



122. Ancient Preserved Brains

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in a couple of months and submitted an admirable and exhaustive report on the mistakes that had been made in the past and the measures needed for the future.

He was made a C.I.E. in 1941, and in 1942 was awarded the Rivers Memorial Medal of the Royal Anthropological Institute for fieldwork among the Nagas of Assam. In 1943 he was appointed Adviser to the Governor of Assam for Tribal Areas and States, a post which not only made his experience of the administration of hill tribes and their problems available in the many and varied hill areas of Assam, but gave him an opportunity of learning much about tribes with which he would otherwise have never come into contact. It is to this opportunity that we owe his second Presidential Address on 'The Mishmis of the Lohit Valley.' In 1947 he was made C.S.I. and retired from India, and in 1948 he was appointed Reader in the School of Oriental and African Studies of the University of London, a post from which he retired in 1955. He had been elected to the Council of the R.A.I.—he had, of course, been a member of the Institute for many years—in 1948 and he held the office of President from 1951 to 1953. Among his other

activities at the S.O.A.S. was the compilation of a bibliography of ethnographical matter relating to Assam, which has never been separately published but has proved very useful to other bibliographers. After his retirement from London to his home at Sydling St. Nicholas near Dorchester he interested himself in local affairs, and in his garden, and continued, as he had been in Assam, a keen fisherman. He married in 1930 Pamela Moira, daughter of J. Foster Vesey-FitzGerald, who with two daughters survives him. He gave important collections to the Pitt Rivers Museum of the University of Oxford.

Mills made an admirable colleague in administration. Apart from his practical and intellectual ability, his never failing sense of humour, his wit and his good temper in trying circumstances made him an invaluable companion, particularly in camp. When he was my subdivisional officer at Mokokchung his periodic visits to my headquarters at Kohima were events to be looked forward to, and he was beloved by his subordinates no less than by his colleagues, and equally so by many friends of all stations in Assam. The world is poorer by his loss.

J. H. HUTTON

SHORTER NOTES

Ancient Preserved Brains. By Dr. K. P. Oakley, F.B.A., Sub-Department of Anthropology, British Museum (Natural History). With a text figure

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Human skeletal remains were found in September, 1959, during excavations in connexion with the Sewerage Works in Hampton Road, half a mile north-west of Droitwich, Worcestershire, and these were sent to the Sub-Department of Anthropology, British Museum (Natural History), for investigation. According to a report supplied by Mr. John Williams, Chief Constable of Worcestershire, the bones had been found at a depth of 10 feet (probably in part made ground) and had been contained in a wooden coffin, which crumbled when an attempt was made to lift it. The finds were examined on the spot by Mr. D. R. Shearer, Assistant Curator of the Worcester City Museum, who formed the opinion that the burial was Romano-British. All the available evidence supports that conclusion. The excavation also yielded many potsherds, and a selection of these were examined in London by Mr. G. C. Dunning of the Ancient Monuments Inspectorate, Ministry of Works, who identified them as pieces of Romano-British domestic pottery dating from the second century A.D. The site of the discovery is close to a Roman fort.

In the course of cleaning the skeletal remains in readiness for detailed examination, Miss Rosemary Powers, Assistant Experimental Officer in this Sub-Department, noticed that there were fragments within the cranium which had all the appearance of being shrunken pieces of brain (fig. 1). Closer examination confirmed this identification. Preliminary chemical tests by Mr. A. E. Rixon in the Palaeontological Laboratory showed that the brain tissue had been replaced by a wax. The matrix, which contained a high proportion of clay, was tested for salt, but none could be detected. As the preservation of soft tissues is most unexpected in Romano-British material, it seems worth while to put this find on record, particularly as such findings may be of both forensic and anthropological interest.

