in glycoconjugates from gills of *Apareiodon affinis* would contribute to cover various functional roles.

21.

HUNTER SCHREGER BANDS IN HUMAN ENAMEL

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The changes in prism direction within bands were observed under the Scanning Electron Microscope (SEM), where prisms can be seen in transversal and longitudinal planes. Studies on the mammalian enamel microstructure have long regarded Hunter Schreger Bands (HSB) as a specific type of prism decussation which precisely defines an enamel type which is characteristic of placentals following complexity levels of the enamel developed by W. von Koenigswald. The purpose of our work was to determine the occurrence and frequency of HSB in human enamel under the SEM. Ten extracted human teeth were included in epoxy resin, worn out in specific planes (transversal and longitudinal) by means of decreasing-grained polishing powder, treated with acid (10% HCl), and coated for their study under the SEM. We were able to register HSB in 50% of the samples in panoramic view, and in 60% of them under larger enhancement. HSB were observed in 80% of longitudinal planes, while in transversal planes HSB were observed in 20% of the samples at panoramic views, while 40% of them showed HSB under higher magnification. We conclude that (1) HSB are more frequently observed in longitudinal sections. (2) In some cases HSB appear as rows of prisms in alternating longitudinal and transversal sections, while in other cases it can be registered a less noticeable change in nearby layers, lacking the characteristic band-like aspect. From an adaptive perspective, it can be concluded that these changes in prism direction constitute a defence against fractures developed by the enamel microstructure.

22.

MORPHOMETRY OF JUGULAR FORAMEN

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In the present work the authors made a morphometric study of the jugular foramen by a cranial base external surface opening, with the purpose of determining if significant differences between the diameters from right and left side exist. The materials employed were the skull bases (n= 30) belonging to the ossuary of the 1st Chair of the Anatomy Department and Neurosciences Unit of the "J. J. Naón" Institute of Morphology (School of Medicine, Buenos Aires University). Measurements of the major and perpendicular foramens' diameters were made with FECIT calibres. Data were stored and processed by Microsoft Excel software. Different statistical functions, such as geometric mean and relative frequencies, among others, were used for result studies and analysis. On behalf of results, a Student's t-test was carried out in order to evaluate the significance level. A very significant difference between major (p=0.0000449) and perpendicular (p=0.00000089) diameters for right and left side foramens were found. For that reason the authors concluded that the significant differences between the diameters were always related to their major diameter and the perpendicular diameter for right and left side jugular foramens.

23.

**MORPHOLOGY AND INFRACILIATURE OF *Notohymena granulata* (KAHL, 1932)
N. COMB. (PROTOZOA, CILIOPHORA)**

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Morphological studies on protozoan ciliates were mainly based on live observation and supravital staining of cilia and the nuclear apparatus up to the beginning of the XXth century. With modern cytological techniques, such as silver impregnation, it was also possible to reveal the infraciliature and to deposit permanent slides in scientific repositories. A great number of species were then redescribed. *Notohymena granulata* was originally described within the genus *Steinia*, due to the disposition of the undulating membranes. Years later, it was transferred to the genus *Cyrtohymena*, although its infraciliature was still unknown. In the present investigation, individuals from this species were cultured from soil samples from a temporary pond in Buenos Aires province (Argentina) and were observed *in vivo* and after silver staining with protargol. Live specimens of *Notohymena granulata* measured 98.0 x 38.5 μ m, the body shape is elliptical, with a colorless cytoplasm and cortical granules. One contractile vacuole was found. The somatic ciliature was composed of 3 frontal cirri, 4 fronto-ventral cirri, 5 postoral cirri, 5 transverse cirri, 1 buccal cirrus, 3 caudal cirri, 2 rows of marginal cirri, and 6 rows of dorsal cilia. Oral ciliature was composed of 26 polykineties and the endoral and paroral membranes crossed each other (*Notohymena* pattern). Two elliptical macronuclei and 2 micronuclei were observed. The present redescription leads to the transference of *Cyrtohymena granulata* to the genus *Notohymena*.

24.

