

*J. S. G. L. S. L.*

CANADIAN ASSOCIATION  
FOR PHYSICAL  
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NEWSLETTER

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JOHN ALEXANDER WALLACE

1940 - 1978

It is with deep sadness that I record here the untimely and tragic death of one of our Association members. John Wallace died February 14 in his thirty-seventh year as a result of injuries sustained in a skiing accident near Kingston, Ontario. He is survived by his wife Valarie Parsons, twelve-year-old son Christopher John, and mother Janet Wallace of Dauphin, Manitoba.

John was born in Dauphin, where he attended elementary and high school. At the University of Manitoba, after majoring in zoology he spent four graduate years, 1962-1966, studying human anatomy, receiving the M.Sc. in 1964. During this time he became interested in human evolution, an interest which he subsequently pursued in the Department of Anatomy at the University of Chicago, 1966-1968. His formal training was completed during 1968-1972 in South Africa at the University of the Witwatersrand where he studied under Professor P. V. Tobias, receiving the Ph.D. in 1972. In addition to fellowships from each of these three universities, John was awarded a Wenner-Gren predoctoral research grant to support his work in South Africa.

From November 1972 until his death he was a member of the faculty of Queen's University where he taught gross and neuroanatomy to medical students, and set up a course in paleoanatomy for biology and life sciences majors.

The paleoanatomy course with its yearly maximum enrolment of twelve quickly acquired renown on campus for its challenging intellectual content and enthusiastic presentation; as well as for the extremely rigorous standards demanded in critical analysis of the evidence for human evolution, design of research projects, and proper scientific exposition in essay, research report and seminar.

His research on the dentition of fossil hominids, published in a series of superbly precise and elegant articles, brought him international recognition.

During the last year or so he had expanded his interests to the problem of the evolution of functional lateralization in the human brain. At the time of his death he had been collaborating with Dr. John Berry in the Psychology Department at Queen's in a pilot project to search for correlations between morphological asymmetry in the brain and skull, and functional asymmetry as reflected in attributes such as handedness and field-dependency. During the 1977-1978 academic session the research projects of his paleoanatomy students were all related directly or indirectly to the asymmetry study. Following John's death, while helping in the supervision of these projects and attending the seminar presentations, I was deeply impressed by the momentum generated among these

students by his intellectual vigour and dedication. Though John will not see his ideas bear fruit, nevertheless, largely because of his inspiration others are carrying on this study. Its outcome may well point the way towards a significant new avenue of research and a quantum leap forwards in our understanding of human evolution.

A person of John Wallace's qualities is rare indeed. His friends, students and colleagues miss him very much.

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#### BIBLIOGRAPHY OF J. A. WALLACE

- 1964 Rates of cell division during epidermal and pulmonary carcinogenesis. M.Sc. thesis, University of Manitoba. Winnipeg.
- 1970 Form and function of the chimpanzee's masseter muscle. Paper read at the Anatomical Society of Southern Africa, Durban, May 17, 1969. S. Af. Med. J. 44: 534. (abstract)
- 1972 The dentition of the South African early hominids: a study of form and function. Ph.D. thesis, University of the Witwatersrand. Johannesburg.
- 1973 Tooth chipping in the Australopithecines. Nature 244: 117-118.
- \_\_\_\_\_ Molar occlusion in the ape-man (*Australopithecus*). Am. J. Orthod. 63: 606-609.
- 1974 Approximal grooving of teeth. Am. J. Phys. Anth. 40: 385-390.
- 1975 Dietary adaptations of *Australopithecus* and early *Homo*. In: Paleoanthropology: Morphology and Paleoecology. R. H. Tuttle, ed. Mouton, The Hague, pp. 203-223.
- \_\_\_\_\_ Did La Ferrassie I use his teeth as a tool? Current Anthropology 16: 393-401.
- 1977 Gingival eruption sequences of permanent teeth in early hominids. Am. J. Phys. Anth. 46: 483-493.
- 1978 Evolutionary trends in the early hominid dentition. In: African Hominidae of the Plio-Pleistocene. C. J. Jolly, ed. Duckworth, London.

## LETTERS

The Editor, CAPA/AAPC *Newsletter*:

There are two other kinds of "columns" that I would like to see in the *Newsletter*; first, some kind of "gossip" column--who is where doing what (academically) and why; and second, some sort of periodic summary of the state of the art in various subspecialties, and/or statements of new results obtained. I, for one, cannot manage to read even the literature of my main interest--but must teach the entire field. Another possibility might be the announcement of papers published or read since the last *Newsletter*.

