PAPERS ON PALEOPATHOLOGY
presented at the
FIFTH EUROPEAN MEMBERS MEETING

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Siena, Italy
Paleopathology Association members, distinguished guests: It is with great pleasure that I welcome you to this, the Fifth Biennial European Meeting of the Paleopathology Association. Once again, as for the Second Meeting in 1978, it is being held in Italy. For this, we have to thank first of all Dr Brunetto Chiarelli for his early encouragement, Dr Emma Rabino Massa, who has been in charge of both meetings, Professor V. Capecchi, our gracious host here in Siena, and the distinguished Scientific Committee, the members of which are drawn from eleven European countries. The participants in the meeting come from 16 countries, and the range of subjects covered in their papers is amazing in its breadth and variety. We are looking forward to a very stimulating meeting, at which we all expect to learn a great deal.

Two years ago, in Middelburg, I talked about the avenues opened to our research by the proliferation of new scientific techniques, about the progress made by study groups collaborating to gather information on a particular disease entity, and of how important this worldwide collaboration is for the future of paleopathology. At that time, I mentioned briefly the danger of what is usually referred to as the 'reburial issue,' although I did warn: 'Antagonism to research on human bodies has always been with us, and is increasing.'

Now, however, it is time for all of us to face this issue together, directly, otherwise the bright promise may fade, and research on ancient remains grind to a halt.
The problem is not just in the United States, although there we have perhaps been facing it longer than elsewhere. The 1979 Archaeological Resources Protection Act stated that where such resources, defined as 'material remains of human life or activities at least a century old,' were found on Indian land, they were to remain the property of the tribe or of the individual Indian having rights of ownership. The American Indian Movement also started a campaign to remove specimens already in museums and rebury them on tribal land, in unmarked graves.

As a result, the American Academy of Forensic Science issued a strongly worded resolution in February 1982, protesting against the destruction of what they called 'respectfully maintained collections of human skeletons,' as being against the best interests of the population as a whole. Later that year, the American Association of Physical Anthropologists added its voice through a 'Committee on the Scientific Study of Human Remains,' with a resolution opposing reburial except where requested by a specific living descendant.

Similar problems have been faced by paleopathologists in both Egypt and Israel, and now, as most of you are aware, Australian collections are threatened as the result of a ruling by the Supreme Court of Victoria. Both Melbourne University and the National Museum of Victoria have been ordered to return their enormously valuable collections, which include skulls up to 15,000 years old, to the Aboriginal people, for reburials. Even though many of you here do not work on skeletal remains of minority groups or colonial peoples, and thus feel relatively
free from pressure, you are not really immune to attack: stones thrown into the water make ripples, ripples have a way of spreading — and antagonism to research on any human body is stronger than many of you may realise.

We have, therefore, set up our own committee to study the whole question of the preservation of human remains. This group of seven people is entirely American at this point, but they have been chosen to represent a wide geographical and disciplinary spread, and they will solicit information from all our members. They aim to document both the actual and potential benefits that accrue to humanity from paleopathological studies, stressing the need for legitimate use of this valuable material and its importance to the future of medicine. For this, they need to accumulate evidence — and all of you can help. They will provide support for the cause of preservation when proposals are made to rebury remains from archaeological sites, at the same time listening sympathetically to what are in many cases sincere and heartfelt objections. Expert witnesses will obviously be needed to step forward when court cases are to be heard. In addition, they will work at developing a protocol for the examination of ancient remains, so that these may be preserved to the best of our ability.

For, make no mistake, ladies and gentlemen: Researchers themselves must shoulder some of the blame for the current storm. On two occasions, I myself have seen ancient human remains treated with wanton, purposeless disregard, and at our 1982 Annual Meeting in Toledo, one of our most distinguished members made a slashing attack on his own colleagues for their
careless handling of absolutely irreplaceable material. This is something that we must change, lest the actions of a few put the entire future of paleopathological research at risk. Your care in conserving this material is needed, so that all of us can be above suspicion, and our concern for the preservation of these remains be obvious to all. By helping to develop a coherent history of disease in ancient times, we contribute to the total history of all mankind. We must build bridges to the people who are now demanding indiscriminate reburial, and show them that what they are reburying is their own history, and that they are, unwittingly, destroying their own past.

One of our members said:
'There are many ways of honoring the dead. One way is to learn from them, for they have much to teach us about their lives.'

And this fact is recognised in our Association motto: 'Mortui viventes docent' -- 'The dead teach the living.'

Eve Cockburn
STUDYING THE PAST --- BUT WHAT DOES THE FUTURE HOLD?

Eve Cockburn (U.S.A.)

The avenues opened to research by the proliferation of scientific techniques, the progress made by study groups collaborating to gather information on a particular disease entity, and the importance of the Association's worldwide network for the future of paleopathology, these formed the theme of my opening address in Middelburg in 1982. Now, we must also consider the dangers facing this discipline and the steps we should take to face them.

The 'reburial issue' is a problem not only in the United States: it is worldwide. American scientists have been struggling with this difficulty for many years. Both the American Academy of Forensic Science and the American Association of Physical Anthropologists have issued strongly worded resolutions protesting against the destruction of 'respectfully maintained collections of human skeletons,' which is serving the wishes of special interest groups, but is against the longterm good of the population as a whole. Similar problems have been faced by paleopathologists in both Egypt and Israel, and now Australian collections are threatened as the result of a legal ruling, whereby two major institutions have been ordered to return their enormously valuable collections, including skulls up to 15,000 years old, to the Aboriginal people for reburial.

