788TH ORDINARY GENERAL MEETING

HELD IN COMMITTEE ROOM B, THE CENTRAL HALL, WESTMINSTER, S.W.1, ON MONDAY, MARCH 25TH, 1935, AT 5.30 P.M.

G. A. LEVETT-YEATS, Esq., C.I.E., I.S.O., F.Z.S., IN THE CHAIR.

The Minutes of the previous Meeting were read, confirmed and signed, and the HON. SECRETARY announced the election of George Robert Gair, Esq., M.A., F.S.A. (Scot.), as an Associate.

The CHAIRMAN then called on Mr. Douglas Dewar, B.A., F.Z.S., to read his paper on "A Critical Examination of the Supposed Fossil Links between Man and the Lower Animals."

A CRITICAL EXAMINATION OF THE SUPPOSED FOSSIL LINKS BETWEEN MAN AND THE LOWER ANIMALS.

By DOUGLAS DEWAR, Esq., B.A., F.Z.S.

INTRODUCTION.

AS I shall have to mention a number of fossils having strange names and the age of the rock in which each of these was found, a chart has been prepared in order to make it easier to follow my remarks. In the left-hand column of this is set forth the name of every known fossil of man and anthropoid ape. The other columns represent geological periods in order of time, the youngest period being on the left and the oldest on the extreme right. The chart shows only the periods in which anthropoid and human fossils have been found, *viz.*,

the Quaternary (Pleistocene) and all the Tertiary except the earliest period—the Eocene. The chart is not drawn to scale. Judging by the thickness of the rocks of each period at the place of their greatest development, the duration of the Pliocene is about three times that of the Pleistocene, and the Oligocene a little more than three times, while that of the Miocene is more than five times as great as that of the Pleistocene. As regards the actual duration of time: at present there are no known means of determining this accurately. The estimates are all of the nature of guesses. Some estimate the duration of the Quaternary and Tertiary Periods at about 2 million years, others put the figure at about 80 million! Judging by the amount of sodium in the sea the estimate of 2 million is probably far less inaccurate than that of 80 million years.

The divisions of the Quaternary and Tertiary rocks are primarily based on the percentage of the fossils they contain of shell-fish representing living species. Thus in the Pleistocene from 90 to 100 per cent. of the shell-fish fossils are those of living species, in the Pliocene the percentage is from 50 to 90, being greater in the later part of the period, in the Miocene the percentage is from 20 to 50, and in the Oligocene from 10 to 20. The horizontal line in the cages representing periods indicates the horizon or horizons in which fossils of the genus named in the first column are known to occur. A very short line indicates that only one fossil of the creature has been found, or, if more than one fossil has been found, that all are from the same horizon. Thus, the short line against *Homo heidelbergensis* indicates that only one fossil of it has been found, and this in a rock which is generally supposed to be of earliest Pleistocene time. The long line against *Dryopithecus* indicates that fossils of this genus have been found in several lower Pliocene horizons and many Miocene ones. In the case of *Homo sapiens*, the line is made to end with the lowest Pleistocene because no fossil of *H. sapiens* has been found in any rock universally admitted to be of earlier date than lowest Pleistocene. If, however, those who deem the deposit in which the Castenedolo skull was found to be of early Pliocene date are right, the line representing *Homo sapiens* must be extended as shown by the row of dots. If, as has been suggested, the Calaveras skull be of a still earlier period the line must be even further extended. In the case of species or genera still living, the lines representing the known distribution have been extended a little to the left of the Pleistocene age to represent this.

As some of the fossils we shall have to consider were found in strata containing either no other fossils, or very few, the determination of their date is difficult; in such cases there is often difference of opinion among experts. In the chart the period shown is that accepted by the majority of them. By running the eye up and down the chart in any part of any period it can be seen at a glance what men and apes are known by their fossils to have been in existence at that period of time. For example, the chart shows that three fossils of higher Primates have been found in lower Oligocene deposits but none in those of later Oligocene date. The chart shows only fossils, and not human artifacts, found in the rocks. I may here mention that stone implements, which appear to have been chipped by hand, are abundant in Pliocene deposits, and some occur in Miocene and even in Oligocene rocks.

Most evolutionists believe that man and the living anthropoid apes, chimpanzee, gorilla, orang and gibbon, have all descended from a common ancestor that lived comparatively recently as geologists reckon time—an ancestor that gave rise to diverging lines of descendants leading up to man and the above four anthropoids. If this be so, some individuals on each of these lines of descent must have left fossil remains. Since the appearance of Darwin's *Origin of Species*, unceasing search has been made for fossil links between man and his supposed simian ancestor, in full confidence of discovering such. The first discovery, made very shortly after the appearance of the *Origin of Species*—that of a skull of Neanderthal Man (*Homo neanderthalensis*)—was apparently just what was sought—an ancient man more brute-like than modern man. Evolutionists were jubilant. Professor King wrote: "The Neanderthal skull is so eminently simian . . . that I am constrained to believe that the thoughts and desires which once dwelt within it never soared beyond those of the brute." (Keith, *The Antiquity of Man*, p. 189.) This assertion affords an excellent example of the wish being father to the thought. We now know that Neanderthal Man had a brain greater than that of some living races of men, was a skilful artizan and buried his dead. Owing to the belief that man is an evolving animal, subsequent discoveries of remains of modern types of man in deposits much older than those in which Neanderthal Man occur were discredited. Despite the plainest geological evidence, scientific men declined to believe in the great antiquity of the human skull found in

1860 by Professor Ragazzoni at Castenedolo in Italy, associated with Pliocene shells in an undisturbed stratum. Similar treatment was meted out to the Abbeville jaw, the Foxhall jaw and the Olmo skull found in 1863, to the Calaveras skull found in 1866, the Clichy skeleton found in 1868, the Galley Hill skeleton found in 1888, and the Oldoway skeleton found in 1913.