Feb. 16, 1978

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The Editor, CAPA/AAPC *Newsletter*:

I was very pleased to see the two reports on paleoanthropology in the People's Republic of China in the CAPA/AAPC *Newsletter*, and I hope it will be possible to continue the reporting of this valuable information. I am bothered, however, that Chinese scholars appear to be out of touch with the current conception that western physical anthropologists have of Chinese fossil material. I find it regrettable that they appear to think that western scientists have not progressed beyond the dated typologizing of the Upper Cave materials as "eskimoids, melanesoids and mongoloids." Nor do they allow that we now view these same individuals as variable members of a modern or near-modern human population with links to the *Homo erectus* forms of preceding periods and to modern *Homo sapiens sapiens*. Clearly, it is imperative that two-way communication with Chinese paleoanthropologists be established!

Feb. 22, 1978

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The Editor, CAPA/AAPC *Newsletter*:

I am writing to ask you to consider the possibility of submitting selected papers from the annual meetings of the Canadian Association of Physical Anthropology to our series, *University of Manitoba Anthropology Papers* (UMAP).

Although we will undertake the responsibility for final typing of manuscripts, we are unable at this time to fund the printing or distribution of papers.

It is usual for the bulk of editorial work to be the responsibility of the author(s). The UMAP Editorial Board reserves the right of final editorial approval.

Feb. 28, 1978

Hymie Rubenstein  
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The *Newsletter* accepts letters, short articles, book reviews and other materials relevant to physical anthropology and its sister disciplines. Authors may submit their manuscripts to any member of the editorial board:

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The *Newsletter* is an official publication of the Canadian Association for Physical Anthropology/l'Association pour l'Anthropologie physique au Canada, and is published in February, July, and October of each year. Membership inquiries and address corrections should be sent to Dr. N.S. Ossenberg, Department of Anatomy, Queen's University, Hamilton, Ont. K7L 3N6

The editorial board gratefully acknowledges support received from the Department of Anthropology, University of Manitoba, and thanks Dr. B. Alfred (Department of Anthropology and Sociology, University of British Columbia) for other assistance.

ENTRE AMIS---JUST WHAT IS THIS ABOUT A  
CANADIAN PHYSICAL ANTHROPOLOGY?\*

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I was asked to speak to you today about Canadian physical anthropology not in my own right as a person, but on behalf of the Association which I represent. I am delighted to do so, but feel obligated to point out that the title of the talk was not coined by me. I first saw the phrase "Entre amis---just what is this about a Canadian physical anthropology" when I received the program of your 47th annual meeting. The title took me by surprise because it is in the class of a rather standard question that American visitors to Canada often ask: What is it here that gives you a sense of self; an identity that is your own and sets you apart from us, for we see no differences between yourselves and ourselves.

Canadians often find it difficult to answer this question because there are so many similarities, at least between anglophone Canada and the United States. The vast majority of Canadians live in a band that stretches across the country close to the American border. The geography of the country is such that the greatest similarity in climate and topography is often not to the east or west of any particular locality, but to the south. Thus, it is often said that regionally Canadians have more in common and share an understanding with Americans directly to the south, rather than with fellow citizens located across the country.

Visitors, or for that matter, immigrants to Canada are often struck by these linkages south of the border, and they fail to see that under the obvious similarities there remain rather important differences. The differences are subtle: at their most obvious they are a matter of style; at a deeper level they are a matter of history and tradition.

In the academic context, as in any other context, these differences are expected to manifest themselves. Indeed they do, but in the case of our discipline they are often unappreciated. During the 1960's the universities in Canada underwent tremendous expansion, as they did in the United States. Because there was a shortage of Canadian-trained, or for that matter, Canadian physical anthropologists, the available positions were filled by young and energetic scholars from around the world, but in particular from the United States. To these individuals fell the task of making competent scientists out of young Canadians who presented themselves for study in human biology. To them also fell the task of imparting a "Canadian style" and substance to their students--something that should not surprise any of us, for we know that science, as any other cultural phenomenon, is culture-bound.

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\* Luncheon address presented at the 47th Annual Meeting of the American Association of Physical Anthropologists, Toronto, April 12-15, 1978.

It is understandable if somewhat sad from the Canadian perspective that this latter task many of our teachers were unable to do. The "new physical anthropology" that transformed the study of that subject in the United States was also imported to Canada. Thus, during the '60's came the influx of genetically-oriented physical anthropologists, later primatologists and even paleontologists and osteologists. Their formal ties were with the teachers that trained them; their mind-set had been shaped by experiences that they acquired elsewhere. Because of their backgrounds the newcomers had had little or no previous contact with Canadian physical anthropology. Most were unaware that indeed there was and is a long tradition of inquiry in physical anthropology in this country. In consequence, we their students have had to discover our heritage independently.

The history of Canadian physical anthropology extends over 125 years. The earliest paper in this field, published in a British journal in 1848, was entitled "On the physical characteristics of Eskimaux" (King, cited in Popham, 1950). The earliest paper published in a Canadian journal--"The Huron race and its head form"--appeared in 1871 (Popham, 1950). Its author was Sir Daniel Wilson, once president of the University of Toronto. Research in the physical anthropology of Canadian native peoples was particularly intensive in the fifty years that spanned the period between 1880-1930. Articles were published in journals such as *Transactions of the Nova Scotia Institute of Science*, and *Transactions of the Royal Society of Canada*, as well as journals published in Czechoslovakia, Denmark, England, France, Germany, Russia, and the United States. The list of investigators includes not just the Canadians Wilson from Toronto or Professor Tachet from Laval (F. J. Melbye, pers. comm.), but the "greats" of that time period, namely Boas and Hrdlicka.