The Paleopathology Association has therefore set up a committee to study the whole question of the preservation of human remains. The aim is to document both the actual and potential benefits that accrue to humanity from paleopathological studies, stressing the need for legitimate use of this valuable material and its importance for the future of medicine. The committee will provide expert support for the cause of preservation when proposals are made to rebury remains from archaeological sites, while at the same time listening sympathetically to what are in many cases sincere objections. Members will also work at developing a protocol for the examination of ancient remains, so that these may be preserved to the best of our ability.

By helping to develop a coherent history of disease in ancient times, paleopathologists help to contribute to the total history of all mankind, but care in conserving this precious material is needed, so that our concern for the preservation of these remains be obvious to all. Scientists must work to build bridges to the people who are now demanding indiscriminate reburials, and show them that what they are reburying is their own history, and that they are, unwittingly, destroying their own past.

One of our members said: 'There are many ways of honoring the dead. One way is to learn from them, for they have much to teach us about their lives.' And this fact is recognised by the Association in its motto: 'Mortui viventes docent' --- 'The dead teach the living.'
UNKNOWN ALTERATION OF THE MEDIAN ATLANTO-AXIAL JOINT REVEALED BY PALAEO-OSTEOLOGY

C.A. Baud (Switzerland)

The skeleton of a mature male 174 cm in height from the Merovingian period, Saint-Jean-de-Gonville, Ain, France, was examined. The medial aspect of each lateral mass of atlas bears an articular facet, which is elongated and faces medially and slightly upwards; the posterior border of the facet has a small tubercle for the transverse ligament, and the inferior border is connected with the inferior articular facet by means of a narrow groove. The sides of the dens axis present a counterpart surface, and the atlas-dens interval is very narrow. Microradiographs of undecalcified sections show the articular surfaces of both medial and inferior facets similarly coated with a layer of calcified cartilage. The narrowness of the atlas-dens interval probably prevented the attachment of the transverse ligament to encroach upon and obliterate this surface, a morphogenetic process comparable with that of the squatting facets on the talus and tibia.

TREPANNING PRACTICE IN PREHISTORIC DENMARK

Pia Bennike (Denmark)

As part of a comprehensive paleopathological study, including computer registration of all human remains from prehistoric Denmark (Mesolithic to Viking Age) a total of 19 skulls with trepanations was found, representation 3% of all well preserved prehistoric skulls. New C14 datings showed that skull surgery in Denmark could be dated back to 3,500 years B.C., and most trepanned skulls were from the Neolithic periods. Very uniform locations of the trepanations may indicate that the skull surgery was mainly performed for identical reasons, primarily after man-induced injury. Sex determination of the skull seems to confirm this theory. Survival from the trepanations seems to be very high, over 80% showing new bone formation around the scars of the bone.

OBSERVED PATHOLOGY IN A SKELETAL SERIES FROM A BURIAL CAVE IN NORTH CENTRAL NEVADA

S. Brooks and R.H. Brooks (U.S.A.)

Archaeologically recovered burials in the Nevada section of the Great Basin region of North America are relatively rare. The prehistoric Great Basin peoples of north central Nevada were hunters and gatherers and had no localized burial area. The site from which these burials were recovered is unusual in that the cave was never utilized as a habitation and all the associated artifacts relate to one period. The radiocarbon date obtained for the site is 3570 ± 40 B.P. The skeletal remains consist of numerous bone elements, including 22 mandibles, five crania and insufficient post-cranial materials to
represent 22 individuals. This implies selective burial practices, including secondary or token burials. Several of the post-cranial bones, a few of the mandibles, and one cranium demonstrate pathology not previously encountered in a Great Basin skeletal series. Evidence of periodontal disease and attrition on the occlusal surfaces of the dentition are common.

MICROSCOPY OF OSTEOAL TUMOURS IN PALEOPATHOLOGY
D.Campillo and V.J.Mari-Balcells (Spain)

In an attempt to establish an aetiological diagnosis, we have studied four tumours from antiquity using the optical microscope. Unfortunately, the absence of cellularity reduced the usefulness of microscopic examination in these cases, and macroscopic examination and radiographic examination leads us to believe that these tumours are examples of: 1) reticulosarcoma, or Ewing's tumour; 2) osteosarcoma; 3) hollow aneurysm with reactive osteoma; 4) osteochondroma. Nevertheless, the use of microscopy should not be rejected, as it may in some instances confirm or dismiss a diagnosis suggested by macroscopic and x-ray examination.

LA BIOLOGIA E LA PATOLOGIA DEGLI ETRUSCHI
V.Capecchi (Italy)

E'ormai praticamente certo che gli Etruschi non furono un popolo immigrato in Italia dall' Asia Minore, come, con Erodoto, hanno sostenuto e sostengono tuttora molti Studiosi, ma ebbero origini antichissime, discendenti Protomediterranei del Paleolitico, Mesolitico e Neolitico. L'Etruria ha avuto poche commistioni con altre popolazioni sopravvenute in Italia nel corso dei Secoli. Della loro Patologia, poco o nulla sappiamo in via diretta. Il materiale schelettrico giunto fino a noi è scarsissimo. Si conoscono tuttavia casi di spina bifida, di fratture, di artrosi, ecche non differ iscono da quelle che si osservano attualmente. Relativamente progredita era la Chirurgia, come mostrano diverse trapanazioni craniche eseguite con varie tecniche, e tutte passate a guarigione. Molte forme morbose sono state identificate attraverso figure e statuette: Così un caso di poliomielite, di frattura di gamba guarita con accorciamento, di focomelia.