Very different was the treatment of the remains named *Pithecanthropus*, the ape-man, found by Dubois in Java in 1891–92 in deposits of much earlier date than those containing fossils of Neanderthal Man. This was hailed as the long-sought missing link—something midway between man and anthropoid ape. Haeckel wrote (*The Last Link* (1898), p. 26): "*Pithecanthropus erectus* of Dubois is truly a Pliocene remainder of that famous group of catarrhines which were the immediate pithecoid ancestors of man. He is indeed the long-searched for 'missing link,' for which, in 1866, I myself had proposed the hypothetical genus *Pithecanthropus*, species *Alalus*." Then came a series of finds as disconcerting as unexpected. The first was the finding in 1907 of the Mauer jaw (*Homo heidelbergensis* or *Palaeoanthropus*), which was human of far more primitive type than Neanderthal Man—in deposits of about the same age as those that held the remains of *Pithecanthropus*. Still more disconcerting was the finding in 1912 of the Piltdown skull (*Eoanthropus*), clearly human but more brute-like than Neanderthal Man, in deposits of apparently nearly the same time as those that contained the Mauer jaw and *Pithecanthropus*. These finds meant the dethronement of the last named from its position of half-human ancestor of man, because it showed that contemporaneously with it there existed fully formed men. Meanwhile, Neanderthal Man had had to be rejected as ancestral to modern man, because the human beings that immediately succeeded him in the deposits differed from him anatomically to such an extent as to preclude their being his descendants.

In 1921 came the discovery in the Broken Hill mine, associated with the bones of many animals, all save one belonging to living species, of the very primitive type of man known as Rhodesian Man (*Homo rhodesiensis* or *Cyphanthropus*). The last find shows that a very primitive type of man was in existence in quite ercent times.

By this time zoologists and anthropologists were compelled to admit that their earlier ideas regarding the evolution of man were incorrect, and they were, in consequence, led to consider

that perhaps after all Dr. Reck may have been right in his contention that the modern type of human skeleton unearthed by him at Oldoway in Tanganyika Territory was of very ancient date. In consequence, in 1931, an expedition composed of Drs. Reck and Leakey and four other experts visited the spot to try to settle the age of the skeleton Reck had found. They discovered in the layers immediately below that from which the skeleton had been exhumed, not only tools of human manufacture, but the remains of *Dinotherium*, an extinct genus of the elephant family of which fossils had previously been found in Miocene and Lower Pliocene beds. This discovery must mean either that *Homo sapiens* existed in Lower Pliocene time, or that *Dinotherium* persisted in East Africa long after it had become extinct elsewhere, or that the human skeleton was of later date than the other fossils associated with it. The experts accepted the last alternative. Dr. Leakey writes (*Adam's Ancestors* (1934), p. 204): "We finally arrived at the conclusion that it (the skeleton found by Reck) was not nearly so ancient as the fossil animals or Stone Age implements found in the same deposits, but that it represented a maker of the very much later Aurignacian culture (Middle Pleistocene)."

But a surprise was in store for the investigators. On March 29th, 1932, Dr. Leakey found at Kanam, in East Africa, a human lower jaw associated with the remains of extinct animals, including a tooth of *Dinotherium*, together with implements of Oldowan culture, which "strongly suggest an antiquity greater than that of either the Suffolk Bone Bed or of the base of the Choukoutien deposits." In other words, the jawbone in question is of a date not later than Upper Pliocene. After careful examination of the mandible, Leakey wrote (*loc. cit.*, p. 207): "There are small details—especially the nature of the roots of the teeth as revealed by X-ray—which have made me separate this specimen from *Homo sapiens* and describe it as a new species called *Homo kanamensis*, but it is very closely related to *Homo sapiens* and must be regarded as ancestral to that species." Some authorities, however, consider that the jaw belongs to *Homo sapiens*.

A few days after the Kanam find, fragments of two human skulls were found by Dr. Leakey at Kanjera, near Kanam, in association with bones of animals more recent than those at Kanam and stone tools of Chellean culture (Lower Pleistocene). He considers that these fragments exhibit no character inconsistent with man of modern type.

