

PROGRAM  
OF THE  
TENTH ANNUAL MEETING

CANADIAN ASSOCIATION FOR PHYSICAL ANTHROPOLOGY  
L'ASSOCIATION POUR L'ANTHROPOLOGIES PHYSIQUE DU CANADA

GUELPH UNIVERSITY  
SCHOOL OF HUMAN BIOLOGY

November 18th to 21st  
1982

with support from

Ontario Heritage Foundation  
Ontario Ministry of Colleges & Universities  
College of Biological Sciences, Guelph U.

Local Arrangements

Dr. Susan Pfeiffer  
School of Human Biology  
Guelph University

Program Chairman

Dr. Shelley Saunders  
Department of Anthropology  
McMaster University

PROGRAM SCHEDULE

THURSDAY, NOVEMBER 18

9:00 - 17:30 Workshops  
17:30 - 19:00 Dinner  
19:00 - 22:00 Registration for Main Conference  
Welcome and Refreshments:  
Host: Ontario Heritage Foundation  
Upper Lounge, School of Human Biology

FRIDAY, NOVEMBER 19

9:00 - 12:00 Human Biology and Genetics  
12:00 - 13:30 Lunch  
13:30 - 16:30 Skeletal Biology  
17:30 - 19:30 Cocktails, Faculty Club,  
Level 5, University Center  
Host: College of Biological Sciences  
Guelph University  
19:30 Banquet, Room 442, University Center

SATURDAY, NOVEMBER 20

8:45 - 10:05 Primatology  
10:40 - 12:00 Methodology  
12:00 - 13:30 Lunch  
13:30 - 15:50 Paleoanthropology  
16:00 - 18:00 Business meeting  
20:00 Informal Forum: The Future of Physical Anthropology in  
Canada, Upper Lounge, School of Human Biology  
20:00 Classic Ethnographic Films, Rm. 213, School of Human Biology

SUNDAY, NOVEMBER 21

9:00 - 12:00 Human Biology - Health

DEPARTURE

PROGRAMME

JEUDI, LE 18 NOVEMBRE

- 9:00-17:30 Ateliers
- 17:30-19:00 Souper
- 19:00-22:00 Inscription des participants  
Réception d'accueil, Salon supérieur, School of  
Human Biology

VENDREDI, LE 19 NOVEMBRE

- 9:00-12:00 Biologie humaine et génétique humaine
- 12:00-13:30 Dîner
- 13:30-16:30 Ostéologie
- 17:30-19:30 Réception, Faculty Club, 4<sup>ème</sup> étage, University Center
- 19:30 Banquet de l'Association, Salle 442, University Center

SAMEDI, LE 20 NOVEMBRE

- 8:45-10:05 Primatologie
- 10:40-12:00 Méthodologie
- 12:00-13:30 Dîner
- 13:30-15:50 Paléoanthropologie
- 16:00-18:00 Assemblée générale de l'Association
- 20:00 Forum: L'avenir d'anthropologie physique au Canada, Salon  
supérieur, School of Human Biology
- 20:00 Films ethnographiques classiques, Salle 213, School of Human  
Biology

DIMANCHE, LE 21 NOVEMBRE

- 9:00-12:00 Biologie humaine-Santé

DÉPART

All paper presentations to be held in Room 207, School of Human Biology,  
Guelph University.

FRIDAY

Human Biology and Genetics

Chair: Dr. H. Helmuth

- 9:00 H. Helmuth
- 9:20 M. Knauer
- 9:40 R.M. Malina
- 10:00 D. Berthelette, L.L. Abenheim
- 10:20 Coffee
- 11:00 E.J. Szathmary
- 11:30 T. Graham, D. Gallow and S. Pfeiffer
- 11:40 R. Leger

Skeletal Biology

Chair: S. Jerkic

- 13:30 R. Larocque & G. Gagné I
- 13:50 R. Larocque & G. Gagné II
- 14:10 M. Jackes
- 14:30 M.A. Katzenberg
- 14:50 Coffee
- 15:30 J.S. Cybulski
- 15:50 L. Godwin & L. Waks
- 16:10 J. Melbye

SATURDAY

Primatology

Chair: J. Paterson

- 8:45 V. McGrath
- 9:05 L.M. Fedigan, H. Gouzoules and S. Gouzoules
- 9:25 G. Ellis I
- 9:45 G. Ellis II
- 10:05 Coffee
- 10:40 S. Saunders
- 11:00 B. Trodden and W. Wade