GRAVE ARTROSI LOMBO-SACRALE IN ETRUSCO DEL VI SECOLO
V.Capecchi (Italy)

Viene mostrato un caso, ritrovato in una tomba etrusca del VI Secolo in Comune di Monteroni d'Arbia presso Siena, che mostra una falsa anchilosì fra V vertebra lombare e Sacro, e vistose ossificazioni a ponte
Fra quarta e quinta lombare. In ogni modo, la reazione alla causa nociva è evidentemente assai rilevante, anzi, potrebbe definire violenta, quale non si osserva più ai giorni nostri. Da notare, che secondo O. Abel, l'artrosi è la più antica malattia che si conosca, essendo età riscontrata perfino nei primi anfibi, gli stegosceliferi. Ma pochissimi casi sono conosciuti in cui la neoformazione di tessuto calcificato è stata così imponente.

FEMUR NECK FRACTURES OF PREHISTORIC AND HISTORIC TIMES
A. Czarnetzki (Germany)

Complications with healing of femur neck fractures are well known in modern times. Treatment is very difficult. The main reasons for these complications will be demonstrated. Also to be presented are different cases of healed and unhealed fractures of historic and prehistoric times. The kind of healing observed can give good information about the possibility of treating such fractures.

A NEW FILING SYSTEM FOR PALEOPATHOLOGY
T. Doro, R. Gerbore and E. Fulcheri (Italy)

A standard filing system for osteological material was experimentally adopted at the Department of Anthropological, Archeological and Historical Sciences at the University of Turin, and the Anthropology Section - Paleopathology Center of the Museum F. Eusebio of ALBA (CN). This system proved to be practical and to allow easy data collection for further investigation. It is mainly composed of two skeletal records. The first one shows the bone segments available and their conservation. The second record concerns the site and extension of all possible pathological lesions.

SOME PALEOPATHOLOGICAL DATA FROM A SAHARIAN HUMAN NEOLITHIC POPULATION
O. Dutour (France)

Bones from a hunting and fishing population were studied; they came from Malian Sahara (Hassi-el-Abiod region, ca 19° N, 4° W) and dated from about 7000 B.P., when this region was wet, and scattered with lakes. Twelve pathological observations were made on 10 skeletons among 20 under study, i.e. 4 fractures (2 of arms, 2 of legs), 1 skull with probably porotic hyperostosis, 4 cases of vertebral osteoarthritis, 3 cases of bone infection. Two fractures of the tibia indicated that therapeutic retention was most probably practiced and that tribal help was provided for the wounded. An abnormally thick skull vault suggested porotic hyperostosis and a possibility
of sickle-cell anemia. An infectious osteoarthritis of the wrist raises the question of the etiological microorganism: bacterial pyogens or Mycobacterium tuberculosis.

CASES OF LEPROSY FROM THE MAUSOLEUM OF EMIR KIBIR QURQUMAS IN OLD CAIRO

T. Dzierżykay-Rogalski (Poland)

The author presents several cases of leprosy occurring in an exclusive group of persons from the surroundings of the Ministry of War in the Mamelouk period, buried in the Mausoleum of Emir Kibir Qurqumas. The pathological changes observed on the bones diagnosed as leprosy were differentiated with other diseases leaving similar traces on bones.

RICERCHI SUI GRUPPI SANGUIGNI DEL SISTEMA ABH NELLA DENTINA DI ANTICHI ETRUSCHI ANTERIORI AL V SECOLO A.C.

S. Ferretti and A. Guidotti (Italy)

Sviluppando le ricerche di A. A. Tedeschi e Giapponesi, per utilizzare gli antigeni della polpa dentaria e della dentina, la cui resistenza agli agenti fisici è elevatissima, a scopo di identificazione di cadaveri altrimenti irriconoscibili; e sulla scorta delle esperienze di Kishi e Hummel, in 12 denti di Etruschi di età anteriore al V Secolo A.C. sono stati ricercati i principi del sistema ABH. I risultati sono stati: 2 casi gruppo A, 4 casi gruppo B, 4 casi gruppo AB, 2 casi gruppo 0 positivi all'agglutinazione con siero anti H. Ciò allontana notevolmente gli Etruschi da ogni popolazione Europea, avvicinandoli assai a quelle orientali, e sembra comprovare la loro origine non Indo-Europea. Infatti, anche se gli AB, così numerosi, possono essere interpretati come conferma della teoria di Kishi e Hummel, i quali pensano che la N-acetil-D-Galattosamina (principio A) si trasformi col tempo in D-Galattosio (principio B), la distribuzione che ne risulta è sempre lontanissima da quelle proprie dei popoli occidentali attuali.

THE MUMMIES OF THE ABBEY OF SAINT DOMENICO MAGGIORE IN NAPLES: A PRELIMINARY REPORT

G. Fornaciari (Italy)

A suspended passageway, approximately seven meters high, in the monumental Sacristy of the Abbey, holds 44 wooden coffins containing the bodies of 13 Aragon kings and princes, and other Neapolitan nobles who died in the second half of the XV and in the XVI centuries. The lower row is made up of smaller coffins, mostly of unknown people, the upper row of larger coffins.
They include the Aragon king Alfonso I (died 1458), Ferrante I (died 1494), Ferrante II (died 1496), Queen Giovanna IV (died 1518), and the Marquis of Pescara, Francesco Ferdinando d'Avalos (died 1525). After radiography and autopsy, histological studies will be performed on fragments of rehydrated tissue, metal analyses with atomic absorption spectroscopy, and also paleoserology. Preliminary results show: a large number of artificial mummies, a case of nose-orbital malignant neoplasia, a case of probable small pox, an example of dressing in the XVI century, a case of severe artificial wear of the anterior teeth, a case of severe periodontal disease, and frequent coxa valga in the males.