The majority of the studies that were done during these fifty years were funded by non-Canadian sources. However, by the early 1920's the National Museum of Canada recognized the need to collect data on Canadian native peoples while it was still possible, and so sponsored J. C. Boileau Grant, then Professor of Anatomy at the University of Manitoba, to carry out extensive anthropometric surveys of the Indians of central Canada. Grant was an extremely competent scholar and a prolific writer. His work spanned anatomy, osteology and anthropometry, and even extended into the then beginning study of serology. After he became Professor at the University of Toronto Grant set up the Laboratory of Physical Anthropology in the Department of Anatomy, and he influenced anatomists like Duckworth and physicians like Jim Anderson to take up the study of physical anthropology (R. Popham, pers. comm.).

Jim Anderson many of you know. His students in osteology were the heirs to a long tradition of research in physical anthropology in Canada. His students have since produced their own students, several of whom now hold university appointments across the country. These young osteologists have tended to work in close conjunction with Canadian archaeologists, carrying on the mutual involvement and interdependence that stamped research in "non-social anthropology" for over 100 years in this country.

In the early 1970's it became very clear to physical anthropologists in Canada, particularly to those who were trained in specialties other than osteology, that room had to be made for them within a Canadian context. In effect, we needed an association uniquely our own, whose central purpose was to provide an opportunity for exchange of ideas between students of evolution in all its dimensions. At another level the purpose of such an association

was obvious: to ensure our own financial survival, to make sure that we have the opportunity to engage in research that we define as important, funded by Canadian granting agencies.

To this end we have had moderate success. The Canadian Association for Physical Anthropology was formed six years ago, and has a membership of 75-80 people, of whom about half are professionally employed. When we meet, as we do annually, we must listen to each other's papers else each speaker addresses the walls. Our small size demands that we interact with each other, and the meetings provide the opportunity to be informed of developments in demography, genetics, osteology, paleontology and primatology. Although the CAPA/AAPC has been in existence for only six years, we have already staged one highly successful international symposium that honored Davidson Black, the Canadian anatomist who named and was involved in the study of *Sinanthropus pekinensis*. In addition to such activities we also publish a *New Letter* through which medium we communicate during the year.

In short, we are young with the energy and idealism that comes from naiveté, but hopefully, not ignorance. We need encouragement and assistance to develop intellectually and come to the flowering that our predecessors intended. When that stage is attained, as we think it will be, perhaps it will not be necessary for you to ask either of us or among yourselves as you did on this occasion: "Just what is this about a Canadian physical anthropology?"

#### REFERENCE

- Popham, R.: A bibliography and historical review of physical anthropology in Canada: 1848-1949. *Revue Canadienne de Biologie* 9:175-198 (1950).

PHYSICAL ANTHROPOLOGY AND THE  
PROGRAMMABLE CALCULATOR

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Digital computers play an important role in bioanthropological research. They are used in the analysis of data as well as in the resolution of theoretical questions such as the evolutionary history and relationships of populations. In addition, they are increasingly employed in data base storage and retrieval.

In the development of computers a technological revolution has been taking place whereby smaller and smaller electronic devices perform increasingly more complex functions at higher speeds and lower costs. This same revolution has also produced pocket sized calculators, beginning in the early 1970's. In the past several years, as manufacturers produced integrated circuits which incorporated more and more capabilities, new machines have been developed which are capable of being programmed either directly from the keyboard or from prewritten programs read into the machines from magnetic cards. These pocket programmable calculators (or PPC's) have opened up new avenues of research possibilities. For example, preliminary computations or analysis of data can be done while one is in the field collecting data.

The objectives of this report are to provide information on the capabilities of pocket programmable calculators, and to describe some of their potential applications in physical anthropology.

Characteristics of Programmable Calculators

There are two basic types of programmable calculators: the key programmable and the fully programmable. The key programmable is programmed by keying in the program via the keyboard (which temporarily stores the program in the program memory). The fully programmable has the capability of being able to read a program, which is permanently stored on a magnetic card, into the program memory.

PPC's are available from several calculator companies. However, only Hewlett-Packard and Texas Instruments produce fully programmable calculators. There are differences in some features among the various models of fully programmable calculators, but none are of major importance in terms of their data analyzing capabilities. The Texas Instruments TI-59 will be described as an example of a typical programmable calculator since I am familiar with this instrument and have used it in my research.