11:20 J. Mayhall  
11:40 C.L. Lyman

### Paleoanthropology

Chair: M. Skinner

13:30 C. Meikeljohn, P. Key, and C. Schentage

13:50 P. Miller-Schroeder

14:10 B. Sigmon

14:30 Coffee

14:50 C.P. Koch

15:10 L.R. Williams

15:30 B. Sigmon

16:00 - 18:00 Business meeting

- Agenda:
1. Sec/Treas. report
  2. Editor's report
  3. Old business  
a possible scholarship or award, using  
"Davidson Black money"
  4. New business
    - a. Questionnaire results
    - b. NSERC, SSHRC representatives
    - c. Affiliation w/
      - i. Can. Fed. of Bio. Sciences
      - ii. Can. Learned Societies
    - d. Membership drive
    - e. Other
  5. Adjournment

20:00 Informal Forum: The Future of Physical Anthropology in Canada,  
Upper Lounge, School of Human Biology

20:00 Classic Ethnographic Films, Rm. 213, School of Human Biology

SUNDAY

Human Biology - Health

Chair: J. Forest

9:00 - L.A. Sawchuk and A. Herring

9:20 - J. Forest and Y. Bergeron

9:40 - E. Kivington-Moss and S. Pfeiffer

10:00 - Coffee

10:20 - N. Laplante

10:40 - A. Petto

11:00 - G. Frappier

11:20 - B.J. Trodden

Tous les communications sont presentees au salle 207, School of Human Biology.

## SESSION SCHEDULES

### THURSDAY

#### Workshops

- 13:00 Chromosome Culturing - Dr. A. Zeller  
U. of Waterloo
- 10:30 - 12:00 Anthropometry - Mr. Brian Goslin  
School of Human Biology  
Guelph University
- demonstration of densitometric technique  
(underwater weighing)  
skinfold measures  
comparisons of predictive equations
- 13:30 - 15:00 Mini-computers and Statistical Packages  
Dr. J. Paterson  
U. of Calgary
- Mr. J. Hoare  
School of Human Biology  
Guelph University
- demonstrations of minis such as Apple, HP, IBM  
Personal in data collection and analysis modes  
minis in field settings - discussion
- 15:00 - 17:30 Bone Histology - Dr. Susan Pfeiffer  
Guelph University
- preparing and analysing ground thin sections (hands on)

Those who have registered in one workshop may wish to take part in others.  
Your \$10 fee covers the whole day.

Friday, November 18, 1982

Human Biology and Genetics

9:00 - H. Helmuth, Trent Univeristy

Abstract: Secular Trend and Growth of Mohawk Children

The body height and the absolute and relative weight as expressed in the "unisex phantom" (Ross and Wilson, 1974) of male and female Mohawk children from Tyendinaga, Belleville (Ontario) are compared to Iroquois Natives from 1934 and to general Canadian children from 1970-72. It is shown that the recent Mohawks are taller and heavier than the 1934 Native Indian and the general Canadian children. The pubertal growth in height occurs earlier now than in 1934, but no difference is found between the modern Mohawk and the general Canadian youths. Absolute and relative weight of girls exceeds that of boys at an earlier age and does not follow the curve for height growth.

9:20 - M. Knauer, Univerisity of Toronto

Abstract: Postpartum Fertility and Breastfeeding

*Postpartum fertility and breastfeeding is examined in sixty-one mothers from Toronto and the surrounding area, who gave birth between 1976-1981. Some have had more than one child during that time, thus the number of children or postpartum cases investigated is eighty-five.*

*Data are divided into two groups, those cases where the onset of menstruation occurred prior to 180 days postpartum, and where it occurred after 180 days postpartum. Factors including supplementary feeding (solids and other liquids), total duration of breastfeeding, nightfeeding and intervals between feedings are correlated with the time of the first postpartum menstrual cycle. Sex differences and socioeconomic factors are taken into consideration.*



9:40 - R.M. Malina, University of Texas, Austin

Abstract: Childhood Growth Status of Eventual Migrants and Sedentes in a Rural Zapotec Community in Oaxaca, Mexico

The problem of physical selection of migrants from the perspective of growth status at school age of individuals who eventually migrated from a rural Zapotec-speaking community in the Valley of Oaxaca, Mexico, was compared to the growth status of those who remained in the community. Growth status was based upon 23 anthropometric dimensions for males and 20 for females. Measurements were taken on 336 school children 6 to 15 years of age in 1968. In a 1978 follow-up survey in the community, 174 individuals of the original cohort of school children still resided in the community (sedentes), while 132 migrated to Mexico City, but still retained ties with the community. Comparison of the 1968 growth status of the sedentes and migrants showed no significant differences in age and the anthropometric dimensions. The results thus suggest no apparent selection for physical characteristics at these young ages. If changes occur between sedentes and migrants, they apparently develop after migration.