**COMPARISON BETWEEN DIFFERENT TECHNIQUES IN MUMMIFIED TISSUE REHYDRATION**

E. Fulcheri, E. Rabino Massa and C. Fenoglio (Italy)

Several satisfactory methods of rehydration and processing of mummified tissues have been described after Ruffer's original technique. Some of these methods have long been employed in our Institute on the Egyptian mummies of the Marro Collection in Turin. Recently, Herrman's technique with undiluted, unactivated human blood serum was tested on 80 dried heads, although the absence of adequate fixation caused some disadvantages, particularly in cases of long-term reconstitution. Pre-fixation of the specimens with formaldehyde vapor at 60°C for 3 hours, according to Tock and Pearse's treatment for freeze-drying material, yielded comparably better results.

**DIFFICULTIES IN SCORING SYPHILIS: THE LIMITS OF SYSTEMATIC DIACHRONIC PALEOPATHOLOGY**

A. Fuldauer, A. H. Bracht and W. R. K. Perizonius (Netherlands)

In preparing the study of skeletons found during the excavation of the 'St. Jobsgasthuis' in Utrecht (a hospital set up in 1504 for what were possibly the first syphilitic patients in Holland), it was discovered that for the most so-called 'syphilitic' bone lesions, this diagnosis, because it is not based on first class reference material, has to be doubted. As a result, it was decided not to diagnose but to score a number of clearly described, possibly with syphilis related, bone lesions. In this way valid diachronical comparisons can be made independent of uncertain diagnoses. Would it not be better, in general, to first classify, describe, and score all the different bone lesions, instead of eagerly building diagnostic castles in the air?

**LE TRAPANAZIONI CRANICHE IN VIVO DELLA SARDEGNA**

F. Germanà (Italy)
Per la loro numerosità gli esemplari cranici trapanati in vivo della Sardegna costituiscono circa il 50% di tutto il campionario preistorico italiano fino a ora noto. La situazione anatomopatologica delle cicatrici chirurgiche denota una esperta e meditata manualità, dovuta non tanto a improvvisazione, quanto a un ricco bagaglio nozionistico, attendibilmente maturato nell'area mediterranea occidentale e giunto nell'isola sulla scia delle correnti culturali di quei tempi. Gli scopi delle trapanazioni sembrano più terapeutici, che magico-religiosi.

Il dettaglio di costume in Sardegna a iniziare dall'Eneolitico trova la sua maggiore diffusione nell'Età del Bronzo.

**ENDEMIC GOITER IN ITALIAN RELIGIOUS FIGURATIVE ART**

A. Giampalmo and E. Fulcheri (Italy)

Religious figurative art in various Italian regions since the 13th century constitutes an indirect approach to the historical and geographic pathology of endemic goiter. Our findings suggest that endemic goiter was probably more common and extensively diffused over much of Italy during past centuries.

**A CASE OF ACROCEPHALY FROM THE MEDIEVAL BURIAL FIELD OF ESSLINGEN (SOUTHWESTERN GERMANY)**

W. Götz (Germany)

A case of acrocephalic skull-malformation with premature synostosis of the coronal and sagittal sutures from a Medieval burial field in Esslingen is presented. This deformity is rarely described in the paleopathological literature. The skull was examined morphometrically, radiologically, and endoscopically, and compared with similar cases (Hilmes, Germany and the Pitts Site, New Mexico). It shows gross morphological characteristics of an acrocephalus (brachycephaly, hypsicephaly, frontal steepness, etc.), striking findings in the nose-orbit region, but only slight alterations in the maxillary region. Findings and problems in etiology, pathology, and symptomatology of syndromes with acrocephaly are discussed.

**LA PATHOLOGIE DES SQUELETTES DE L'ABBAYE DE LA NOVALESA**

R. Grilletto (Italy)

Pendant les fouilles dans l'égise abbatial de la Novalesa à 60 km de Turin, nous avons découvert près de 600 squelettes, dont 280 sont complètes: 144 sont des hommes adultes, 76 des femmes adultes, 11 sont des jeunes, et les autres des adultes de sexe incertain. C'est très difficile de dater exactement ces squelettes, mais on peut les faire remonter au XI - XV
Fractures des membres et du bassin, arthrose des articulations, ostéites, périostites, etc. sont les cas pathologiques les plus fréquents. Plusieurs crânes enfin présentent un trou qui aurait pu être fait par un gros clou forgé enfoncé dans la calotte du crâne, comparable à certains 'crânes cloués' déjà connus.

FOURTEENTH CENTURY NATURALLY PRESERVED BRAINS

G.T. Haneveld (Netherlands)

Naturally preserved brain was thus far mainly (though rarely) found in Moorleichen (bodies preserved in peat bogs) and in permafrost remains. The excavation in Dordrecht (Netherlands) of 14th century skulls, containing remarkably well preserved brain, provided an opportunity for paleopathological investigation. Whereas NMR techniques proved unsuccessful, CT scan, histology, and chemical analysis revealed some details.

SCURVY AS A PALEOPATHOLOGICAL PROBLEM

P. Holck (Norway)

From the Middle Ages on, scurvy was probably the most common disease in Scandinavian countries. As vitamin C controls and intervenes in many functions in the body (amino acid metabolism, activity of the phosphatases, adrenal gland function, synthesis of collagen, permeability of the capillary veins, etc.), a deficiency in the supply will lead to a variety of pathological changes. In the Middle Ages and during the 16th and 17th centuries, the population of Scandinavia probably lived in a permanent prescorbutic condition, with a large number of periods with real and serious illness during their lifetime. Signs of scurvy can frequently be seen on skeletal finds from this period, and the diagnosis is most probable if various pathological traits, compatible with a failure of the ascorbic acid-dependent functions, can be established.

