late Professor Bowditch at Harvard, this idea has finally developed in the hands of the latter's successor into the work before us. It has the particular merit of making available everywhere the results of twenty years of experience in the teaching of physiology at the Harvard Medical School.

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PLEISTOCENE MAN FROM IPSWICH (ENGLAND)

So much has been said in the public press concerning a human skeleton of reputed great antiquity recently found near Ipswich, England, that a request from the editor of SCIENCE alone sufficed to cause me to alter my original decision not to write anything on the subject until after I had seen the skeleton as well as the locality from which it came. On receipt of communications from Mr. J. Reid Moir, who found the remains and from Professor Keith, who is making a detailed study of them, it is possible for me to comply with the request without further delay.

The main facts are these. On October 6, 1911, Mr. J. Reid Moir, of Ipswich, was notified by Messrs. Bolton and Laughlin, local brickmakers, that one of their workmen, while removing surface clay to reach the underlying glacial gravel, had encountered human bones. Mr. Moir proceeded at once to the pit and found that a portion of a human skull still attached to a complete encephalic cast of boulder clay had been recovered. Recognizing the importance of the find, Mr. Moir removed the remainder of the skeleton in the presence of three gentlemen, Messrs. Woolnough (curator of the local museum), Canton, and Snell. In order to preserve the extremely fragile bones, the containing beds were removed with them. After this had been done, three geologists, Dr. J. E. Marr, F.R.S., Mr. W. Whitaker, F.R.S., and Mr. George Slater, F.G.S., were called to Ipswich to examine the section.

A sheet of hard chalky boulder clay of varying thickness is spread over East Anglia, overlying stratified mid-glacial sands. Between these deposits and at a depth of only four and one half feet the skeleton was found. Was it interstratified? This question will probably never be answered to the satisfaction of all. According to Mr. Moir, a "most careful examination of the section before the disinterment took place showed clearly that no signs of any previous digging were visible, the clay above the skeleton appearing to be in every way the same as that which extended for some distance on each side of it." The presence of a calcareous band immediately underneath the skeleton was noted as well as the fact that it "extended more or less continuously on either side of the spot where the remains were found"; and it is pointed out by Mr. Moir that if a grave had been dug through the boulder clay, rain water percolating through the loose grave filling would have dissolved away the calcareous deposit. One of the best bits of evidence is that the skeleton was partly embedded in glacial sand and partly in boulder clay; "this sand showed clearly lines of stratification and was conformable with that underlying it."

On the other hand Mr. George Slater, one of the three geologists called to view the place, but not until after the bones had been removed to London, looks upon the site as highly unsatisfactory. Considering the loss by infiltration he would not expect to find distinct signs of a grave after a lapse of some thousands of years. The position on the side of a valley points to the possibility of hill wash or re-deposited boulder clay.

It was a wise precaution from every point of view to remove the matrix with the skeleton. This was done in blocks which were forwarded to Professor Arthur Keith at the Museum of the Royal College of Surgeons, London. Here each block was impregnated with a solution of gelatine, after which the bones were exposed by piecemeal removal of the overlying boulder clay, but were still left in situ on the underlying glacial sands. According to Professor Keith the whole skeleton was represented, its various parts being in

their proper position one to the other. It rested on its right side with the head bent forward, so as almost to reach the knees. The right arm was flexed beneath the body, the right hand resting under the right leg. The left arm was even more acutely flexed, with the elbow gripped between the knees and the left hand turned against the left shoulder. That the position of the Ipswich skeleton resembled somewhat the contracted posture so common to neolithic burials was recognized by Professor Keith, who believes, however, that this position does not necessarily mean burial; in other words, that it could have been assumed by the body at death without the intervention of intentional forces.

The right side of the skeleton in contact with the glacial sands was much better preserved than the left. The latter being embedded in the boulder clay, was most subjected to the destructive effects of roots as well as the action of the clay itself. The roots even penetrated the glacial sands and their effects on the skull and pelvis were marked. The corroding effects of the boulder clay (sandy, chalky loam) played havoc with the soft spongy portions of the skeleton, which are now represented by dense clay with here and there fragments of bone. The only complete bones recovered were those of the right hand.

The skeleton is that of a man about five feet ten inches in height and forty to fifty years of age. In addition to the complete brain cast (of boulder clay) there remain a "fragment of the frontal bone sufficient to show the characters of the forehead, parts of both temporal bones, with the joints of the mandible, and fragments of the parietal and occipital bones."[1] Nine of the teeth were recovered; these differ in no way from the teeth of neolithic man. Judging from the skull fragments and the brain cast, Keith concludes that the head did not differ essentially from that of modern Europeans except that the maximum width of the skull is situated rather far back, recalling in this respect alone the Neanderthal race. With the exception of the lower leg bones (tibia and fibula) and the upper arm bone or humerus, the limb bones are of the modern European type. The tibia lacks the sharp anterior crest or shin of modern man, and in this suggests the Neanderthal type, but not in respect to size and general shape.