10:00 - D. Berthelette, L.L. Abenhaim, Université de Montréal

Abstract: Analyse ergonomique d'un facteur de risque pour la Sécurité des travailleurs: Le cas de la remuneration au rendement

Ergonomic Analysis of an occupational safety hazard: The case of piecework

L'une des méthodes utilisées pour évaluer l'impact d'une variable environnementale sur la sécurité des travailleurs consiste à comparer l'incidence et la gravité des accidents d'un groupe exposé à celles d'un groupe contrôlé. Dans ce cas, des données quantitatives concernant les demandes d'indemnisation effectuées par des travailleurs accidentés, sont fréquemment utilisées pour estimer ces variables. Cette approche comprend certains désavantages que les connaissances ergonomiques peuvent en partie pallier.

Nous présentons une synthèse des résultats de recherches relatives à l'impact de la rémunération au rendement sur la sécurité au travail. Nous dégageons un schéma explicatif des processus accidentels à partir d'études ergonomiques concernant les cadences de travail et l'évaluation des charges physiques et mentales qu'elles entraînent.

10:20 - Coffee

11:00 - E. J. Szathmary, McMaster University

Abstract: Genetic diversity and genetic relationship: studies on Athapaskan-speaking Indians

Much of what is known about the extent of genetic differentiation in hunting-gathering peoples is based on information obtained from South American Indian tribes. Here I obtain and compare the coefficient of gene differentiation,  $G_{ST}$  (Nei, 1975), found among three villages of Dogrib Indians of the NWT, with  $G_{ST}$  estimated among villages of the Macushi and Xavante, respectively, of tropical South America.  $G_{ST}$  obtained from variation in 36 systems showed that the Dogrib are as diverse as the Macushi, but more diverse than the Xavante.

Genetic distances obtained among 11 Athapaskan-speaking groups show the closest relationships exist within villages of the same "tribe", for example, within Dogrib, within Kutchin. Inter-tribal affinity binds the Dogrib and Kutchin, while the Northern Tutchone, Slave and Chilcotin form a distinct cluster with the Navajo. Both the northern Tutchone and western Slave inhabited the southern Yukon aboriginally as well as today. It is to this region that some archeologists trace the origin of the Navajo.

11:20 - T.Graham D. Gallow, S. Pfeiffer, University of Guelph

Abstract: Comparative Thermoregulatory Responses to Acute Cold of Women of Asian and European Descent

Virtually all studies concerning the human's response to cold stress have examined men in a resting state. The present study examined the thermoregulatory responses of women of Asian (n=5) and European (n=6) descent under both resting and mild exercise conditions. Resting experiments consisted of sitting for 60 min at  $-5^{\circ}\text{C}$ , while the exercise (60 W) was 3 consecutive 20 min work, 15 min rest sets at  $-5^{\circ}\text{C}$ . The Asians were significantly ( $p < 0.05$ ) shorter and lighter, had smaller B.S.A. and larger B.S.A./kg, as well as having differences ( $p < 0.05$ ) in cephalic and nasal indices. At rest in the cold the groups had similar decreases in chin and malar temperatures (despite differences ( $p < 0.05$ ) in facial skinfolds), but the Asians maintained warmer ( $p < 0.05$ ) nose temperatures. No consistent differences were found between groups for core, skin or mean body temperatures. During the exercise trials the subjects remained warmer and no consistent differences were found between groups for the body temperatures. Significant ( $p < 0.05$ ) relationships were found at rest between net heat loss and body fat, B.S.A. and B.S.A./kg. In contrast, during exercise the relationships with net heat loss were not significant. The study demonstrated that facial responses to cold do have racial differences although they did not necessarily correlate with differences in head and facial dimensions. Body morphology could account for differences in heat loss at rest, but during exercise the role of such insulative adaptations diminishes and the metabolic response appears to dominate.

11:40 - R. Leger, Université de Montréal

Abstract: Sources de variation du régime alimentaire d'une population industrielle du Nord-est de la Suisse

La présentation de M. R. Léger, nous propose de regarder certains résultats obtenus à partir d'une étude exhaustive faite dans les années 70 par l'institut de médecine préventive de Zurich.

Avec l'aide des statistiques nous allons tenter d'expliquer les sources possibles de variation pouvant affecter le régime alimentaire des individus et des groupes. Après avoir découvert certaines habitudes alimentaires, nous pousseront plus loin l'analyse pour savoir s'il y a une relation entre l'absorbtion de certains aliments (regroupés), et le niveau de santé calculé d'après l'indice de vieillissement différentiel.

#### Skeletal Biology

Chair: S. Jerkic

13:30 - R. Laroque & G. Gagné , Université de Montréal (I)

Abstract: Fouilles Archaeologiques D'un Cimetiere Quebecois des XVIIIe et XIXe Siècles

En 1977, l'église de la paroisse de Notre-Dame de Foy, à Sainte-Foy près de Québec, était détruite par un incendie. Trois ans plus tard, des fouilles archéologiques visant à mettre au jour les fondations de la première église, érigée au début des années 1700 et incendiée par Murray en 1760, révélèrent la présence de nombreuses sépultures qui avaient été inhumées sous le plancher même des églises qui se sont succédées en ce lieu. Des recherches dans les registres de décès nous apprirent alors que plus de 100 paroissiens y avaient été inhumés entre 1714 et 1918.