The TI-59 is like any pocket calculator in its external appearance. It has 45 keys and is capable of performing 175 preprogrammed functions and operations. These operations can either be accessed directly from the keyboard or can be used as part of a program. There are 120 general purpose memories which can be partitioned between data and program storage use. The partitioning ranges from 100 data memories and 160 program steps to no data memories and 960 program steps.



The TI-59 programming capabilities are much like a small ultracompact computer. It has ten user definable keys which allow direct access to various parts of a program. Programs are capable of utilizing up to six levels of sub-routines as well as being able to loop. In addition, both conditional and unconditional branching can be performed.

Texas Instruments has developed programs for a wide range of applications and has made them available to users of the TI-59. These include programs dealing with applied statistics, navigation, surveying, and games, in addition to the master library of general purpose programs that comes with the TI-59. Each library is contained in a small solid state module which plugs into the back of the calculator. These modules, containing up to 25 programs with 5,000 steps, are accessed either through the keyboard or under program control.

Another source of prewritten programs is the Professional Program Exchange which Texas Instruments runs for users of the TI-59 and SR-52 calculators. This program involves an extensive base of programs written and tested by professionals in various fields. One can order any program in PPX and receive complete documentation on it. Additionally, when a researcher has developed a program he may submit it for publication and thus make it available to other PPX members.

When prewritten programs fail to meet one's needs, the TI-59 can be programmed with your own programs. The calculator is programmed from the keyboard to perform the same steps automatically that would have been done by hand on the calculator. When a program has been edited and "debugged" it can be recorded on a magnetic card for future use. The TI-59 can also record data that is stored in any of the data registers (recording up to 60 on a single magnetic card).

The TI-59 (as well as the SR-52 which it replaced) can become a part of a sophisticated computational system when it is added to the PC-100A printer. With the printer a hard copy printout of results can be produced. In addition, it can be used to print intermediate results without a program having to stop to display a result. Lastly, it can be utilized to list all the steps in a program and to print specific types of data, such as histogram plots.

### Applications

Programmable calculators are capable of analyzing many types of qualitative and quantitative data. Many of the advantages of utilizing computers in data analysis, such as performing analyses quickly and accurately, eliminating the drudgery of executing repetitive computations, and computing complex and involved statistics, are also applicable to PPC's. Often they may be a less expensive and less complicated means of getting a particular analysis done than a computer would be.

PPC's are especially amenable to data analysis when the size of the data is not prohibitively large. Even when the data base is large (e.g. sample size in excess of 200 with 25 or more variables), preliminary analysis can be run on a PPC to determine what other statistical techniques are appropriate. They are capable of performing mathematical modeling and making projections based upon data. Furthermore, such machines allow analysis to be worked out quickly and on the spot. The great advantage of a programmable calculator is that it gives the decision making powers of computers in a decentralized and personalized manner.

There are a number of situations in which PPC's are inappropriate for data analysis. When a large amount of data of many variables is to be analyzed, programmable calculators are of limited utility due in part to the slowness of data entry and the possibility of error (since data has to be keyed in). They would also be of limited use when analysis is centered upon various multivariate statistical techniques, such as Mahalanobis'  $D^2$ , since such programs, involving intricate computations, would almost always exceed the program memories and capabilities of the machines.

I will now discuss how programmable calculators have been useful to me in many of my own analyses of data. In doing so, I will be briefly describing several programs which are useful in some of the sub-disciplines of physical anthropology.

I have used many of the prewritten statistical programs to acquire basic information about data (e.g. mean, standard deviation, etc.). In addition, I have written programs which test for the homogeneity of variance of samples. Testing for homoscedasticity is important because most statistical tests, such as analysis of variance, assume an equality of variance. In cases where there is heteroscedasticity I have two programs which are approximate tests for the equality of means and are appropriate for such cases.

I have written several programs which pertain to my interest in skeletal biology. I have, for example, developed a program\* for the construction of demographic life tables which allows a researcher to compute the values of a complete life table with up to 30 age intervals. The program makes allowances for cases where the number of years in each age interval is not the same, as well as for the general situation in which each age interval is of equal length.

As well, I have written programs for the assessment of biological relationships between populations which utilize either multiple discrete traits or metric measurements. One program for the measurement of the biological differences between populations using discrete traits makes use of the Grewal-Smith statistic. This program utilizes the Freeman and Tukey transformation to stabilize the variance of the discrete traits. It outputs the mean measure of distance (M.M.D.), variance, and significance of the M.M.D. between pairs of populations. The program allows comparisons of several populations to be made fairly rapidly.

Another program which assesses population affinities uses metric data and Penrose's modification of the coefficient of racial likeness. The program automatically computes and prints the mean square, size, shape, and mean distance (with the correlation between all variates taken into account) statistics for up to six populations with a maximum of ten variables. When there are more than ten variables, other Penrose programs can be utilized to make pairwise comparisons of populations.