If the skeleton does not represent a burial and if the chalky sandy loam at this point is a part of the original mantel of boulder clay, then the man of Ipswich is the earliest yet found with the exception of *Homo heidelbergensis* (*Pithecanthropus* not being considered as *Homo*). It would correspond to the latest eolithic horizon, the so-called Mesvinian, and would thus be somewhat older than the man of Galley Hill, provided the latter is properly dated. But as I pointed out in a recent article[2] there is room for doubt as to the age of the Galley Hill skeleton. From the foregoing account it would seem that the age of the Ipswich skeleton is also still an open question. The importance of having expert witnesses present at the disinterment in discoveries of this class was perhaps never better exemplified than at Galley Hill and Ipswich. Their absence will, it is feared, always leave the shadow of a doubt as to the age of the skeletons in question; and doubt is a serious handicap in matters of such scientific import. If both these specimens are correctly dated, then there lived as contemporaries in Europe for a long space of time two somatologically distinct races—a primitive type represented by the Mauer mandible, Neandertal, Spy, Chapelle-aux-Saints, La Quina, etc.; and a modern type represented by Ipswich, Galley Hill, and possibly Bury St. Edmunds. This is by no means impossible, in fact might have been the case. Either Ipswich or Galley Hill would alone be sufficient to prove it so, if all doubt as to age were removed. Until the full reports of Professor Keith, Mr. Moir, and the three geologists have been published, final

[1] From the report of an "inquest" in Ipswich February 21, which according to Mr. Moir gives "a very good account of the human remains" he had found.

[2] "Somatology and Man's Antiquity," *Records of the Past*, X., 329, November–December, 1911.

judgment on the Ipswich case must of course be suspended. If the modern type of man did actually live in Mindel-Riss interglacial times, a Pliocene chipper of flint would certainly not look out of place.

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THIRD LIST OF GENERIC NAMES FOR THE "OFFICIAL LIST OF ZOOLOGICAL NAMES"

9.[1] The following generic names of animals reported as parasites of man have been submitted to the International Commission on Zoological Nomenclature, by the Helminthological Society of Washington, for *inclusion* in the "Official List of Zoological Names":

CESTODA:

Davainea R. Blanchard & Railliet, in R. Bl., 1891*t*, 428–440, type *proglottina* (in chickens; France).

Diplogonoporus Lœnnberg, 1892*a*, 4–16, type *balœnopterœ* (in *Balœnoptera borealis;* Finmarken).

Dipylidium Leuckart, 1863*a*, 400, type *caninum* (in dogs; Europe).

Echinococcus Rudolphi, 1801*a*, 52–53, 55, type *granulosus* (in sheep; Europe).

Tœnia Linnæus, 1758*a*, 819–820, type *solium* (in *Homo;* Europe).

NEMATODA:

Ancylostoma[2] [Dubini, 1843*a*, 5–13] emendation Creplin, 1845*a*, 325, type *duodenale* (in *Homo;* Italy).

Ascaris Linnæus, 1758*a*, 644, 648, type *lumbricoides* (in *Homo;* Europe).

Dracunculus "Kniphof, 1759, 12" [not verified]; Gallandat, 1773*a*, 103–116, type *medinensis* (in *Homo*).

Gnathostoma Owen, 1836*f*, 123–126, type *spinigerum* (in *Felis tigris;* London).

Necator Stiles, 1903*y*, 312, type *americanus* (in *Homo;* U. S. A.).

Strongyloides Grassi, 1879*f*, 497, type *intestinalis* = *stercoralis* (in *Homo*).

Trichostrongylus Looss, 1905*o*, 413–417, type *retortæformis* (in *Lepus timidus;* Europe).

GORDIACEA:

Gordius Linnæus, 1758*a*, 644, 647, type *aquaticus* (free; Europe).

Paragordius Camerano, 1897*g*, 368, 399–402, type *varius* (free; U. S. A.).

ACANTHOCEPHALA:

Gigantorhynchus Hamann, 1892*d*, 196, type *echinodiscus* (in *Myrmecophaga jubata, M. bivittata;* Brazil).

10. The undersigned secretary presents the following generic names for definite *rejection* from the "Official List," on the ground that they are preoccupied (see Art. 34):

TREMATODA:

Acanthocephala Dies., 1858, not Laporte, 1832.
Acrodactyla Staff., 1904, not Hal., ante 1846.
Anadasmus Looss, 1899, not Walsingham, 1897.
Anisogaster Looss, 1901, not Deyr, 1863.
Astia Looss, 1899, not Koch, 1879.
Baris Looss, 1899, not Germ., 1817.
Brachymetra Stoss., 1904, not Mayr, 1865.
Creadium Looss, 1899, not Vieill., 1816.
Crossodera Duj., 1845, not Gould, 1837.
Eurycœlum Brock, 1886, not Chaudoir, 1848.
Eurysoma Duj., 1845, not Gistl., 1829.
Leioderma Staff., 1904, not Will.-Suhm, 1873.
Leptalea Looss, 1899, not Klug, 1839.
Leptosoma Staff., not Leach, 1819.
Levinsenia Stoss., 1899, not Mesnil, 1897.
Macraspis Olss., 1868 or 1869, not McL., ante 1835.
Megacetes Looss, 1899, not Thomas, 1859.
Microscapha Looss, 1899, not LeConte, 1866.
Polyorchis Stoss., 1892, not Agassiz, 1862.
Polysarcus Looss, 1899, not Fieb., 1853.
Spathidium Looss, 1899, not Duj., 1841.
Stomylus Looss, 1899, not Fahræus, 1871.

NEMATODA:[3]

Acanthophorus Linst., 1876, not Serv., 1832.
Acanthosoma Mayer, 1844, not Curt., 1824.
Aspidocephalus Dies., 1851, not Motsch, 1839.
Brachynema Cobb, 1893, not Fieb., 1861.
Cephalacanthus Dies., 1853, not Lac, 1802.
Cephalonema Cobb, 1893, not Stimps, ante 1882.
Chœtosoma Claparède, 1863, not Westwood, 1851.
Cheiracanthus Dies., 1838, not Agassiz, 1833.
Cochlus Zed., 1803, not Humph., 1797.
Conocephalus Dies., 1861, not Thunb., 1812.

[1] Paragraphs are numbered continuously with the earlier lists.

[2] See Art. 19, and Opinions 26, 27, 34 and 36.

[3] This list contains a few names of organisms which are not Nematoda, but which have been classified as such at one time or another.