Au printemps de 1982, la Société d'Histoire de Sainte-Foy nous confiait la responsabilité d'effectuer des fouilles archéologiques en ce cimetière. Nous présenterons ici les principales méthodes de fouille et d'enregistrement des données qui ont été utilisées, ainsi qu'une description sommaire des modes d'ensevelissement.

13:50 - R. Larocque & G. Gagné , Université de Montréal (II)

Abstract: résultats préliminaires et perspectives d'analyse

Dans cette communication, nous ferons part des premiers résultats de l'analyse des coutumes funéraires et nous discuterons des perspectives d'analyse anthropobiologique.

Nous allons tout d'abord aborder certaines caractéristiques des coutumes funéraires relatives à l'architecture des cercueils (forme et dimensions des cercueils, éléments décoratifs, etc.), à leur orientation, à la position anatomique des avant-bras et des mains, et à la qualité et la quantité des artefacts associés aux coffres funéraires et aux squelettes.

D'autre part, l'examen des registres de décès laisse entrevoir d'intéressantes possibilités d'analyse anthropobiologique. En effet, les nombreuses informations qu'ils ont livrées, de concert avec les données recueillies en cours de fouille, rendent possible l'identification de nombreux individus. Dès lors, nous serons en mesure d'associer nos observations biologiques aux données sociodémographiques extraites d'autres registres et d'autres documents d'époque.

14:10 - M. Jackes, University of Alberta

Abstract: Neutral Ossuaries?

Neutral burial practices are, I was taught, a variation of Huron customs. Noble has argued that the Neutral had ossuary burial with false floors and peripheral burials. Marion White, on the other hand, stressed the bewildering diversity of Neutral practices. On the basis of what has been learned from the Grimsby cemetery, we can say that for the northern Neutral at least, ossuary burial was not practiced and there may not have been a Feast of the Dead comparable to that of the Huron.

14:30 - M.A. Katzenberg, University of Toronto

Abstract: X-ray Fluorescence Analysis of Prehistoric Bone from Southern Ontario

Skeletal remains from five populations, spanning the transition from hunting and gathering to agriculture, were analyzed for strontium and a number of other chemical elements by x-ray fluorescence spectrometry. Two populations are from the same site, while the other three are located within the same physiographic province, so environmental differences are minimal. It was hypothesized that the quantity of strontium in human bone would increase in the more recent groups due to increasing reliance on cultigens and a reduction in the importance of hunted foods. This is not the case. It appears that while specific items in the diet differed, the overall proportion of vegetable to animal protein did not increase.

14:50 - Coffee

15:30 - J.S. Cybulski, National Museum of Man

Abstract: Burial Recovery Project in Greenville, B.C., 1981-1982

An unexpected discovery of human skeletal remains during lot preparation for a housing development stimulated the Lakalzap Band Council of Greenville, British Columbia, to seek assistance in identifying the remains. Test excavations in the area of the find, late in the summer of 1981, led to the discovery of a prehistoric burial site. With the cooperation of the Lakalzap Band, controlled excavation of the site (GgTj-6) in 1982 resulted in the recovery of 28 burials, a large collection of faunal remains, floral samples, and over 100 artifacts. This material, together with the excavation data, is being analyzed at the National Museum of Man in Ottawa to provide information on the physical anthropology and burial practices of a people who lived in the Greenville area between 1,000 and 2,000 years ago. The material represents the first collection of known prehistoric remains from the Nass River Valley of British Columbia, traditional territory of the Nisgha people.

15:50 - L. Godwin and L. Waks, University of Toronto

Abstract: Radiography of ancient bone material, with particular reference to the skeletal population of the Levesconte Burial Mound

Bone radiographs provide much information concerning the nutritional and disease status of past populations. However, the information derived from the radiographs is only as good as the radiographs themselves. Radiographic examination of ancient bone material allows for very little margin of error, and standardisation of techniques is emphasised. Faulty radiographs may be due not only to improper positioning of material but also to over - or underexposure of the films, wrong film speed, poor screen-film contact or improper darkroom processing. Such errors in radiographic technique result in misleading radiographic films, in which features such as Harris lines may either be obliterated through overexposure or fail to materialise through underexposure of the film. Moreover, even on correctly exposed film, poor screen-film contact may result in radiographs which appear to demonstrate bone pathology, due to apparent obliteration of boney trabeculae.

Radiographic examination of the long bones of the majority of individuals from the Levesconte Burial Mound revealed multiple transverse Harris lines, indicative of successive periods of nutritional stress. This population is interesting in that, physically, they are unusually robust, and also appear to demonstrate social stratification, based on grave goods, usually associated with a settled agricultural mode of subsistence. The radiographic evidence provides implications for hypotheses concerning the success of a change in subsistence strategy from hunting and gathering to a more sedentary way of life in this Woodland population of Southern Ontario.