TANGENTIAL TRAUMATA OF THE CRANIAL SKULL VAULT, INITIATING TREPANATIONS

P. A. Janssens (Belgium)

Traumata of the cranial vault may imitate trepanations, depending on a) the kind of weapon, b) the inclination of the weapon on the surface of the cranial vault, and c) the shape of the place of impact. A) Arrows of crossbows will produce circular wounds; the entry opening will present a scaling the tabula interna. When the arrow pierced the entire skull, the tabula externa will show the scaling. Cutting weapons, above all axes, will produce traumata, imitating trepanations when b) the inclination is about 45° or less. In the first case we see a kind of protracted trepanation cicatrice when there was healing of the wound.
In the next stage, a more triangular piece will fly off. On a most tangential inclination angle, the cutting weapon will enter the osseous layers of the vault and leave them producing a lesion whose contour will depend on the shape of the bone: circular or sector formed, with or without perforation of the three different osseous layers.

DEUX PLAQUES PLEURALES CHEZ UN HOMME DU MOYEN AGE: ETUDE RADIOLOGIQUE, CRYSTALLOGRAPHIQUE ET MICROSCOPIQUE

C. Kramar (Switzerland)

Parmi les restes osseux de ce sujet masculin d'une soixantaine d'années (13 - 14e s.), dans le côté gauche de la cage thoracique furent trouvées deux formations pathologiques. Macroscopiquement, ce sont des plaques dures dont la surface irrégulière présente deux aspects: l'un uniforme et dense, et l'autre perforé de nombreux trous correspondant aux orifices de canaux vasculaires. La radiographie de ces pièces reflète ces différences de structure par une inégalité de l'absorption. Après l'examen macroscopique et radiologique, on a fait la microscopie optique (en lumière ordinaire et en lumière polarisée) et des micro-radiographies (technique de Baud et Morgenthaler), et plus tard la microscopie électronique. La poudre recueillie lors des prélevements des fragments a été utilisée pour l'étude de la substance minérale par diffraction des rayons x. Les diverses méthodes microscopiques nous permettront de déterminer la composition ultrastructurale de ces plaques, donc de préciser le diagnostic.

CASE HISTORIES OF EGYPTIAN MUMMIES UNWRAPPED FOR STUDY IN ENGLAND

F. F. Leek (England)

Ancient Egyptian mummies have been unwrapped and critically examined in England on three occasions during this century. Each provided the team of investigators with such a diversity of findings that, although conservation of human remains must always be the ultimate aim, the knowledge of age, sex, diseases, mummification processes, and also many aspects of daily life during the dynastic period is extended to such a degree that there is indisputable justification, at least in selected instances, for a complete examination of similar material.

MICROSCOPIC OBSERVATIONS ON SCURVY IN DUTCH WHALERS BURIED AT SPITSBERGEN

G. J. R. Maat (Netherlands)
In reference to the presentation and the related paper of the Fourth European Members Meeting of the P.P.A., a follow-up study was done on scurvy in Dutch whalers buried during the 17th and 18th centuries at Spitsbergen. The macro-scopical observations of that time were evaluated microscopically. The nature of black maculae on articular surfaces and around bone infractions, which were assumed to be the effect of hematomas, were investigated immunoenzymatically. A search was made for histologic changes, such as repair activities, associated to lesions due to this deficiency disease.

A POSSIBLE CASE OF GENETIC ANAEMIA IN MID-NINETEENTH CENTURY EAST ASIA

P.S. Macadam (England)

Porotic hyperostosis is a term coined by Angel in 1966 to describe characteristic lesions of the orbit and skull vault. These lesions can vary in size, severity, and distribution, but normally present as pitting of the compact bone associated with an increase in thickness of the adjacent diploic bone. Genetic anaemias, particularly sickle cell anaemia and thalassaemia, have been implicated as possible causes of porotic hyperostosis since 1929 (Moore). However, it is of interest that there is no well substantiated case of genetic anaemia in the anthropological literature. The present paper discusses the case of a mid-19th century skull from East Asia that fulfills many of the criteria suggesting the diagnosis of a genetic anaemia haemoglobin E/thalassaemia.

BONE CHANGES OF LEPROSY

K. Manchester (England)

The osseous changes associated with leprosy are due to the individual and inter-related effects of nerve involvement, trauma, and subsequent non-specific bacterial infection, and specific M. leprae invasion of bone. The primary lesions are of the peripheral skeleton and are neuropathic. The leprous involvement of sensory and motor nerves is followed by muscular paralysis with hand and foot deformity, and by post-traumatic infection of the hands and feet. By observing the osseous changes in osteoarchaeological specimens, and by correlating these with modern clinical and radiological features, it is possible to infer the progress and clinical effects in antiquity. The rhinomaxillary features of leprosy are present in the lepromatous form of the disease and are relatively late features. Likewise, the progress of these lesions can be determined in osteoarchaeological specimens. The paper correlates the clinical, radiological, and osteoarchaeological features of leprosy.

SCANNING ELECTRON MICROSCOPE INVESTIGATION IN POROTIC HYPEROSTOSIS

A. Marcsik, F. Kós and E. Kurucz (Hungary)
The authors investigated crania in the Department of Anthropology, Attila József University, Szeged, which showed porotic, cribrotic and trabecular types of porotic hyperostosis by scanning electron microscope. They confirmed their observations, obtained by earlier histological investigation, that the porotic hyperostosis is to be considered etiologically as a uniform clinical picture, and that even by scanning electron microscopical investigation, three characteristic forms of this pathological deformation can be separated by order of gravity: porotic, cribrotic, and trabecular.