**IMMUNOSTAINING FOR KI67: EFFECT OF
THE ANTIGEN RETRIEVAL METHOD ON THE RESULTS**

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Quantification of cell proliferation in tumors provides useful information. The Ki67 protein (pKi67) is a molecule involved in the cell proliferation mechanism, which is expressed in all phases of the cell cycle except for G₀. Its detection can be performed by means of several available clones and antisera. We explored different methods of antigenic retrieval to define the best protocol of immunostaining for this antibody. Tissue sections from formalin-fixed, paraffin-embedded reactive lymph nodes and one Diffuse Large B-Cell Lymphoma were placed on positive charged slides and dried. The antigen retrieval (citrate buffer pH6 or EDTA pH8) was performed in: a) water bath (WB, 40'), b) microwave (MW, 750W, 30' and 40') or c) pressure cooker (PC, 3' and 5') with further incubation with the anti-pKi67 antibody (clone MIB1, prediluted, Cellmarque) overnight at room temperature. Ki67 was detected with LSAB2 (30', DAKO) and liquid DAB (DAKO). Sections were scored for the presence of nuclear reactivity (+ or -) as well as the intensity (1+, 2+, 3+) in germinal center cells, paracortical zone and lymphoma neoplastic cells. The results showed unreactivity with MW retrieval, with conserved tissue morphology. WB and PC showed strong reactivity (3+), with better morphologic preservation in WB. In conclusion, WB and PC were effective methods, with variable morphologic preservation according to the time of specimen fixation. Also, with this antibody that involves not only the qualitative aspect of staining but the quantitative one as well, the necessity of strict controls (internal and external) is imperative.

25.

**AGE-RELATED ANTHROPOMETRIC VARIABLES CHANGES
IN ABORIGINAL CHOROTE ADULTS**

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The lack of basic information on the normal patterns of aging among the Amerindian blocks the investigations of the health consequences that the current environmental, economic and demographic changes cause. This study presents size and body shape data from a sample of 168 aboriginal Chorote above 20 years-old. Four variables were monitored: total stature, sitting height, biacromial diameter and biiliocrystal diameter. Mean, standard deviation and coefficient of variability were calculated and contingency charts for each sex and separately for the older and younger than 50 years were made. Differences between averages and in relation to the total average were calculated and also differences in the additions of the variables were determined. Results revealed: a) a general decline of individuals older than 50 years; b) a differential decline of the sexes, with a two-fold increase in women; c) the most committed variables were: total stature, biacromial diameter and sitting height, in that order. The statistical answers in relation to age, the variable/s and sex were analyzed and discussed appealing to the positioning of each sub-sample to the respective average, and to the absolute and real value of the differences. Since remarkable age-related differences in the anthropometric variable were found, the samples' age distribution should be taken into account when considering the patterns of the mature morphology. This resulted particularly important in the feminine sex for their differences' values duplicated those of the masculine sex in individuals older than 50 years.

26.

ANNUAL MEANS INCREMENTS IN THE WICHI CHILDREN

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Although populations follow a general body growth pattern, each particular human group presents singularities that are interpreted as adaptative strategies to reach its own reproductive success. In this work childhood-related changes in anthropometric variables were explored in a children sample (ages 7-13) to model the growth rhythms in the Wichi ethnos. Total stature, sitting height, total arm length, total leg length, biiliocrystal and biacromial diameters, upper arm circumference and weight were measured. Individual values were grouped by sex and age, and averages were obtained for each variable and sex. The annual means increments were calculated. The analysis was carried out following two alternative ways: a longitudinal pursuit of the variables appealing to gender differences in each age, and the other following the whole variables (taken all at the same time) for each age and sex. The results showed that for total and sitting statures, lengths of the superior and inferior members and weight variables, the general tendencies in the increments were inverse for each sex and each age, with remarkable changes starting from 12 years old. The same behavior followed the diameters biacromial and biiliocrystal and upper arm circumference until 10 years old. Starting from there, the dimorphic differences become imperceptible. Girls only overcome boys in sitting height and upper arm circumference. It is concluded that the dimorphic differences observed and their rhythm and magnitude, are expressing a sexual differential response to reach the specific objectives to fulfill in adulthood in accord to their biocultural environment.

