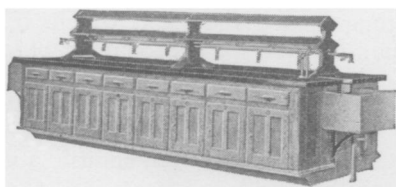


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Dawn Man's Brain

Anthropology

E. O. JAMES, in *The Beginnings of Man* (Doubleday Doran):

In view of the existence of *Eoanthropus*, with a brain case having a marked similarity to that of *Homo sapiens*, in a period almost certainly anterior to that of the Neanderthal type, it would be illogical to suppose that the apparently intellectually superior Piltdown race was necessarily inferior to its successors in respect of religious emotions. The brain of the "dawn man," though small, comes definitely within the range of variation in size found in modern man. Of course, mere volume of brain is not the only criterion of mental superiority, but, as Elliot Smith has shown, a brain must reach a certain size and weight—950 grammes, or 1,000 c.c. in volume—before it can be the seat of human intelligence. Growth in volume continues till a certain maximum weight is reached; then development takes the place of growth, the brain elements entering into more and more complex relations with each other without much increase in size and number.

We now know that it is in the prefrontal region (*i.e.*, the front part forming the forehead) that the higher mental faculties are centered, and consequently stupidity and dementia follow from the degeneration of this area. In spite of the complexity of the spinal cord, and still more of the medulla and cerebellum, no process confined to these structures involves human consciousness. True conscious physical activity belongs to the forebrain, and almost entirely to the folded layers of gray matter covering the cerebral hemispheres—the so-called cerebral cortex. In *Pithecanthropus* this region was undeveloped, showing that the creature was of low intelligence, and in the Neanderthals it is not fully developed, having a protuberance as in the brain of the anthropoids. The left frontal lobe in particular, which is associated with the power of speech, is not much developed in the lower part, so that probably the cave men had a limited power of speech. In *Homo sapiens* the inferior or third frontal convolution is expanded so as to reach back to the stem of what is called the fissure of Sylvius, forming the anterior boundary of the stem, this new orbital part of the frontal lobe being associated with the faculty of speech. In Sir Arthur Keith's reconstruction of the Piltdown brain, the third frontal convolution reaches the human

Separated Twins—Cont'd

ference in intellectual attainments, with O., the Canadian twin, always rating consistently higher. Yet both the family judgment and psychological tests showed that emotionally and temperamentally they were very much alike.

Just the opposite state of affairs obtained in the first pair of twins to be studied scientifically, described about four years ago by Dr. H. J. Muller of the University of Texas. These twins were very similar in their mental ability and showed considerable variation in emotional traits. It would be premature, Dr. Newman pointed out, to base any very final conclusions on the study of just these two cases, that either emotional or intellectual characters are more strongly inherited or influenced by such outside factors as environment and training. He has succeeded in running down four other sets of separated twins and hopes from the study of these additional cases to obtain more conclusive evidence on this important subject.

Science News-Letter, March 30, 1929

standard, and it is even more prominent in Sir Smith Woodward's cast. Therefore, while some of the parts which develop latest in ourselves were defective in *Eoanthropus*, he was nevertheless far removed not only from the "dumb animals," including the gorilla and even *Pithecanthropus*, but also from *Homo Neanderthalensis*.

In view of these somewhat technical anatomical facts, the Piltdown race is seen to be quite definitely human, and if we are compelled to grant the religious emotion to the cave man, it would be illogical to suppose, in the absence of definite evidence to the contrary, that the earlier species, possessing a brain in so many ways like our own, was inferior in this respect. Religion, therefore, was practised in all probability in the Lower Palæolithic, and it may have been part of the original endowment of mankind, though at present we have no positive evidence before the time of the Mousterians.

Science News-Letter, March 30, 1929

An "endless" phonograph record which could be used to record an entire opera or symphony has been produced by a British inventor.

Indian summer is not a season, but is simply a name for any spell of warm autumn weather following a cold snap.