Thus, even if we assume that *Dinotherium* persisted much later in Africa than in other places, and reject the evidence of the antiquity of the Castenedolo skull (and the only reason for so doing is, as Sir A. Keith says, acceptance means shattering accepted beliefs), we are confronted with the facts that man of modern type (*H. kanamensis*) existed in the Upper Pliocene and *H. sapiens* in Lower Pleistocene time, *i.e.*, long before Neanderthal Man became extinct. These facts exclude from the ancestry of modern man the following creatures, which have been adduced as possible progenitors: *Sinanthropus* (Pekin Man), *Pithecanthropus*, *Australopithecus* (a large-brained fossil anthropoid ape), Heildelberg Man, Piltdown Man, Rhodesian Man, Neanderthal Man and Java Man (*Homo javensis* or *Javanthropus*). It is therefore useless to look for ancestors of man in deposits earlier than the Pliocene. This fact would have been realised seventy years ago had not zoologists been dominated by a theory.*

* Since this paper was sent to press the antiquity of the Kanam jaw has been questioned. This invariably happens in the case of a fossil of which the apparent age conflicts with the dominant theory; on the other hand, the age of a fossil is almost invariably accepted without challenge when it does not so conflict.

Two years ago a conference of experts at Cambridge accepted the alleged antiquity of the Kanam jaw. Recently a geologist, Professor P. G. H. Boswell, at the suggestion of Dr. Leakey, the discoverer of the jaw, and under the auspices of the Royal Society, visited the locality of the find. He reports that owing to the site being inadequately identified either on the map or on the ground, he could not find it; that a photograph purporting to show the site is inaccurately identified, and that the geological strata of the district are liable to "slipping" and, in consequence, are unreliable for dating the fossils they hold. Therefore, in his opinion, suspicion is cast on the antiquity of the Kanam jaw.

If the stratum in which the jaw and associated fossils of extinct animals were found has in fact slipped, I must confess my inability to understand how this has caused the jaw and the implements associated with it to have slipped down and the extinct animal fossils to have slipped up without leaving traces of a fault. But strange things seem to happen in geological formations. Thus in the asphalt of Rancho La Brea, in California, the skeleton of a woman of modern Indian type was found in close association with that of the extinct sabre-toothed tiger. Experts declare that the human skeleton has sunk to the level occupied by animals of very much earlier date.

If both Leakey and Reck be wrong about the dates of the fossils they found in different localities, it would seem that expert geologists are very liable to be misled; in that case, what assurance have we that the dates assigned to *any* of the fossils mentioned in this paper are even approximately correct?

We have now to consider the fossils of later date than *H. kanamensis*. *Neopithecus* from the Upper Pliocene consists of a 3rd molar tooth. Schlosser named this tooth *Anthropodus* because of its close resemblance to a human tooth; it is, however, smaller and narrower than any known human molar. As its possessor lived very shortly before, if not contemporaneously with, *H. kanamensis*, it cannot have been an ancestor of man.

We now come to the fossils of Lower Pliocene date; these are *Palæopithecus*, two species of *Ramapithecus*, *Sugrivapithecus* and two species of *Dryopithecus*. *Palæopithecus*, from Northern India, consists of a palate holding all the teeth of one side except the incisors. No one deems this genus to be ancestral to man, but some are of opinion that it may be a progenitor of the gorilla. *Ramapithecus*, together with *Sugrivapithecus* and *Brahmapithecus*, was discovered in 1932 by the Yale North India Expedition. Dr. D. G. E. Lewis gives a description of these fossils in the *American Journal of Science* for March, 1934. These three genera are named after Hindu legendary beings. Rama was a Hindu hero, Sugriva is the king of the monkeys in the Ramayana, and Brahma the head of the Trinity of Hindu gods.

Ramapithecus brevirostris consists of the right half of an upper jaw, with two molar and two premolar teeth and the roots of an incisor. *R. hariensis*, which is from a lower horizon, consists of a fragment of the right half of the upper jaw holding two molar teeth. The teeth and jaws of this genus have a more human appearance than have those of *Sivapithecus* and *Dryopithecus*, discussed below, but their discoverer does not consider that the genus, *Ramapithecus*, to which they belong, is ancestral to man. As the teeth of every genus of ape exhibit features peculiar to the genus, it follows, evolution or no evolution, that the teeth of some genera resemble human teeth more closely than those of other genera do.

Sugrivapithecus consists of a left lower jaw bearing two molars, one premolar and roots of a molar, premolar, canine and incisor. The canines and incisors seem to have been small and more human in appearance than those of any other known ape, and the molars, apart from their narrowness, have features found in human molars. The jaw itself has both human and non-human features. The chin is better developed than that of *Sinanthropus*. Although the known parts of the jaw are perhaps more human in appearance than those of any other known ape, its discoverer

does not suggest that it belongs to an ancestor of man; it is too specialized to be such.

We have now to consider the genus *Dryopithecus*, of which more fossils have been found than of any other ape. As some authorities regard this genus as a possible ancestor of man and of some of the living anthropoid apes, we must consider it in detail. The two species named above occur in Lower Pliocene deposits. In the Miocene seven or eight other species have been found. Some of these differ so greatly from others that many authorities would split the genus into two or more genera.