LA PATOLOGIA DEGLI ETRUSCHI DAL PUNTO DI VISTA DELL'ARCHEOLOGO

E.Mazzeschi (Italy)

Si espongono brevemente alcune caratteristiche di vita del popolo Etrusco, in rapporto a situazioni ambientali e con riferimenti alle loro conoscenza di Medicina e di terapia, quali appaiono in seguito alla esperienza tratta dalle ricerche archeologiche.

UN CAS DE DYSFONCTION OCCLUSALE ET SES REPERCUSSIONS SUR L'ARTICULATION TEMPORO-MANDIBULAIRE

H.Muller (Switzerland)

Présentation d'un crâne féminin adulte trouvé dans une tombe de Kerma ancien au Soudan, présentant une usure dentaire exceptionnelle. Celle-ci fait l'objet d'études de plus en plus approfondissant sur le plan macroscopique qu'à l'aide de la microscopie à balayage et nous fournit quantité de renseignements tant sur le mode de vie que sur le régime alimentaire des populations anciennes. Le cas qui fait l'objet de notre description illustre ce que l'on peut tirer de l'usure dentaire, et les pathologies qui lui sont associées: abscèses et pertes dentaires, remaniement de l'articulation temporo-mandibulaire. À la lumière de nos connaissances actuelles des usures dentaires associées au bruxisme, ce qui pourrait être le cas de cet exemple, il sera tenté de broser un portrait 'paléopsychologique' de cette femme préhistorique.

RETROMOLAR FORAMEN OF THE HUMAN MANDIBLE

N.S.Ossenberg (Canada)

Analysis of retromolar foramen (RMF) in a large series of mandibles (N 2500) was undertaken to provide descriptive statistics for this variant. RMF was found to occur more commonly in native populations of North America than in other populations (Africa, Europe, India, northeast Asia). A wide range of frequencies among populations within the same ecosystem
and subsistence economy suggested that the trait is predominantly under genetic control. The ratio of bilateral to unilateral occurrences was shown to increase with population incidence, a pattern consistent with the theoretical model of an epigenetic (threshold 'quasi-continuous') variant. Male–female differences were not found. Age profiles were characterized by a marked peak in the adolescent cohort. Patterns of intertrait correlation varied from one population to another. With refinements in scoring criteria, RMF should be useful, along with other minor cranial variants, for ethnohistorical studies. The findings support those based on clinical research, underscoring the value of a routine injection into the retro-molar fossa to block pain fibres originating in the molar roots and exiting the mandible through RMF.

MACROSCOPIC AND RADIOLOGICAL ASPECTS OF TUMORS OF THE SKULL IN ANCIENT EGYPTIANS

W.M.Pahl, E.Asaad, N.Khattar and M.El-Meligny (Germany and Egypt)

The present investigations can be considered as a contribution to the differential diagnosis of pathologically caused lesions of the skull in ancient Egyptians. Two combined osteolytic – osteosclerotic and two purely osteolytic processes have been examined macroscopically and radiologically. An attempt has been made to produce differential diagnoses of the pathological changes as far as this is possible in archeologic material without cell pathology and the clinical record. The cases associated with new bone formation are most likely concerned with a meningioma with eventual sarcomatous tendency (case 2), as well as most probably a cavernous haemangioma/oskoangioma (case 1), although a parasagittal meningioma should not be excluded in differential diagnosis. In one case, the cause of the osteolysis could have been metastases of an unknown primary malignant tumor (case 3), with the differential diagnosis of a plasmocytoma; in the other case, possibly a haemangioma (differential diagnosis: eosinophilic granuloma, solitary plasmocytoma and osteolytic metastasis).

PALEOPATHOLOGICAL CHANGES IN SIXTEENTH CENTURY GRAVES IN THE EMIR KIBIR QURQUMAS MAUSOLEUM, OLD CAIRO

E.Prominska (Poland)

Paleopathological changes of bones discovered in the Emir Kibir Qurqumas Mausoleum are presented. The group examined consisted of about 70 persons: the Emir himself, his relatives, harem and chosen persons from his entourage. In this particular group, living most probably in good conditions, many pathological changes were observed, e.g. leprosy, syphilis, Paget's disease, and so on, as well as numerous traces of trauma. These are the same diseases as those occurring at this time among the common people of Cairo.
OCCURRENCE OF SPINA BIFIDA OCCULTA IN YOUNG EARLY EGYPTIAN POPULATIONS

E. Rabino Massa, E. Fulcheri and E. Cerutti (Italy)

A series of 107 skeletons of young Egyptians from the G. Marro Collection, Turin, Italy, was examined for spina bifida occulta. The subjects were 21 years of age or less. Spina bifida occulta was found in 9 instances (8.1%). Seven skeletons showed a defect of the last vertebra of the sacrum; an incomplete closure of the neural arches of the sacrum was present in two. Sacralization of the fifth lumbar vertebra was never found. Our data on the incidence of spina bifida occulta and the current literature are discussed.

PREHISTORIC CREMATIONS IN SPAIN

J. M. Reverte (Spain)

Spain is an exceptional country in which to study cremations. Iberians, Tartessians, Celts, and Celtiberians alike, all used to burn their dead, and later the Phoenicians and Romans did likewise. We have carried out a comparative study in order to determine age, sex, and bone pathology at the time of death, together with the cremation technique employed, the form of burial of the burnt remains, the position of the body when incinerated, the technique used in gathering up the remains, the frequency with which the various parts of the anatomy are found, their resistance to fire, the mechanics (process) of fracturing of each bone in relation to its architectonic structures, and the possible temperature to which they were subjected. One interesting find showed that the burnt bone remains discovered inside the statue known as La Dama de Baza are not those of a warrior as had been theorized, but are of a slender young woman.