16:10 - J. Melbye, Erindale College, University of Toronto

Abstract: Recent Research in the Dakhleh Oasis Region, Egypt

During 1982 a major archaeological survey and excavation is taking place in this region of the Sahara Desert. The analysis of human skeletons includes metric, morphological, pathological and demographic parameters during the Roman occupation.

A preliminary evaluation of research design and results will be presented.

SATURDAY

Primateology

8:45 - V. McGrath, University of Calgary

Abstract: Affiliative behaviour among captive female gorillas

Two groups of gorillas (N = 20) were observed at Howletts Zoo Park, Kent, England, for a two-month period in 1982.

The study found that although interaction among adult females was minimal on a daily basis, upon occasion, fairly intense bond relationships were noted. The patterns of female/female alliance behaviour differed somewhat between the two groups in both form and motivation. Females were also observed to employ favourite infants of the males in the behaviour pattern known as "agonistic buffering".

It can be concluded that these patterns of behaviour were formed, at least on some occasions, to counteract and repress aggressive behaviour on the part of the silverback male in each group.

9:05 - L.M. Fedigan, H. Gouzoules and S. Gouzoules  
University of Alberta

Abstract: Dominance and Reproductive Success in Female Japanese Macaques

Theoretical models of the relationship between competition and reproductive success in primates share the premise that dominance hierarchies determine differential access to those limited resources which are essential for reproduction. Tests for correlations between rank and reproductive success in males have produced mixed results, due to a number of conceptual and methodological problems. Studies of differential reproduction in female primates are fewer, but have the advantage over male studies of directly measuring infant production and survival.

In this report, longitudinal reproductive data on the Arashiyama West troop of Japanese macaques have been used to test the hypothesized correlation between dominance rank and reproductive success. No significant relationship between dominance and several measures of reproductive success was found. In explanation of these findings, it is stressed that life-history studies are necessary to adequately determine differential reproductive success in females, and that demographic variables, such as age at first birth and longevity, may in some cases be better predictors of reproductive success than dominance rank.

9:25 - G. Ellis (I), University of Montreal

Abstract: Controlled Phonation in Bonnet Macaque Vocalizations: I  
Theoretical, Methodological and Descriptive Considerations

The graded vocal repertoire of the Bonnet displays inter- and intra-class sound variation. Vocal classes may be grouped by opposing (semantic) tendencies to either: 1) intergrade seldom between classes while varying greatly within the class, or 2) vice versa. Furthermore, vocalizations expressing the former tendency may also be distinguished from the latter at the syntactic and pragmatic levels.

This lack of homogeneity in vocal structure leads one to doubt the efficacy of the innate/emotive hypothesis as a non-causal explanation of higher primate vocal communication. Conditioning experiments, field observations, developmental investigations, and recent neurobiological data corroborate the above conclusion and argue strongly for a multi-causal model stressing both innate/emotive and learned/voluntary patterns in sound communication. In order to encompass this latter aspect, such a model requires a novel methodological approach to the characterization of vocal repertoires. In lieu of treating the vocalization or call as the fundamental unit of analysis, underlying parameters of acoustic variation must be identified that are operating across all sound "types" and that are consistent with neurological models of sound production. After briefly surveying theoretical issues, this paper then presents the methodology involved in analyzing vocal variation, using the g-purr sound class as an exemplar.

A short film highlights the descriptive aspects of these vocalizations.

9:45 - G. Ellis (II), University of Montreal

Abstract: Controlled Phonation in Bonnet Macaque Vocalizations: II  
An Alternative to the Innate/Emotive Hypothesis

Variations in the acoustic structure of g-purr vocalizations can be described by the following set of criterion variables: frequency (onset, middle and terminal); frequency shift (onset-terminal, mid-terminal, onset-middle); duration; units per second; unit structure; formant structure; audible classification and intensity.

Five sets of predictor variables have been chosen to study variation in the above acoustic parameters: age; sex; context (social cohesion, peaceful, and agonistic inter-individual interactions); motivation (avoidance, agonistic approach, affiliative approach, and ambivalence); and arousal level (low, mild, alert, high). Analysis of variance and multiple correlation analysis indicate that all predictor variables have a significant impact on acoustic structure, but that their relative contribution to the variance of the individual parameters is complex. For example, whereas arousal level is found to be the least important contributor to significant differences among mean values for most criterion variables, context (in the absence of a significant input due to maturation and small effect due to sexual dimorphism) contributes in a highly significant way to differences among mean durations and units per second. The former relatively minor rôle played by arousal argues against the innate/emotive hypothesis and the latter supports an alternative model. These and further findings bearing on this issue are presented in this paper.