The programmable calculator can be of use in anthropological genetics. Computers have been employed extensively in genetic research in recent years. The programmable calculator, while not capable of involved analyses or complex modeling, can simulate many genetic allele systems under many differing selective

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\* Demographic life table program, for use with the TI-59, is available from the author.

conditions and can compute genetic relationships of populations based upon multiple allele systems. Two programs have been written which simulate genetic change in a two and a three allele genetic system. The programs automatically calculate the frequency change of the genes and the average fitness in each generation for any number of generations given the fitness values of the genotypes. Even more complex modeling than this is possible with the programmable calculator.

#### Conclusion

The programmable calculator can be of great use in primary analyses of certain types of data, as well as an important supplement to the digital computer. The most attractive features of programmable calculators include ease of programming, ease of modifying existing programming, relatively low cost, and portability combined with flexibility. Their importance will increase with further advances in data and program memory technology.

THE NATURE OF THE ARCTIC SMALL-TOOL TRADITION  
FROM A BIOLOGICAL AND LINGUISTIC VIEWPOINT -  
SOME POINTS FOR DISCUSSION

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The Arctic Small-Tool Tradition (hereafter, ASTt) marks the first clearly unitary grouping in the true North American Arctic zone. Both tool typology and clear evidence of cultural diffusion indicate that this is the product of either a single population or set of closely related populations. The fundamental tool inventory consists of standardized small chipped stone tools including bifacial points and side blades, microblades, burins, retouched burin spalls, and small scrapers and knives. It has no clear North American precursor and Irving has suggested an origin from an Interior Siberian 'Neolithic' culture such as is seen at Bel'Kachi on the Aldan River (north of Lake Baikal). However, unlike sites such as Bel'Kachi, pottery is always absent in ASTt contexts.

The vast bulk of ASTt sites in Alaska are the remains of temporary camp sites and lack obvious habitat construction. This is seen at both coastal and interior sites. Only three areas have currently shown more substantial evidence of occupation, including dwelling structures. These are at Onion Portage on the Kobuk River, in the Upper Noatsk drainage on the northwestern edge of the Brooks Range, and at Brooks River in the Alaskan Peninsula. These sites range between 40 and 150 miles from the coast. On this basis it is currently suggested that the primary ASTt adaptation was for caribou hunting and local river fishing with some brief sea-mammal hunting on the coast. Permanent dwellings would not be expected outside of particularly suitable interior sites. Further indications are that ASTt populations are seldom found outside the tundra and immediately neighbouring coastal areas. No clear evidence exists for contact with either the slate-polishing cultures of the Aleutians as at Chaluka and Sandy Bay Beach, or late interior manifestations that were earlier lumped, albeit loosely, within a Northwest Microblade tradition.

An assumption that appears to underline current interpretations of the ASTt is that the population involved was of Arctic Mongoloid physical type and speaking an Eskimo language or its immediate predecessor. This is usually combined with an underlying realization that the cultural origin is Siberian. At the present time it is difficult to know whether these postulates can explain all the currently known evidence. This is especially true in the light of the lack of obvious contact between the ASTt and the Aleutian/Pacific Coast of the Alaskan Peninsula region. These zones appear to show considerable long-term continuity, a facet not seen in the north, which appears to relate to the distribution of the related languages, Aleut and southern Eskimo (Yupik).

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\* Dr. Meiklejohn is presently at the Institute of Human Biology, Rijksuniversiteit Utrecht, The Netherlands.

Is an error being made in the lumping of biological and linguistic evidence as known to date? Are we lumping dissimilar phenomena? Furthermore, how certain are we about the parameters involved here?

At the present time it is difficult to find an archaeological event in the Bering Strait zone that can be linked with the postulated split between the Aleut and Eskimo languages (probably with a minimal estimate of ca. 2500 BC). On the other hand it is not difficult to visualize the development of such a dichotomy between relatively stable populations settled along the south Alaskan coast from the panhandle to the Aleutians. Recent work has indicated that there are clear lower limits to the number of persons required to maintain an internally consistent, functioning gene pool over any considerable number of generations. The effective practical number of persons appears to be ca. 1000 although a figure half that size may be feasible under idealized circumstances. A further set of data suggest that the process of sedentism is highly likely to result in considerable population growth. The pattern seen in southern Alaska is highly consistent with increasing sedentism and population growth, especially as compared with populations further to the north within the ASTt zone. Under such circumstances it is to be expected that developing populations in southern Alaska would have become increasingly endogamic (used in reference to the effective geographical size of the biological deme). Within such a framework, isolation sufficient to result in linguistic differentiation could be expected.

From the above comments the following *ad hoc* model might be suggested. Both the Pacific Coast and more northerly ASTt precursor populations are likely to have been members of the general category defined as Arctic Mongoloid, distinct from both American Indian and more southerly Asiatic populations. Such a population may have been present in the more southerly zone for upwards of 10,000 years. In the more northerly zone a more recent Asiatic origin is possible. Indication of continuity in the southern zone suggests that a linguistic continuum is also likely. It is therefore possible to suggest the existence of an ancestral Eskaleutian language slowly developing towards the current bipartite structure. It is much less likely that the ASTt population had the same geographical roots. In all likelihood it has a more recent Siberian origin, presumably involving the speaking of a Siberian language, probably within the general Palaeoasiatic stock [Chuckchee, Yukaghir, etc.].