Among evolutionists to-day there are two schools of thought: one believes that the human stem branched off from the main anthropoid-ape stock comparatively recently; Gregory and Pilgrim are prominent adherents of this school. According to the other school, the separation of the human from the ape stock took place much farther back, possibly as early as the Eocene. To this school belong Wood-Jones, Sergi and Osborn.

The adherents of each of these schools differ among themselves, and it is scarcely an exaggeration to say that no two authorities are in complete agreement as to the genealogical tree representing man's descent from the apes. Most of those who believe in the recent separation of man from the apes regard *Dryopithecus* as probably ancestral to man; Pilgrim, however, regards *Sivapithecus* as the more probable ancestor.

Let us now examine the claims advanced in favour of *Dryopithecus*. Some of the species of this extinct genus are from Northern India, some from Central Europe, one is from Egypt and one from Kenya. Although unusually numerous, the fossils of *Dryopithecus*, as in the case of those of all anthropoid apes, are very fragmentary and consist merely of teeth or jaws, except a fossil of *Dryopithecus* and one of a gibbon, *Pliohylobates*, both from Eppelsheim in Germany, which consist respectively of a humerus (upper arm-bone) and a femur (thigh-bone). It is very important to bear this in mind. A jaw or a tooth is a very slender foundation upon which to base a theory.

Gregory is of opinion that some progressive group of *Dryopithecus* gave rise to man. He bases this on the patterns of the molar teeth, having very little else to go upon. Of course, no adherent of the other school agrees with Gregory; and Pilgrim, who belongs to the same school as Gregory, considers that *Dryopithecus* is definitely excluded from the line of human ancestry because of the length of the molar teeth and of the symphysis,

i.e., the part of the lower jaw where the two halves meet in the middle.

Since Pilgrim expressed this opinion, *Dryopithecus leakii* was found in Kenya. Of this fossil, Sir Arthur Keith writes (*Morning Post*, August 4th, 1932): "I would not say that this is the long-sought ancestor of man and apes. He is too anthropoid in his character. The new discovery appears to be a definite link between the Chimpanzee and the Gorilla." The opinion expressed in the last sentence is shown to be incorrect by the recent find of the fossil *Proconsul*, which, though of earlier date than *D. leakii*, is definitely a Chimpanzee.

In Upper Miocene deposits have been found, in addition to six species of *Dryopithecus*, fossils of the following genera of anthropoid apes: *Pliopithecus*, *Hylopithecus*, *Griphopithecus*, *Palæosimia*, *Brahmapithecus*, and *Sivapithecus*.

Pliopithecus, represented by a lower jaw from France, and *Hylopithecus* from Northern India and *Griphopithecus* from Europe, each represented by a single molar tooth, are clearly gibbons, and there is no question of their being ancestral to man. *Palæosimia*, consisting of a single molar tooth from Northern India, is likewise excluded, because, as its name implies, it is a kind of orang. Some deem the genus to be an ancestor of the living orang.

Brahmapithecus, also from Northern India, consists of the left half of a lower jaw bearing two molar teeth, and roots of a molar and premolar. The discoverer, Dr. J. Lewis, is of opinion (*loc. cit.*) that it "has affinities with *Dryopithecus*, and was probably derived from a common stock. It may very well lie near to the stem which leads to the hominidæ proper."

All the known fossils of *Sivapithecus* (named after the Hindu god Siva) are from Northern India. Dr. Pilgrim divides them into four species—*S. indicus*, of which only one molar and one premolar tooth are known; *S. himalayensis*, of which the greater part of a lower jaw has been found; *S. orientalis*, of which the greater part of the lower jaw is known; and *S. Middlemissi*, of which only two molar teeth have been found.

Pilgrim deems (*Palæontologia Indica*, 1927) *Sivapithecus* to be "the most likely human ancestor at present known to us." When he made this assertion he, in common with most zoologists, believed that man of modern type did not exist before the Pleistocene, for he wrote (*op. cit.*): "The changes which in the human line, according to hypothesis, have taken place since the Lower

Pliocene are so radical and profound that it would be rash to deny merely from a consideration of the muzzle and teeth that any single Miocene ape could not have been the ancestor which we now seek." We now know that if such radical changes did, in fact, take place, these must have been effected between the Lower and Upper Pliocene. Pilgrim admits that the known parts of *Sivapithecus* differ greatly from those of man; the changes, he assumes, include the inward shifting of the canine and the front pre-molar and the contraction of the front portion of the muzzle. Few zoologists, even of the school to which Pilgrim belongs, accept his view that *Sivapithecus* was perhaps the ancestor of man. Professor Gregory and Sir Arthur Keith certainly do not.

Let me here say that those who are of opinion that man is descended from a primitive *Dryopithecus* or *Sivapithecus* stock admit that their opinions cannot be substantiated until more complete fossil evidence becomes available. The recent discovery of *Homo kanamensis* is, of course, very unfavourable to these opinions, shortening as it does the time-interval between man and these supposed ancestors.

We now come to the Lower Miocene fossils; these consist of a species of *Dryopithecus*, *Pliohylobates* and three anthropoid apes recently found in Kenya by Dr. A. T. Hopwood, which he has named *Limnopithecus*, *Xenopithecus* and *Proconsul*. We have already discussed the genus *Dryopithecus*. *Prohylobates*, from Egypt, where the *Dryopithecus* species was also found, is, as its name indicates, a gibbon, so there is no question of it being ancestral to man.