10:05 - Coffee

10:40 - S. Saunders, McMaster University

Abstract: Scanning Electron Microscopy of Archaeological Bone

There have been recent attempts to map bone surface growth-activity states under the SEM using archaeological and fossil bone. This research project examined archaeological bone surfaces cleaned with varying applications of a wet or dry oxidation technique. Samples were observed in two ways: 1) Epoxy resin casts taken before bone specimens were treated were compared to the treated samples themselves. 2) Control samples cut from bone adjacent to the treated samples were left untreated and prepared for the microscope. Observations indicate that organic material remains in varying degrees on some archaeological bone and must be removed to produce a clear, anorganic specimen on which bone cell activity states can be identified. In addition, microscopic wear and abrasion can severely compromise any observations of bone surface growth remodeling.

11:00 - B. Trodden and W. Wade, University of Manitoba

Abstract: Age and Dental Emergence in Indians and Inuit

For the human osteologist and forensic scientist, one of the most common indicators of chronological age in skeletons is emergence of the teeth through the alveoli. For the purpose of accurate age estimation, existing emergence standards suffer from one or more of the following disadvantages: 1) they are derived from contemporary Euroamerican samples and cannot be reliably applied to other populations, 2) they are based upon gingival emergence, which is irregularly later than alveolar emergence, and 3) they give ambiguous results due to intra- and inter-population variability in the sequence of emergence, particularly of the permanent teeth. This paper presents a simple method of age estimation, based upon alveolar emergence of permanent teeth, for two non-European samples. The method is easier to apply than existing methods and is unaffected by intra-population differences in sequence of emergence. The method is reproducible within narrow limits and can be easily applied to other populations.

11:20 - J. Mayhall, University of Toronto

Abstract: Torus Mandibularis: New descriptive methods

Almost all reports on the size and occurrence of mandibular tori have categorized these exostoses with such terms as small, medium, or large. With very few exceptions, these terms are not well defined, and there is no quantitative definition of each of these categories. Since the size of torus mandibularis is a continuous characteristic which may change throughout the life of an individual, a method is proposed for determining the dimensions of a torus in skeletal populations.

A simple, fast method of obtaining dental stone models of the lingual surface of the mandible is available. These models can then be measured to determine the extent of the torus as well as its projection from the lingual surface. Since the primary descriptions are of the extent of the torus and its projection into the oral cavity, the measurements can better assess these than simple descriptive terms. As well, indices based on the volumetric determinations and the lingual projections provide measures of size which can be compared on an intra- or inter-population basis.

11:40 - C.E. Eyman, University of Calgary

Abstract: Age and "Race" as Modifiers of Osteometric Sexing Techniques Seen Through Factor Analyses

Although the literature contains numerous contributions to osteometric sex determination of adult human skeletons, there have been fewer attempts to assess the influence of "race" and age upon these "sex" metrics. As well, many of the earlier studies suffer from a lack of employing a standard statistical measure. The reverse, however, is essentially true for many studies concerned with subadult skeletons.

Thirty-nine cranial, scapular and long bone "sex" osteometrics were selected from the literature and taken on 600 adult human skeletons of known sex, age and "race", including some of the same skeletons examined in some of the earlier works. The reliability of these "sexing" osteometrics was re-assessed, along with the extent to which they were modified by age and "race".

One-way analyses of variance and correlation coefficients had already indicated that several of the "sexing" measurements were significantly influenced by these latter two variables. Accordingly, factor analysis was applied to the data to seek out which measurements were strongly linked through common underlying factors. Further insight into how age, sex and "race" interact and modify these metric groupings was enhanced by applying Kaiser's index of factor similarity.

#### Paleoanthropology

13:30 - C. Meikeljohn, P. Key, and C. Schentage, University of Winnipeg

Abstract: Stature change in Europe from Upper Paleolithic to Neolithic

13:50 - P. Miller-Schroeder, University of Calgary

Abstract: The Use of a Solitary Carnivore Model in Hominid Evolution

A variety of theories have been proposed to explain the diversity of early hominid species. In these, social carnivores, social primates, hunting and meat eating are often recurrent themes. However, it is unlikely that all hominid groups adopted the same life style or social system. A diverse evolutionary lineage such as this was probably experimenting with many different strategies. This paper will consider how one line, typified by the robust australopithecines, may have adapted as a solitary, aggressive, opportunistic omnivore. Parallels will be drawn to the evolutionary development of one lineage within the Ursidae, the brown/grizzly bears, as they diverged from the forest-dwelling black bears.

14:10 - B. Sigmon, University of Toronto

Abstract: Evolutionary Stages of Hominid Pelvic Morphology with Special Reference to New Fossil Material from Tautavel, France

An opportunity to analyze the Tautavel pelvic and femoral fossil material recently has led me to conclude that this late stage of Homo erectus can be characterized by a distinct pelvic morphological pattern which is not present in either earlier or later hominids. Suggestions are made which might explain this unique pattern.