The south Alaskan and ASTt populations can therefore be seen as generally related, but sufficiently separated in times of arrival in the Alaskan zone as to have unrelated linguistic bases. Their common derivation from Siberian populations is seen in their general identification as Arctic Mongoloid. Their temporal separation is, however, sufficient to result in no close linguistic and cultural relationship.

Several further *sequiturs* arise from the above. The definition of skeletal material in Dorset context in eastern Canada requires examination. It appears highly probable that the methods used to define this material were sufficient to separate Arctic Mongoloids from American Indians. It is much less likely that they were sufficient to distinguish between Arctic Mongoloid sub-groupings. The question of their affinity must therefore remain open.

The degree of relationship between northern and southern Eskimo groupings also needs re-examining. It is likely that continuities between southern populations may have been overlooked. A pattern of clinal distributions along the Pacific coast might be expected. The continuity of southern Alaskan Eskimo

populations and northwest Coast Indian populations has been commented upon in other studies, both cultural and biological.

In conclusion, it is suggested that the biological and linguistic affiliations of the ASTt require further definition. It is entirely likely that this population is neither biologically or linguistically Eskimo. Introduction of Eskimo populations into the northern area is likely a phenomenon occurring no earlier than the Norton tradition (*sensu lato*).

#### POSTSCRIPT

Two recent papers which deal with this same general topic of Eskimo origins and affiliations are:

McGhee, R. 1977. Parsimony isn't everything: an alternative view of Eskaleutian linguistics and prehistory. *Can. Arch. Assoc. Bull.* 8: 60-81.

Szathmary, E. J. E. and Ossenberg, N. S. In press. Dogma disputed: are the biological differences between North American Indians and Eskimos truly profound? *Curr. Anthropol.*

This note was written before seeing either of these references.

BOOK REVIEWS

DIAGNOSTIC CRITERIA OF SYPHILIS, YAWS AND TREPONARID (TREPONEMATOSES) AND OF SOME OTHER DISEASES IN DRY BONES (FOR USE IN OSTEO-ARCHAEOLOGY). By C.J. Hackett.

Springer-Verlag, New York, 1976. 134 pp., 34 figs., 10 tpls., 4 app., index. U.S. \$37.90 (paper).

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All of us with research interests in osteology have eagerly, if not desperately, been waiting for this book. C. J. Hackett's now classic 1963 paper, "On the origin of the human treponematoses" (*Bulletin of the World Health Organization* 29:7-41) marked a milestone in theory after some 30 years of personal research on the subject and should still be required reading in university courses on paleopathology. Now, with more than a decade of additional experience, Hackett has provided us with what may well be the definitive reference work for the diagnosis of syphilis and related diseases in dry bone specimens.

Hackett's broad experience is evident in the production of this monograph, although it is specifically based on original research he conducted between 1966 and 1969. The study centers on 424 crania and calvariae and 250 long bones in 22 European medical museums he visited during that period. Not included in the analysis, although certainly supportive of the effort, are an additional 248 specimens Hackett recorded in those institutions and 15,279 specimens he had "seen" in general museums located in Australia, New Zealand, and the United States of America (including Hawaii). Those of us who think we have seen a fair number of pathological bones may be permitted to weep.

The author's method of study in the medical museums was to examine all bone specimens with changes thought to be due to certain infections including those labelled syphilis and tuberculosis. Specimens with changes due to other causes, such as "trauma, Paget's disease, chronic leg ulcers, pyogenic osteomyelitis and tumours" were also recorded in order to enhance knowledge of differential diagnoses in the identification of syphilis.

Apparently, most if not all of the 674 core data specimens possessed "label diagnoses," of which 41 were authenticated by supporting clinical evidence. In exemplary fashion, Hackett initially ignored the labels, treating all the diagnoses as suspect, and sorted the specimens into four simple and objective categories of pathological appearance: (1) more bone, (2) less bone, (3) dead bone, and (4) deformed bone. From this sorting, main and secondary changes were identified and an appropriate terminology was developed for their description. Finally, after repeated sorting and review, 15 main cranial and calvarial changes and 14 main tubular long bone changes emerged for the study of diagnostic criteria. Hackett then reverted to the label diagnoses to see which of the main changes were more or less frequently associated with the different diseases. Sequences presumably indicating a chronological succession of the bone changes in a disease were noted and diagnostic criteria were established.

The monograph's title page notation "With 34 Figures" is somewhat of an understatement. In actual fact, there are 39 separate photographs, five schematic representations (consisting of 41 separate drawings), two diagrams,

and one map. These figures are an integral part of the instructive scope of the work and constitute a veritable atlas of dry bone pathology. They, alone, are well worth the price of the monograph.