Limnopithecus consists of part of the left jaw bearing three cheek teeth and part of the right jaw with two of these teeth. Hopwood believes the possessor of these jaws to be allied, but not ancestral, to the gibbon and not an ancestor of man.

Xenopithecus consists of part of the left upper jaw bearing three molars. Hopwood regards this genus as a peculiar form of anthropoid ape not ancestral to man.

Proconsul consists of a left upper jaw with the teeth and a broken lower jaw containing most of the teeth. Hopwood considers that this genus is definitely an ancestor of the living chimpanzee.

This last discovery is interesting because we now have evidence of the existence in the Lower Miocene of the chimpanzee and the gibbon and probably the orang (*Palæsimia*) in the Upper

Miocene. This seems to dispose of the notion that either of the later forms *Dryopithecus* or *Sivapithecus* was the common ancestor of the anthropoid apes and man. As the evolutionist deems the teeth of man to be more primitive than those of the living anthropoid apes, and the latter had separated from the main stem by the Miocene, he must, if he be logical, expect to find both the gorilla and man also so separated by the Miocene. So far no fossils of the gorilla have been found. As regards man, unless the Calaveras skull and the Castenedolo remains be of earlier date, no fossil has been found earlier than the Upper Pliocene, but what many regard as human artifacts have been found in Miocene deposits in several localities, and even in Oligocene beds in Belgium; and, as man is the only known creature who manufactures such things, the discovery of fossils representing man in Miocene deposits should cause no surprise; indeed, the Calaveras skull may be of Miocene Age. In the Oligocene only three fossils which can be definitely assigned to the anthropoid group have been found, all in the Lower Oligocene of Egypt. These are named *Propliopithecus*, *Parapithecus*, and *Moeropithecus*.

Propliopithecus consists of half a lower jaw with the teeth. Its possessor seems to have been an anthropoid ape of moderate size. Gregory deems it to be the progenitor of both man and the anthropoid apes; Sergi is of opinion that it is the ancestor of man but not of the apes, because he considers the symphysis of the jaw to be quasi-human; Keith regards *Propliopithecus* as the ancestor of only the gibbons; Le Gros Clark thinks it is related to the immediate ancestor of the gibbons, but not an actual ancestor of either man or any living ape. This is typical of the difference of opinion that occurs everywhere among zoological experts.

Parapithecus, from the same deposit as *Propliopithecus*, likewise consists of a lower jaw, which is considered more primitive than *Propliopithecus*. Most authorities regard it as ancestral to neither man nor the living anthropoid apes. *Moeropithecus*, found in association with *Parapithecus*, consists of two molar teeth. It is allied to the latter.

From the Eocene, apart from lemur-like and tarsier-like fossils, there is only the single molar tooth known as *Pondaungia* from the Upper Eocene of Burma. Many doubt that the tooth is that of a Primate; in any case no one regards it as pertaining to an ancestor of *Propliopithecus*, *Moeropithecus* or *Parapithecus*.

Between these last and all the later Primates there is, to quote Pilgrim (*loc. cit.*, p. 15), "a developmental gap, which Gregory, in *The Origin and Development of Human Dentition*, has not been able to fill."

The above are all the fossils that have been adduced as possible ancestors of man. To-day no one having any knowledge of anatomy dare assert positively that any of them is such an ancestor. Sir Arthur Keith does not place any of them in the direct line of man's ancestry in the diagram representing his view of human evolution in his *New Discoveries Relating to the Antiquity of Man*.

From the foregoing, it is apparent that the known Primate fossils furnish no evidence against the view that man has no pre-human ancestors, that he was specially created.

This, however, does not prevent Sir Arthur Keith making the following assertion:

"If we could summon back to the world of to-day all the extinct kinds of man and ape which have flourished and passed away during the three last great geological ages and marshal them in serried ranks according to the respective periods at which they lived, we should have under our eyes an unbroken series of forms linking the brain of the lowest ape to that of the highest man." (*Darwinism and What it Implies*, p. 5.)

A more unscientific statement than this it would be difficult to find. It assumes the truth of the evolution theory, the recent separation of man from simian stock, the existence in comparatively recent times of scores of kinds of ape of which not a single fossil has been found, that during the middle Tertiary the varieties of apes were so many as to render the world a veritable monkey house, that only a tiny fraction of this great medley of apes have left fossil remains, and, strange to say, the remains that have been found happen to include none of the many links between the apes and man.*

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* Even less scientific were some of the statements of Sir A. Keith made in an interview on January 15th, 1935 (reported in *The Daily Telegraph* of January 16th, 1935), relating to Sir Ambrose Fleming's statement in his Presidential Address to the Victoria Institute that the evolution theory is the product of the imagination.

In the course of this interview, Sir A. Keith said: "I hesitate to set up against his opinions other views which I know to be correct." Here the word "know" seems to have been incorrectly used instead of "believe firmly," or "am convinced." If Sir Arthur Keith *knows* that

We, as members of a philosophical body, take the Primate fossils as we find them and not as Sir Arthur Keith would have them.