27.

PALATINE INDEX AND PALATINE VAULT MORPHOLOGY

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Palatine vault varied presentations can modify the reference parameters when locating of anatomical accidents; therefore it is necessary to study the most frequent forms. For this purpose, an analysis on fifty dry adult skulls belonging to the La Plata Dentistry School osteoteca was carried out. Palatine longitudinal and transverse diameters were measured and their quotient, expressed as palatine index (PI), was calculated for statistical analysis. The PI arithmetic mean was 1.358. The rank value was 1.15 [0.8 1.95]. Mode resulted in 1.40 (five cases) and standard deviation was 0.1746. For the analysis a PI value, calculated on the basis of the arithmetic mean \pm standard deviation, was taken in consideration. PI values between 1.19 and 1.53 corresponded to those palates in which both diameters are balanced (leptostaphyline palate); an IP value $>$ 1.53 indicated a significant lengthened longitudinal diameter (mesostaphyline palate) whereas for an IP $<$ 1.19 the transverse diameter was significantly enlarged (eurystaphyline palate). In our study 37 skulls (74%) had leptostaphyline palates, 7 (14%) skulls had mesostaphyline palates and the remaining 6 skulls (12%) possessed eurystaphyline palates.

28.

DETERMINATION OF THE QUANTITY AND THE QUALITY OF SALIVA IN A CHILDREN POPULATION

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Saliva is a mixture of the secretions produced by the major and minor salivary glands. It contains approximately 108 microorganisms per mm³ coming mainly from the tongue. The *Streptococcus mutans* and lactobacilli counting have been employed as an indicator of caries susceptibility. In order to determinate the incidence of saliva qualitative and quantitative composition on hard tissues oral pathologies, the objective of this work was to assess the pathogenicity degree of the salivary components in a children population. This study included 100 children aged 6-12 who were assisted at the Children Integral Dentistry Chair. Saliva samples were taken and processed for the qualitative Snyder method and quantitative monitoring of *S. mutans* and lactobacilli in Rogosa agar. Individual clinical histories including the odontogram were made. The use of the O'Leary index allowed establishing that 28% of the patients showed no cariogenic risk while the remaining 72% had some degree of caries risk. The qualitative data rendered a 70% of susceptible patients, with a 19%; 7% and 4% of moderate, light and null conditions, respectively. The *S. mutans* counts showed a 56%; 20%; 17% and 7% of very susceptible, susceptible, moderate, and slight susceptible patients, respectively. The lactobacilli counts registered a 7% very susceptible; 73% susceptible and 20% moderate conditions. Results revealed a high susceptibility on the hard dental tissues related to the saliva's quantitative and qualitative properties.

29.

***Lagostomus maximus maximus* (PLAIN VISCACHA)
UMBILICAL CORD HISTOLOGICAL STRUCTURE**

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Like other histicognathi, plain viscacha has a prolonged gestation period due to which the young display great development at birth. To know the amount and type of blood vessels in the umbilical cord is relevant for a better fetus-maternal relation understanding. Since the literature does not mention those features, we carried out the histological structure description of this species' umbilical cord. Umbilical cords from 10 male and 7 female fetuses of different gestation ages were used. Cords' length, wide and thickness were measured with a caliber. Samples were fixated in 10% formaldehyde and processed by routine histological technique. They were included in paraffin and stained with H&E, Masson's trichromic and orcein. Also histochemical PAS technique and silver Gomori impregnation were performed. Remarkable differences in the number of arteries and veins between studied cords were found. As is habitual, the number of blood vessels was higher in the youngest individuals with respect to those of greater gestation age. However, differences in the number of vessels between individuals of the same gestational age (of different mothers) and including between twins were found. A maximum number of 6 arteries and 4 veins were observed. Modes were 2 and 1 for arteries and veins, respectively. The observed numerical differences would be attributable to the blood vessel atrophy occurring throughout pregnancy. Nevertheless, it is not possible yet to establish the origin of the numerical differences between individuals of equal gestational age, which will be object of later studies.