LEPROSY AND THE DISTRIBUTION OF LEPROSY HOSPITALS FROM THE ELEVENTH TO THE SIXTEENTH CENTURIES IN BRITAIN

C. A. Roberts (England)

This reports some of the results obtained from a study of tuberculosis and leprosy in antiquity. The foundations and development of leprosy hospitals are considered with reference to the prevalence of leprosy from the Roman to the late Medieval periods. The relationship between population and hospital distributions is studied, revealing an unexpected result. Finally, the constraints on using documentary evidence for this type of study are considered, with an alternative suggestion.
THE PALEOPATHOLOGY OF GOUT

J.M. Rogers (England)

Gout has been described and diagnosed in antiquity and throughout historical times, but there are only two cases quoted in the paleopathological literature. One of these was an Egyptian mummy described by Elliott Smith and Dawson (1924), the other a Romano-British skeleton described by Calvin Wells (1973). Two further possible examples of gout were also reported by Dr Wells. These latter three cases are re-examined and two further examples from British skeletal remains are described. Some authors consider the paucity of examples of gout in the literature to be due to the fact that gout is indistinguishable from other arthropathies in dry bone. In the light of this point of view, differential diagnoses will be described, and diagnostic criteria for gout in skeletal material considered.

THE DISEASES IN A SERIES OF CHILDREN'S SKELETONS FROM IKIZ TEPE

M. Schultz (Germany)

Ikiz Tepe is a prehistoric settlement in northern Turkey situated on the coast of the Black Sea near the city of Samsun. The cemetery of this settlement dates back to the Early Bronze Age II. As the skeletal material is extremely well preserved, skulls and postcranial skeletons of even fetal individuals could be examined. The skeletons of 96 children of the age groups infant I and infant II were available for this investigation. The material was examined by macroscopical, radiological, histological, and scanning electron microscopical techniques. There is evidence of malnutrition, with some deficiency diseases rather frequent. Dental caries is very rare, but parodontopathy frequent. Finds include stomatitis, chronic inflammation of the sinus maxillaris (sinusitis), alterations due to inflammation of the meninges (meningitis), and hydrocephalus.

POSSIBLE CORRELATION BETWEEN OS ACROMIALE AND OCCUPATION IN THE BURIALS FROM THE MARY ROSE

A. Stirland (England)

Most of the scapulae from the Mary Rose have now been examined. Out of a total of 162 individual bones, 19 exhibit the condition of non-fusion of the acromial process known as 'os acromiale.' From 52 matched pairs, 7 have this anomaly, 4 bilaterally and 3 unilaterally. The aetiology of this anomaly is unclear, although it has been postulated that in some living patients it is related to rotator cuff tear. It is suggested that in this group from the Mary Rose, the anomaly may be associated with long-term stresses involved in the protracted and continual use of a longbow. Therefore, it can possibly be used as one indicator of the archers from this ship.
PONTICULUS ATLANTIS POSTERIOR ET LATERALIS IN OLD SLAVONIC SKELETAL MATERIAL

M. Stloukal and L. Vyhnánek (Czechoslovakia)

The incidence of Ponticulus atlantis posterior et lateralis in old skeletal material was studied only in vertebrae with both halves intact, with regard to possible unilateral occurrence. No statistically significant differences in the occurrence of the Ponticulus atlantis posterior between men and women, between right and left side of the vertebra, and between different age groups, were established. A significant difference is between bilateral and unilateral occurrence of the Ponticulus atlantis posterior and in the occurrence of this feature in different populations. The frequency varies from 6.1% to over 20%, and it seems to rise from the 7th century to the later periods. Ponticulus atlantis lateralis was found in only a few cases, and always along with Ponticulus atlantis posterior.

PALEOPATHOLOGY OF DENTITION OF THE ANCIENT EGYPTIANS FROM ABUSIR (FIRST MILLENNIUM B.C.)

E. Strouhal (Czechoslovakia)

Inside and around the ruined mastaba of Pthashepses at Abusir (5th dynasty), a secondary cemetery was inserted during the first millennium B.C. At least 296 individuals were buried there, about a half immatures and a half adults, 55.3% males and 44.7% females. More than two thirds of the alveoli and more than half of the teeth have been preserved. The mean dental attrition according to the eight-grade scheme of Brothwell (1963) was substantial (3.8 in average): 2.5% carious teeth, 2.1% roots remaining as the result of carious destruction, 14.1% intravital losses (resulting from attrition, caries and paradontosis) and 4.4% periapical abscesses (due to the same causes). Dental calculus was observed in 59.3%, partial or total atrophy of one or both jaws in 29.1%. Minor findings of variation of tooth number, position, and morphology reflect nutritional and cultural habits of a poor agricultural society.