Scanty though the fossils of anthropoid apes be, they afford some interesting information and raise some difficult questions. They tell us that formerly the anthropoid apes and mankind exhibited more diversity than they now do. This does not accord well with the notion that man and the existing anthropoid apes have all descended from a common ancestor. Moreover, the known human fossils afford no evidence that the brain of man has increased progressively in size. The size of the brain case affords no criterion of the age of a human fossil; it would seem that formerly big-brained and small-brained men lived contemporaneously as they do to-day.

One question that arises as the result of the survey of the higher Primate fossils is: why have so many apparently unassailable forms become extinct—*Sinanthropus*, *Pithecanthropus*, *Dryopithecus*, *Sivapithecus*, etc. ? Were they destroyed by some great catastrophe ? Primates are not the only group in which many forms have become extinct; other examples are afforded

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man is descended from an animal, the least he can do is to name the creature.

Again, he said the human remains found in caves on Mount Carmel are "certainly 100,000 years old." He ought to furnish the proof that gives this figure its certainty. In view of the amount of sodium in the oceans, the colossal figures usually given of the age of the earth ought not to be accepted until it can be shown by what means the sea has ridded itself of the greater part of the sodium which must have been carried into it by the rivers (*vide Trans. Vict. Inst.*, vol. lxv (1933), pp. 26-37).

Further, Sir A. Keith asserted "There is no evidence whatever of any single person having been dead and then brought to life." He ought to have said "no evidence whatever of a kind I am able to accept." The Bible contains evidence. Sir A. Keith, disagreeing with Paley, may deem this bad evidence; but, nevertheless, it remains evidence.

He also said, "Darwin's proof of evolution, announced in the *Descent of Man*, over 60 years ago, was so conclusive that no biologist since has been able to disprove it." This brief sentence contains two mistakes: Darwin did not *prove* that man evolved from an ape-like creature; he brought together a number of facts which he interpreted as denoting such descent. To say that no biologist has since been able to overthrow Darwin's argument is to ignore the great works of L. Vialleton, for many years Professor of Comparative Anatomy at Montpelier, viz., his *Morphologie Generale* (1925), and *L'Origine des Êtres Vivants; L'Illusion transformiste.*

To treat certain opinions as proof and to ignore all other opinions may be excellent propaganda but it is certainly not science.

by the giant South American sloths, and many elephants, rhinoceroses, horses, etc.

Another question that arises is why, apart from comparatively modern human fossils, are the great majority of the known higher Primate fossils of so fragmentary nature, consisting as they do of jaws, or teeth ? Moreover, why is it that the great bulk of these have been found either in Northern India, Central Europe, Egypt or East Africa ?

Arboreal habits would account for the comparative scarcity of these fossils, but not for their fragmentary nature and limited distribution. It would seem that most of the higher Primates of which fossils are known, excluding the more recent human fossils, did not live in the localities in which their remains were found ; that the fragments in question were washed from considerable distances to the places in which eventually they were buried. It may be that during the greater part of Tertiary time, men, anthropoid apes and monkeys were confined to temperate highlands and mountains. In that case, most of the sediments laid down in the areas occupied by them would have been eroded out of existence owing to the constant denudation of all deposits not protected by a covering of water. The known fossils afford no conclusive evidence that any Primate genus has become transformed into any other genus. Each new type appears in the rocks having all its characteristics, as if it had migrated from some other locality.

In the present state of our knowledge, all that science can truthfully say is that it knows not when, where or how man originated.