A fragment of the brain was submitted to Professor H. Spatz, retired director of the Max-Planck Institut für Hirnforschung at Giessen, who has examined a number of bog burials in Germany, and is especially interested in the preservation of brains. He has contributed the following comments on the Droitwich find:

The waxy material in which the Roman brain from Droitwich is preserved appears to be adipocere. Personally I have examined brains

from bodies preserved in peat bogs, but none of these shows preservation in adipocere. However, the formation of adipocere has been described by the following authors:

W. Müller, *Postmortale Dekomposition und Fettwachsbildung*, Zurich, 1913. This is an extensive illustrated monograph on the results of the examination of 120 *Fettwachsleichen* (adipocere bodies) exhumed from a cemetery in the glacial clay of the end moraine of the old Glinth glacier in Switzerland. The damp, fine-grained clay which shuts off the air and the excess of water furnished the optimal conditions for the formation of adipocere. The nature of the process involved in the formation of this grave wax has not yet been fully clarified.

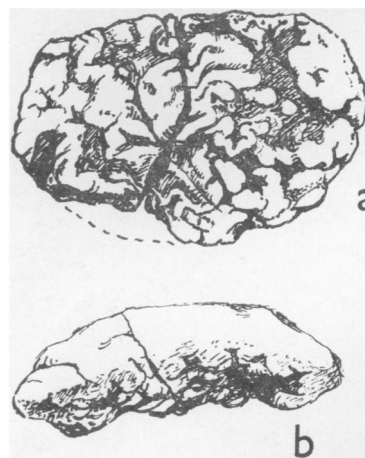


FIG. 1. FRAGMENT OF A CEREBRAL HEMISPHERE PRESERVED IN 'GRAVE-WAX'

Found in a human cranium, probably that of a woman aged 45-55, from a Romano-British site, Droitwich. B.M.(N.H.), 1960. 18.3.2. a. Ventral surface (concave). b. Lateral view. Natural size. Drawings by R. Powers

P. Ernst, 'Verschiedene Formen der Nekrose,' *Handbuch der allgemeinen Pathologie*, von Krehl & Marchand, Vol. III, Part 2 (1921), pp. 200-2.

M. Thouret, 'Rapport sur les exhumations du cimetière et de l'église des Saint-Innocents,' *Histoire de la Société Royale de Médecine*, Paris, 1786.

In the second form of preservation of brain, which I have encountered in bog burials, the tissue is extremely rich in cholestrine. The main factor in this form of preservation is an absolutely sterile environment. See H. Spatz, E. Klenk and P. B. Diezel, 'Der Gehirnstrest der Moorleiche von Windeby (Schleswig),' *Præhistorische Zeitschrift*, Vol. XXXVI (1957), 1958, pp. 129-56. The age of the specimens investigated at Windeby was estimated to be 1,900 years.

A third form of preservation of brains is through mummification by drying (involving shrinkage). Here belong the findings of Elliot Smith based on his excavations in Upper Egypt (where some of the material dated from prehistoric times). See his paper 'On the Natural Preservation of the Brain in the Ancient Egyptians,' *J. Anat. and Physiol.*, Vol. XXXVI (1902), pp. 375-80, and his book *The Papyrus Ebers*, London, 1930. Elliot Smith published photographs of a remarkably well preserved brain of an Egyptian, 'who died more than forty-five centuries ago.' Except for these references I know of no recent literature on the subject.

Thus it appears that there are various conditions under which brains may be preserved (provided that there is no putrefaction). Anthropologists ought to be more conscious of the importance of such findings and pay more attention to remains of the brain in excavated material. If the skull is not opened, an X-ray photograph will probably show whether a brain, or the remains of a brain, are preserved within, at least in the case of bog burials.

Some of the histochemical aspects of the preservation of human tissues under varying conditions are at present being studied in the Serological Laboratory here by Mrs. Madeleine Smith.

Ancient Preserved Brains: A Further Note. By Miss Rosemary Powers, Sub-Department of Anthropology, British Museum (Natural History)

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Following Professor Spatz's identification of the fragments of brain in the Droitwich cranium as adipocere, I came across the following entry in J. Barnard Davis, *Thesaurus Craniorum*, 1867, p. 4, referring to remains found in a bog in Cumberland, possibly dating from the Bronze or Iron Age. The specimen in question is listed as 'Ancient Briton,' said to be adult, probably male, and received from Mr. Robert Ferguson of Carlisle.