30.

**PERICARDIC REFLECTIONS OVER PULMONARY PEDICLE:
ANATOMIC AND SURGICAL VALUE**

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In order to study the pulmonary pedicle, specifically its intrapericardic portion, anatomical and surgical dissections were performed. Ten formolized both sexes pieces were dissected and 5 cases of patients that underwent thoracic surgery were reviewed. Five of the formolized pieces were dissected by a medial incision over the anterior surface of the pericardium, on the remaining 5 pieces the pericardic sac was opened below the phrenic nerve, preserving thereby the access to the intrapericardic pulmonary pedicles. The surgical cases correspond to lung disease patients that were operated by the intrapericardic approach. In the dissections the pericardic reflections over the pulmonary pedicle and the surrounding anatomical structures could be observed; these features must be bear in mind to avoid the lesions of those vital anatomical elements. In the surgical cases the procedures demonstrated the benefits of this access to the pulmonary pedicle for it allowed the lung pathologies' removal. The pulmonary vessels distribution, diameter, direction and its respective pericardic reflection differed in both sides. The intrapericardic access way was important in those cases where the solution to the lung disease was not reachable with the ordinary surgical techniques.

31.

**SEEKING FOR REGIONAL OSTEOLOGICAL STANDARDS:
"PROFESOR RÓMULO LAMBRE COLLECTION"
(SCHOOL OF MEDICINE, UNIVERSITY OF LA PLATA)**

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We propose to communicate the first steps in the development of the project called "*Macro and microscopic analysis of human skeletal remains. Contributions to forensic and anthropologic research*", that has been accredited by the School of Medicine. Its general objective is the generation of a contemporary, regional and documented osteological collection that constitutes it self as a referent to research, teaching and transference to community. To make this project real, a multidisciplinary team of members from School of Medicine and School of Natural Sciences and Museum of the University of La Plata was conformed. The human remains to be studied are provided by the La Plata County Cemetery in the frame of an agreement signed by this institution and the University of La Plata, and the resolution signed by the above mentioned Schools. The sample is composed of 300 individuals (adults and subadults), with records of age, sex and cause of death, with a burial antiquity not less than seven years. In all cases the bodies had not been claimed and were destined to common ossuary. Considering the long term, the project aims to generate a representative regional database that could be used as control in comparative analysis and could serve to gain precision in the age and sex estimation of not- documented skeletal remains from archaeological and forensic contexts.

32.

**CLINICAL ASSESSMENT OF GINGIVAL DISEASE IN
AN ADOLESCENT POPULATION**

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Periodontal disease recognizes gingivitis, periodontitis and bacterial plaques as fundamental etiological factors. Its incidence and prevalence is decided based on index application. They must be enough sensitive to detect small changes, reproducible by any research worker, easy to instrumentation and avoid subjective interpretations. As in adolescents prevail gingivitis caused by bacterial plaque, the index employed in this study takes normal characteristics of gum as reference. The epidemiology diagnosis is based in changes of color, shape, consistence and hemorrhage tendency. The objective of the present work was to determine the gingival disease incidence in a local adolescent population to instrument educational and preventive strategies. The investigation comprised 120 students of three schools in Ensenada city aged 13-17. Students were summoned to the dentistry office of the local hospital with parents' and teachers' consent. Papillary hemorrhage index was selected for its easy application. The papilla is smoothly pushed from its base to the edge with an adequate catheter in the following sequence: upper right palatine, lower left palatine, lower left lingual and lower right vestibular. Thirty seconds later it is evaluated according to 4 degrees. Degree 1: one hemorrhagic point; degree 2: hemorrhagic line and point in the gingival border; degree 3: hemorrhage in interdental triangle; degree 4: deep hemorrhage after catheterism. The results obtained were: degree 1= 16%; degree 2= 27%; degree 3=38% and degree 4=19%. These results led us to conclude that a high degree of periodontal disease was found in the evaluated population.

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