Pelvic fossilized remains from all hominid stages are reviewed, and in light of the new Tautavel finds, five evolutionary stages of pelvic morphology are proposed.

14:30 - Coffee

14:50 - C.P. Koch, Erindale College, University of Toronto

Abstract: The Olorgesailie Fauna: A Preliminary Report

Preliminary results of the analysis of the Olorgesailie fauna (Middle Pleistocene, Kenya) are presented. The taxa represented indicate a mosaic environment ranging from riverine/lake margin to open savanna. Heropithecus oswaldi is the predominate taxon at many of the sites, however a broad spectrum of other animals is present. This interpretation supports the previous studies of the Leakeys and of Isaac. Preliminary analysis also indicates that, aside from association, there is no evidence for the regular and systematic hunting and butchering of heropithecus by Acheulean hominids.

15:10 - L.R. Williams, Lakehead University

Abstract: A Review of some problems related to establishing phylogenetic relationships in Plio-Pleistocene hominids

In recent years a tremendous amount of press has been devoted to describing and evaluating the new taxon "Australopithecus afarensis." When a new taxon is proposed, it is the responsibility of the author or authors to demonstrate beyond reasonable doubt, that the new hypodigm differs significantly from previously described taxa. It is the writer's position that the authors of the taxon "A. afarensis" have not clearly demonstrated a phyletic distinction from previously described materials particularly, Australopithecus africanus, and that the continued use of this new taxon only obfuscates the phyletic picture of Plio-Pleistocene hominids.

15:30 - B. Sigmon, Erindale College, University of Toronto

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Sunday, November 20, 1982

Human Biology - Health

9:00 - L.A. Sawchuk and A. Herring, Scarborough College, U of Toronto

Abstract: Secular trends in the mortality rate due to respiratory tuberculosis among the Jews and non-Jews of Gibraltar, 1859-1979

Based on cause-specific death records spanning the interval 1859 to 1979, we selected from well over 10,000 cases of death among the residents of Gibraltar the number of deaths attributable to respiratory tuberculosis. An examination of a series of reconstructed death cohorts for the Jewish and non-Jewish members of the community revealed that: (1) death due to respiratory TB occurred primarily in the reproductive and post-reproductive age classes, (2) the level of mortality due to respiratory TB remained relatively high until the 1930s and (3) the Jews enjoyed a relative advantage over non-Jews in terms of lower probability of death due to respiratory TB only during the post-reproductive years. Factors responsible for the observed mortality differential will be presented and the evolutionary implications of these findings will be discussed.

9:20 - F. Forest, Y. Bergeron, Université de Montréal

Abstract: Vieillissement et sémantiques différentiels: la perception de soi et des autres chez les sur-vieillis

Le vieillissement différentiel, cette différence entre l'âge chronologique et physiologique des individus, représente un bon indicateur de l'état général de santé. Dans des recherches récentes, nous avons pu constater une association entre ce vieillissement différentiel et des facteurs psycho-sociaux tels que le désir de développement de soi ou la renonciation à ce développement. Ce dernier concept méritait de plus amples investigations, que nous avons faites en partie avec le sémantique différentiel, échelle de perception générale de soi, des autres, et de la société en général. Nos résultats nous indiquent une forte association entre le sur-vieillissement, ou mauvais état général de santé, et la perception du soi, et des autres en général, comme étant "faible" par opposition à "fort". Inversement, les sous-vieillis, ayant une bonne santé générale, ont une vision de soi et des autres beaucoup plus orientée vers le pôle "fort" de l'échelle du sémantique différentiel. Ces nouvelles relations demandent une investigation plus poussée, afin de mieux cerner encore ces associations complexes entre l'environnement socio-culturel et la santé, l'image de soi et des autres et le vieillissement physiologique des individus et de groupes.

9:40 - E. Rivington-Moss, S. Pfeiffer and T.E. Graham, University of Guelph

Abstract: Physique and Energy Balance in Southern Ontario Dairy Farmers

A sample of 106 Wellington County dairy farmers, ages 35 to 67 years, were tested to examine the relationship between occupational activities, physique and cardiopulmonary fitness. Body size is significantly larger than age-matched Canadian males. Estimated percents body fat tend to fall at or below the 50th centile, with one age group significantly leaner than the normative values. Muscular strength (hand-grip dynamometer) is very high. Energy intake, based on three-day dietary records, is higher than the Ontario male mean (2900 Kcal/day compared to 2296 Kcal/day). Cardiopulmonary fitness, as measured by the step test, is also above average. These factors considered together indicate that; despite increased mechanization, these dairy farmers are more physically active than their urban counterparts.