The photographs, 30 of skull changes and nine of long bone changes, are superbly rendered in the meticulous tradition of medical illustration. In addition to the skull photographs showing syphilitic changes, most of which illustrate the author's diagnostic criteria, there are six photographs showing metastatic neoplasm changes, two showing calvarial changes associated with tuberculosis, two depicting pyogenic infection, and one illustrating an early change of *facies leprosa*.

The fewer long bone photographs undoubtedly reflect the fact that long bone changes in syphilis are usually less diagnostic than those in the skull. Two photographs do depict diagnostic changes, while five show diagnostic criteria that are deemed by the author to be "on trial" (i.e., subject to further testing). The other long bone pictures depict diagnostic changes in osteomyelitis (haematogenous pyogenic infection) and in Paget's disease.

The schematic representations demonstrate the changes which occur in the caries sicca sequence of calvarial syphilis, the sequence leading to the perforation of metastatic neoplasm, and the sequence leading to the perforation of tuberculosis. For each sequence, both outer table and cross-section views of the affected part of the calva are given. An additional schematic depicts four sequential changes in long bone syphilis with shaft surface and longitudinal section views.

It should be evident from this review that Hackett's monograph is more than just a treatise on bone changes in syphilis. It is a solid contribution to general paleopathological diagnoses. In all, 36 diagnostic criteria are proposed for nine separate bone diseases (add hyperostosis frontalis interna to those mentioned above). Complementing the flavour of general application are discussions of other afflictions such as osteomata and the haemoglobinopathies. Detailed definitions of descriptive terms which are generally used in paleopathology as well as of those introduced by the author provide a welcome glossary. Although Hackett's analysis deals with European specimens, he provides an excellent review on the question of pre-Columbian syphilis in the New World with commentary on alleged syphilitic specimens he observed in the American museums.

If there is any criticism to level at the monograph, one might nitpick at Fig. 16 which is said to depict changes diagnostic of *facies leprosa*. In my view, the apparent changes might just as readily be interpreted as postmortem damage. However, this ambiguity may reflect the less-than-excellent quality of this particular photograph.

I would not criticize the price. Initially, I was disgruntled when I received my order because of the unexpected small size of the book and its very thin paper cover. But the price of publishing has skyrocketed in the past few years and, unfortunately, the quality of many publications has diminished. Springer-Verlag is one of the few publishers that has maintained a consistently high standard in the production of its monographs. That quality *and* the impeccable scholarly content of the book make it a valuable addition to the osteologist's library.

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WOLF AND MAN: EVOLUTION IN PARALLEL. Edited by  
Robert L. Hall and Henry S. Sharp.

Academic Press, New York, 1978. 232 pp., index.  
U.S. \$19.50 (cloth)

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The contributors to this volume include zoologists, psychologists and anthropologists; the topical foci are collective behaviour, communication, and systematic similarities between canids and hominids as parallel evolutionary episodes. The squib on the dust jacket states that the book should interest "lay people, beginning students, and advanced scholars alike." To a degree this is true--for example, Pamela McMahan's "Natural History of the Coyote" is anecdotal but clearly grounded in substantial research experience and it is very engagingly written. However, several of the other pieces, notably Michael W. Fox' "Man, Wolf and Dog," seem overly facile in drawing parallels between canids and contemporary humans in terms of rituals of epideictic display and "tribal dances" or combat and sports. The case for epideictic display has been well made by Rappaport (1968) but is still not unproblematic (see Bennett 1976:156-208). If the case cannot be completely made in 300 pages by Rappaport, then Fox' glib one-sentence assertion is likely to be aggravating to professionals and misleading for students and lay readers alike. Fox also does considerable damage to the concept of neoteny which is not simply "the persistence of infantile characteristics, either physical or behavioral, throughout life" (p. 23) as he asserts, but instead has an ontogenetic basis and is only commonly observed in the arrested development of axolotls and some other exotic salamanders. Certainly wolves are not neotenous and the old chestnut that humans are the neotenous form of an ape is simple undemonstrable.

I also feel that while using an artist's conceptual drawings is a good idea (and appreciated by professionals as well as students), such drawings should be accurate. In this respect most of John Slater's drawings are adequate or are labelled "fanciful" where they are, although what appear to be enormous mountains behind a Chipewyan hunting encampment are at least a thousand miles out of place. Like most edited books then, this one too is uneven. On the other hand, most of the research reports or summaries are good (although dry) and several papers, notably those by both the editors--especially Hall's "Variability and Speciation in Canids and Hominids"--are excellent. The editorial introductions and conclusions are also very good.