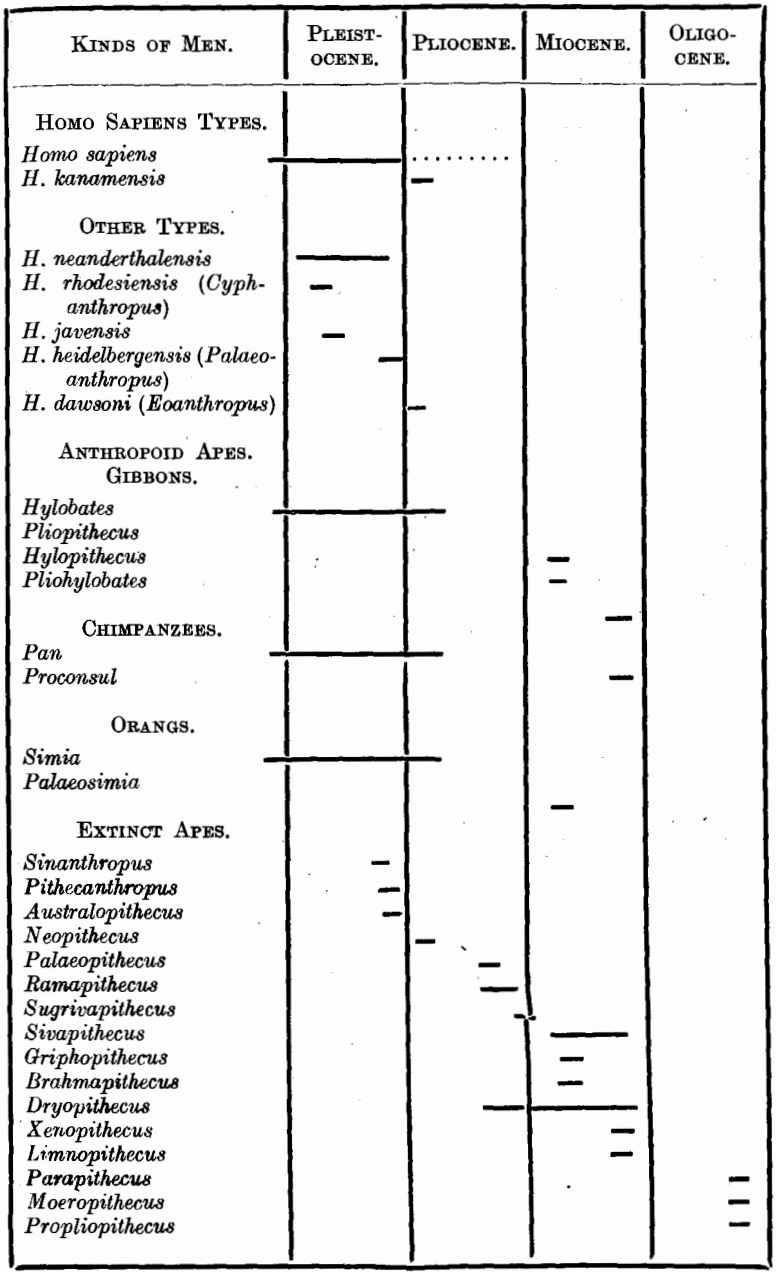
Discussion.

The Chairman said : We have had the pleasure of listening to a very instructive paper on the so-called evolutionary links between man and the lower animals and we owe Mr. Dewar thanks for his clear exposition of the case.

He has shown us how divided the Darwinists are as to the more immediate ancestry of man. How one school, geologically speaking, seeks a very recent branching off from the main stem while the other seeks a more remote date.

He has also shown us how prone they are to make the facts fit the theory instead of the theory being made to accord with the facts ; as in the case of the Galley Hill skeleton, the Oldoway Man, the Kanam Man, the remains found at Kangeia and other cases.

Distribution in Time of Men and Anthropoid Apes.



This proneness is admitted by Sir Arthur Keith. In referring to certain discoveries made by Mr. Leakey at Nakuru in East Africa, he says: " all of us approach such issues—with certain biases and prejudices " (p. 170, *New Discoveries Relating to the Antiquity of Man*).

Apropos of this I might point out that Sir Arthur Keith, in the book referred to just now, states that the Peking man's skull was found in a deposit of the Pleistocene period. He compares the Peking skull with that of the Neanderthal man found at La Chapelle and is struck by the superiority of the latter's brain capacity. The Neanderthal skull had a capacity of 1,635 c.c., while the Peking skull had one of 1,000 c.c. or with a little stretching 1,100 c.c.

Sir A. Keith estimates that a period of one million years would be necessary for the development required to bring the Peking man's skull up to the standard of the La Chapelle skull. But Geology, and the time-scale he has adopted, force him to allow no more than 200,000 years between the two skulls, and in doing so he adds 50,000 years on to the age of the Peking man and throws him back into the Pliocene according to his own time-scale. He then exclaims " Were, then, the Peking and Java man representatives of early Pleistocene humanity in their development of brain ? If so, then evolution must have proceeded rapidly to produce the many large-brained types of man who lived in Europe in the latter third of the Pleistocene period—even if we ascribe to it (the Pleistocene) a duration of a million years, evolutionary changes which converted the brain of Sinanthropus into that of La Chapelle must have proceeded rapidly." In other words, Peking man should have been found in a Miocene deposit. His arrival out of time is awkward, as he, together with this relative Java man, is displaced as a probable ancester of the Heidelberg and Piltdown men.

All these Pleistocene men, from Neanderthal man downwards, have been disqualified as ancestors of modern man by the evolutionists themselves. But so hard pressed are they to find a suitable ancestor that Sir Arthur Keith renews the claim of Piltdown man and puts him forward as a probable ancestor of modern man.

With reference to the relics of extinct apes found in the Pliocene, Miocene and Oligocene, I would like to say that too great importance is paid to the conjectural affinities of these animals by many people.

The remains are few and fragmentary and conclusions based upon them are likely to be found very erroneous in the light of fuller evidence.

Sir Arthur Keith admits the possibility of such mistakes in describing the discovery of Peking man. He expected from the structure of the teeth first found, that the skull would be somewhat of the modern type. He was much disappointed when the skull was unearthed to find that it was a very lowly and apelike one. He proved to be an " amazingly low type."

I think Mr. Dewar's paper shows very clearly that no reliable ancestor of modern man has yet been discovered, either in the Pleistocene or any other period.

The processes of evolution are admitted by evolutionaries to be very slow. The geological record is by no means so poor as it is often made out to be. We already know the fossils of 46·63 per cent. of the living genera of mammals alone. Numerous intermediate forms should have occurred, but they have not come to light. All these facts bear out Mr. Dewar's conclusion that at present Science does not throw any light on when, where and how man originated.