'10. 680—Fragmentary remains of [a man] and of his skin dress. Small portions of skull; piece of brain, converted into adipocere; five cervical vertebrae; left humerus, clavicle and first rib; right scapula and half of lower jaw; three teeth; locks of hair, which is black, &c. Portions of his dress, made from the skins of Otters, with the hair on, sewn, very neatly and regularly, with sinews. Found in Scaleby Moss, Cumberland (region of BRIGANTES), May 28, 1843, at a depth of 14 feet, and 3 feet from the bottom. The bones have been deprived of their salts by the acids of the bog, and transformed into leather by its tannin. Even the teeth have become flexible. Heather is said to contain as much tannin, weight for weight, as oak

bark. WILDE's *Cat. Antiq. Mus. R. Irish Acad.*, 1861, 276. See No. 1025 (Irish, *infra*).'

This specimen was formerly preserved in the Royal College of Surgeons, but I am informed by the Conservator that it was probably in the Curio Room, and did not survive the destruction which occurred there in the Second World War. It is not amongst the material transferred to the British Museum (Natural History) after the war.

The ABO System of Blood Groups in Khalkha Mongols.

By Emanuel Vlček, M.D., *Archæological Institute, Czechoslovak Academy of Sciences, Prague. With a table*

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In 1958 the Czechoslovak Academy of Sciences sent an archæological expedition to Mongolia. The expedition, in cooperation with the Scientific Committee of Mongolia and under the common heading of the Czechoslovak-Mongolian Archæological Expedition, 1958, carried out a systematic study of an Old Turkish memorial on the River Orkhon, about 250 miles west of the city of Ulanbaator. On this occasion, as physician of the expedition and anthropologist, I also carried out some preliminary studies on the physical anthropology of the main population of Mongolia, the Khalkha, on whose territory the expedition was working.

In addition to other investigations, a preliminary examination of the blood groups of Khalkha Mongols was made in Khudjirta (310 miles south-west of Ulanbaator). Ninety-two individuals in all were examined; for technical reasons, only the ABO system was studied. The examination was carried out by the glass slide method, using liquid (not dried) sera.

TABLE I. BLOOD GROUPS OF KHALKHA MONGOLS

Groups Khalkha	O		A		B		AB		Total	
	n	%	n	%	n	%	n	%	n	%
♂	20	48	10	24	9	21	3	7	42	100
♀	21	42	10	20	18	36	1	2	50	100
♂ + ♀	41	45	20	22	27	28.5	4	4.5	92	100

In this set it appeared that, as compared for example with the percentages of the individual blood groups in Czechoslovakia, there was a slight increase in group O and an increase of about one-third in the percentage with group B, whereas the values established for group A were only half those found in Czechoslovakia.

This investigation could be performed only on a small sample and the data obtained must therefore be considered as purely preliminary.

CORRESPONDENCE

Structural Theory and Descent Group Theory in South India.

Cf. MAN, 1959, 323

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STR.—It may appear ungracious to seem to cavil at a review of one's own work which is couched in such generally laudatory terms (*Une Sous-Caste de l'Inde du Sud*, reviewed by Dr. E. Kathleen Gough in MAN, 1959, 323). But I am afraid that the author's concern to be kind, together with another factor which I shall presently mention, has tended to obscure her conclusions. Since this is a matter of some general interest among social anthropologists at the moment I may perhaps be allowed a little retrospect on the accusation that I have 'introduced some confusions into the analysis of Dravidian kinship.'

My own point of departure was that the mother's brother in that terminological system is essentially the father's affine (MAN, 1953,

54). The point did not go unnoticed: the late Professor Radcliffe-Brown took exception as some, apparently, still like to recall (MAN, 1953, 169; cf. J. Goody, *J. R. Anthropol. Inst.*, Vol. LXXXIX, 1959, p. 65). It was consequently interesting to see that some three years later my present reviewer, without any reference to the controversy, effectively granted the argument. She then wrote, among other things, that 'the mother's brother . . . is, after all, wife's brother to the father' (*Amer. Anthropol.* Vol. LVIII, 1956, p. 843). This admission was all the more gratifying in that it was based upon the field experience of a scholar who could not be supposed to have any bias in favour of the position. There was certainly much reluctance in her presentation, and the implications of her perception were not as fully drawn as one would have liked. However, the point was conceded and it now seems disconcerting to find that I am said to