The basic rationale for studying canid evolution as a useful foil for the examination of hominid evolution stems from: (1) the great similarity of hunting ranges of the two groups (which does not hold true for baboons, for example); (2) a likely isomorphism between canid and hominid systematics (dire wolf: wolf: coyote: robust hominid: *Homo*: gracile hominid) in the context of predatory niche (large game: large to intermediate-sized game: smaller game--respectively); and (3) the fact that canids have "group-specific traditions ("culture") which are "symbol" dependent.

All of this makes good sense and research is now underway to establish the prehistory of wolves in British Columbia and elsewhere. As a cultural anthropologist I have no real quarrel with any of this except to point out that what symbolic anthropologists mean by "symbol" à la Geertz (1973:126), Leach (1976:12), or Lévi-Strauss (1962) is not exactly what Hall or Sharp mean by

"symbol." Contemporary human communication includes levels of "symbolic" arbitrariness ranging from the iconographic to mathematics while including notions of the sacred and of morality. I do not mean to imply that canids are mere users of simple trigger signals (although both humans and wolves use these too). Clearly, they are not. However, canid communication appears to be restricted mainly to metonymy (natural indices and signs, but see Leach 1976:9-16). Of course, hominid communication systems may not have differed greatly from this (see Stephenson, in press).

Contrary to the apparent expectations of the authors I did not find myself at all astonished at the prospect of calling wolves "culture bearers." Culture has not been much of a categorical distinction for anthropological science in any event, but it is a powerful and ideologically loaded word. Clearly group "mind" in the Batesonian communication matrix sense is an attribute of life itself which is quite refined in many species (dolphins, humans, wolves, elephants, other primates, etc.). It is certainly time to use distinctions like index, symbol, icon, etc., to discriminate messages within discrete communication systems and *among* species rather than using "culture" as a rationale for human discrimination *against* other species. This is clearly the sentiment of all these authors and I applaud them for it even if I offer criticism for their execution.

#### REFERENCES

- Bennett, J. W.: The ecological transition: cultural anthropology and human adaptation (Pergamon, Toronto 1976).
- Geertz, C.: The interpretation of cultures (Basic Books, New York 1973).
- Leach, E.: Culture and communication: the logic by which symbols are connected (Cambridge University Press, 1976).
- Lévi-Strauss, C.: La pensée sauvage (Librairie Plon, Paris 1962).
- Rappaport, R. A.: Pigs for the ancestors: ritual in the ecology of a New Guinea people (Yale University Press, 1968).
- Stephenson, P. H.: Towards a dialectical understanding of the evolution of human communications systems. J. Hum. Evol. (in press).

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## FIRST CALL FOR PAPERS

The sixth annual meeting of the CAPA/AAPC will be held November 9-12, 1978, in Niagara-on-the-Lake, Ontario.

Abstracts should be sent to the Local Arrangements Committee at McMaster University. The following types of papers are sought:

1. *Recent advances.* Presentations suitable for workshop sessions.
2. *Current reviews.* Summaries of important or recent developments in particular fields.
3. *Research reports.* Formal presentations of current research.
4. *Student papers.* Formal presentations from students are encouraged. Individuals wishing to compete for the Oschinsky-McKern award for the best student paper should get in contact with the Local Arrangements Committee as soon as possible.
5. *Poster papers.* Manuscripts, displays, etc.

Those interested in submitting papers in the first two categories are urged to submit their abstracts and ideas early. Applications for external funding of symposia must be made 4 months in advance of meeting date.

Further information may be obtained from:

Dr. E. Glanville or Dr. E. J. E. Szathmary  
Local Arrangements Committee  
Department of Anthropology  
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Deadline for receipt of abstracts is September 30, 1978, if publication in the October *Newsletter* is desired.

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## ANNOUNCEMENT

Anticipated changes in format and publication expenses require that the *Newsletter* be distributed on a subscription-only basis in future. Regular members of CAPA/AAPC who are in good standing will continue to receive the *Newsletter*; subscription costs are automatically included in the dues assessment. Other persons will be able to receive the *Newsletter* at the reduced associate rate, but will not be eligible for special consideration on other CAPA/AAPC publications. If you wish to join or rejoin the Association as a regular member, or wish to receive the *Newsletter* only as an associate, please complete the attached "Membership Dues" form at your earliest convenience.

MEMBERSHIP DUES NOTICE

Membership in the Association is open to all who are interested in its objectives: the advancement and dissemination of physical anthropology in Canada. There are three categories of membership: full, associate and institutional. Full members only have the right to vote in the Association.

At the fifth annual meeting, Banff, November 1977, it was agreed that annual dues should become payable upon receipt of the dues notice sent out following the annual meeting, and should cover the time period from that meeting until the next. The members also voted to increase the annual fee by 50 cents to support our membership in the International Union of Anthropological and Ethnological Sciences.

If you wish to *apply* for new membership, or to *renew* your membership, please complete the form below. Make out your cheque to the Canadian Association for Physical Anthropology. Please mail THIS WHOLE PAGE (easier to file than a torn-off form!) plus your cheque to:

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