PALEOMORFOLOGIA E PALEOPATOLOGIA DEL PIEDE EGIZIO MUMMIFICATO

V. Valenti (Italy)

Lo studio della paleomorfologia e della paleopatologia del piede potrebbe schiudere orizzonti conoscitivi ben più vasti del ristretto segmento in esame. Gli unici piedi intatti a nostra disposizione sono quelli mummificati degli antichi Egizi. Il piede egizio è morfologicamente diverso dal nostro non sappiamo se per ragioni cronologiche, ambientali o etniche. Di fatto il piede egizio mostra morfologia e funzionalità migliori di quello attuale. Si può affermare senza imprudenze che con ogni probabilità gli antichi Egizi non soffrivano di metatarsalgia né di alluce valgo. La rimanente patologia
è presente in quantità minore ed in età più precoce ma ripete la patologia dei nostri giorni: alluce rigido, piede piatto, piede cavo, dita a martello, cisti ossee, osteocondrosi, poliomielite etc. I piedi dei Re o di personaggi altolocati sono colpiti dalla patologia in eguale misura dei piedi di uomini comuni. L'anticipo della patologia potrebbe essere ricercato, come sostiene Harris, nella più rapida evoluzione somatica degli Egizi antichi rispetto all'Uomo attuale.

DISH AT MERTON PRIORY

H.A. Waldron (England)

Merton Priory, one of the earliest Austin foundations in England, was established in 1114 and dissolved and demolished in 1540. The site was greatly disturbed in the following years, but yielded 36 more or less complete burials, together with a large amount of disarticulated bone. Of the complete burials, three (8.1%) had spinal DISH (Forestiere's disease) together with the extra-spinal manifestations of the disease, principally affecting tendon insertions into the long bones; four other skeletons had extra-spinal changes but no spinal disease. One further skeleton had extra-spinal changes, but in this case the spinal lesion was more suggestive of a sero-negative arthropathy than of DISH. It seems important, therefore, to determine the extent to which extra-spinal hyperostosis is typical of DISH and how far it may overlap with other arthropathies.

THE CHANGING PATTERN OF INJURIES AND FRACTURES IN A MEDIEVAL SERBIAN POPULATION

S. Živanović (England)

Systematic archaeological excavations in Serbia, Yugoslavia, during the last 20 years have revealed a large number of human skeletons at different sites, from the earliest to the latest medieval periods. Palaeopathological study of these skeletons has identified a number of injured or fractured bones on each site. The number of violent injuries and fractures due to fights is much larger during the earlier periods, or the migration to the Balkan peninsula. The number of accidental injuries and fractures does not change much from early to late periods, the time span being approximately 9 centuries. Injuries and fractures are more common in males than in females. Fractures due to diminished resistance of bones because of disease or a disorder are more common in the skeletons from the later periods.
SPONDYLOLYSIS IN AN ENGLISH MEDIEVAL POPULATION

D. A. Birkett (England)

An examination for the condition of spondylosis or separate neural arch was made in a population of 148 individuals from a medieval (13th - 15th century) cemetery in northern England.

Spondylosis was found in 7 lumbar spines of 74 well-preserved examples in the cemetery. The overall incidence was 10% among the adult skeletons. Six cases had involvement of L5 and one of L4 and 5. One case had unilateral separation. Incidence in male and female was similar, and there was an equal occurrence rate in middle-aged and old people.

Evidence for spondylolisthesis (as suggested by osteophyte formation and sloping of the anterior part of the upper surface of the vertebra below the affected one) was seen in 4 of 6 examples of complete spondylolysis. The occurrence rate was similar to that reported by others in West European populations.

THE MOST COMMON DISEASES IN ANCIENT POLISH CEMETERIES

J. Gładkowska-Rzeczycka (Poland)

Pathological changes from four cemeteries from the Middle Ages are presented. There were congenital development disorders, systemic changes, inflammatory changes, degenerative and deformative changes, tumors, and traumas. The most common lesions are nonspecific inflammatory changes of the mastification organ. Degenerative changes occupy second place. Congenital disorders and variations took third place, but only in Czarna Wielka and anemias in Doktorce, both from the northeast region of Poland. The reasons for this situation are discussed.

INTESTINAL PARASITE OVA FROM ARCHAEOLOGICAL DEPOSITS: EVIDENCE OF WIDESPREAD FAECAL CONTAMINATION IN VIKING AGE YORK

A. K. G. Jones (England)

Preliminary results from investigations of soil samples dated to the 9th - 12th centuries A.D. from excavations at 16-22 Coppergate, York, England have shown that the eggs of two kinds of human intestinal parasites are extremely common. Eggs of Trichuris trichiura were most common. The other species present was Ascaris lumbricoides. Mineralized human excrement contained between 600 and 10,000 ova per gram (opg), and some latrine or cess pit samples contained over 60,000 opg.
Layers from within and around a series of oak-built (Quercus) sunken structures (ca 970 - 1060 A.D.) gave mean egg concentrations of approximately 500 opg, with occasional high concentrations suggesting that some indiscriminate defecation occurred. By contrast, similar deposits from a series of earlier (ca 910 - 970/80 A.D.) hazel-built (Coryllus) wicker structures gave lower concentrations. It is suggested that the egg counts reflect increasingly insanitary living conditions as the settlement developed.

ENDOSCOPY OF THE MANCHESTER MUMMIES

E. Tapp (England)

Although several diseases have been discovered by the histological examination of mummified tissue obtained by conventional means, the material available is clearly limited, and consequently the use of endoscopy in Egyptian mummies has been explored. Endoscopes have been introduced through holes in the chest wall, in some cases with x-ray control. Biopsies of the lung taken via the endoscope from one mummy showed sand pneumoconiosis, and that from another contained part of the wall of a hydatid cyst.

Mummy heads have also been studied, the endoscope being introduced through the nose, via the eye socket, or in isolated heads by the vertebral canal. In one case, a Burr hole was used. Biopsies of the meninges and brain have been examined, and the method has proved useful in the investigation of radiological fluid levels, enabling one to distinguish between those caused by resin and those resulting from liquefaction of the brain. Another example of hydatid disease in ancient Egypt was discovered in the biopsies from the brain of one mummy.