10:00 - Coffee

10:20 - N. Laplante, Université de Montréal

Abstract: Sante et environnement materiel de travail

Le milieu de travail représente certes un élément majeur de l'environnement des populations industrielles. Plusieurs aspects de ce milieu de travail peuvent se répercuter sur l'état de santé des individus. Notre étude vise principalement à évaluer les relations existant entre l'état de santé d'une population de travailleurs et leur environnement matériel de travail. L'impact de ce dernier dépendra des éléments qui le composent, de leur nocivité et de leur concentration, ainsi que de la durée d'exposition des individus et de leur vulnérabilité personnelle. Le niveau de bruit et la concentration de fumées forment les principaux éléments de l'environnement matériel au travail retenus pour notre population. Vraisemblablement, ces deux facteurs se répercuteront respectivement surtout sur les systèmes auditif et respiratoire. Par contre, l'environnement matériel contribue également à l'environnement global de travail, et à ce titre, il pourrait présenter d'autres relations moins spécifiques avec l'état de santé.

10:40 - A. Petto, University of Massachusetts

Abstract: A Life History Approach to the Study of the Evolution of Specific Life Span

A major problem for research into the evolution of longevity is the identification of an appropriate mechanism by which selection can act on life span. More properly focused the question is what role does life span play in an adaptive strategy. Several developmental processes have been identified in recent years as pacers or determinants of maximum life span potential (MLP). By rescheduling these processes it ought to be possible to alter life span, and by extension it would be possible to select different lengths of life as part of an adaptive strategy. In some cases rescheduling of life cycle events among the primates is in direct proportion to increases in MLP, but several deviations from "isometry" among these taxa indicate that such rescheduling is part of an adaptive shift. The life history approach to this question emphasises the interaction at the level of local conditions in time and space allowing one to test specific predictions about adaptation. Evolution of longevity by life history strategy predicts, for example, that the periods of highest mortality should be scheduled away from times when the individual's reproductive value is highest.

11:00 - G. Frappier, Université de Montréal

Abstract: Etude de l'interaction entre l'environnement socio-culturel, les caractères biologiques et les niveaux de santé d'un échantillon féminin canadien-français

L'objet de cette étude repose principalement sur l'axiome fondamental de l'anthropologie stipulant que toute variation du phénotype est possiblement le résultat de l'interaction dynamique entre la variation du génotype et la variation de l'environnement. A l'aide d'une méthode d'analyse multivariée, basée sur la régression multiple, nous désirons mettre à jour les divers facteurs de l'environnement socio-culturel pouvant être associés aux caractéristiques biologiques des individus, et en particulier à leur niveau de santé.

La réalisation des analyses statistiques exige le recours à deux modèles. Le premier, environnemental et génétique, comporte une quarantaine de variables indépendantes définissant la socio-démographie, les facteurs psychologiques liés à l'occupation, l'anomie, les comportements, la morphologie, la condition gynécologique et les prédispositions héréditaires à quelques pathologies. Le second modèle d'évaluation de la santé comprend plus d'une vingtaine d'indicateurs correspondant aux composantes morphologiques et physiologiques de l'organisme. Pour tenir compte simultanément de l'ensemble de ces composantes, nous avons établi un indice de vieillissement physio-pathologique différentiel qui, à lui seul, témoigne de l'état général de santé de l'individu.

A partir des résultats significatifs de ces analyses, nous pouvons dégager les effets, non plus empiriques, mais bien "ajustés", des variables indépendantes sur les indicateurs de santé. C'est ainsi que nous constatons le rôle déterminant que jouent l'âge, la ménopause, l'occupation, la morphologie et quelques prédispositions héréditaires sur la variation des niveaux de santé des femmes de l'échantillon.



11:20 - B.J. Trodden, University of Manitoba

Abstract: A Radiographic Study of the Development of the Permanent Dentition in Canadian Native Children

The purpose of this multidisciplinary study was to determine the mean age and range of variation in the calcification and eruption of the permanent teeth in Canadian Inuit and Indian populations, and to determine whether there are significant genetic differences between these populations and other Native and Non-native North American populations

Variations in the timing of calcification and eruption of the teeth between populations can be extremely relevant to the assessment of age and sex of skeletal material, for both anthropological and forensic purposes. At the present time, all skeletal remains are compared to Euro-american standards of dental development, particularly gingival emergence. As well, with more Inuit and Indian patients seeking comprehensive dental treatment, the recognition of genetic and environmental differences in the development of the permanent dentition could facilitate the timing and the type of dental treatment selected.

Panoramic x-ray data for this cross-sectional study were obtained from several clinical sources in Manitoba. All of the permanent teeth were studied, using twelve stages of calcification and four stages of eruption. The mean age for each calcification score was found to be younger in both Inuit and Indian samples compared to studies of Non-native populations for most of the teeth. A high correlation was found between dental age, measured by a Calcification Index, and chronological age.