I shall now ask you all to join in a hearty vote of thanks to Mr. Dewar for his most able and useful paper.

Captain ACWORTH, after complimenting the speaker on his very clear exposition, said that it was a scandal that the boys and girls of this country should be taught to believe in the Theory of Organic Evolution as a scientific truth. The scandal was, however, far more widespread than was generally realised, for not only was it propagated in the schools and colleges of the country but also, persistently, through that most powerful agency of propaganda, the B.B.C., which reaches many millions of ordinary men and women. How biased was this Corporation in propagating the Theory of Evolution had become apparent since the meeting held at the Essex Hall on February 12th. Many requests were made at this meeting that the B.B.C. should be asked to allow eminent scientists, theologians and laymen to criticise this theory. It will, therefore, be of interest to you to know that despite evolutionists' denial of bias, Mr. C. A. Siepmann, the Director of Talks, in his reply to a

request from the " Evolution Protest Movement " for the statement of their case, wrote :—

" I am afraid that I can add nothing to my letter of February 22nd, in which I indicated that as far as I could see, there were no prospects of our being able to broadcast talks on the subject of evolution on the lines which you suggest."

This denial of free speech will not be allowed to stop here, and we are now writing to Sir John Reith. If he is unable to give us a satisfactory answer, we shall take the matter to the highest quarters.

The Rev. H. C. MORTON, B.A., Ph.D., said : We are all in Mr. Dewar's debt for a clearly thought, able and useful paper, which it will be advantageous to have at hand for reference in days to come.

If I venture upon anything even approaching criticism it would be just to remark that Mr. Dewar does our evolutionary anthropologists great honour by taking them so seriously—one almost feels too great honour.

I should like to ask two questions. First, Mr. Dewar distinguishes between " Pithecanthropus Erectus " and " Java man." Are not these the same ? And is not a third name sometimes given—" Trinil man " ?

Secondly, I wish Mr. Dewar would explain the ground upon which he thinks that arboreal habits account for the comparative scarcity of the higher primate fossils.

Too many absurdities have been perpetrated by evolutionists to permit of any great respect for their opinion. They jump hastily to evolutionary conclusions. For instance : Some years ago in the Mississippi Valley they were digging the foundations for gas works. When they had gone a certain depth they found a skeleton and, judging by the depth at which they found it, American scientists said it was 50,000 years old. They went on digging deeper and came across a Mississippi flatboat. Then someone remembered that years before a flatboat had been wrecked and a man lost in great floods. So they corrected the 50,000 to 50.

This is an earth subject often to great floods, and that makes quite uncertain the usual estimates of age from depth. Sir Arthur Keith, addressing the British Association on Evolution, specially

stressed the importance of "Piltdown man" and *Pithecanthropus*. But when "Piltdown man" was discovered, Mr. G. W. Wilks hastened to make an investigation of the place of discovery, and found that mixed with the gravel in which the "Piltdown" bones were found, were large flints not native to that locality. Evidently they had been water-borne, and Mr. Wilks made the extremely likely suggestion that, through the gap in the Southdowns to the south of Piltdown, the waters of a mighty flood had swept along the "Piltdown" bone mixed with large flints from the shores south of the Downs. This thick-skulled human being might very well have been one of the Antediluvians, for whose violence the Great Flood was sent upon the earth.

Sir Arthur Keith admitted in regard to *Pithecanthropus*, which consists of a piece of skull and two or three teeth, and also a thigh bone, that the thigh bone might have belonged to a modern man and the skull might have belonged to a modern ape. After these admissions, Sir Arthur Keith drew a conclusion sufficiently remarkable to be borne in memory, viz., that our remote ancestors developed their thigh bones more speedily than their skulls. Such conclusions may suit the evolutionists, but they will be scouted as ridiculous by the man of common sense, who will instead draw the conclusion that the thigh bone (which was found 50 ft. away from the piece of skull and the teeth) belonged to a man, and skull and teeth belonged to an ape.

Mr. Dewar does not make any reference to *Hesperopithecus*. In June, 1922, Sir Grafton Elliott Smith introduced both Mr. and Mrs. Hesperopithecus to the British public by publishing in *The Illustrated London News* a great two-paged picture of Mr. and Mrs. Hesperopithecus—two of our ancestors—walking amid rock scenery, presumably in the State of Nebraska. It was an audacious picture, very realistic, and calculated to give the unsuspecting public the idea that two remarkable skeletons had been found which, clothed with flesh, would look as Professor Elliott Smith depicted them. But the actual fact, in the singular, which was the sole and entire ground for this audacious picture, was that part of one molar tooth had been found in the State of Nebraska which has now been definitely allotted, not to an anthropoid ape of any type whatever, but to a peccary.

Really, the evolutionary view does not deserve to survive these absurdities. Mr. Dewar well concludes: "There is no evidence against the view that man has no pre-human ancestors, but was a special creation," and the mentality of some of the most eminent evolutionists makes us feel very comfortable about that conclusion.

The Rev. HUGH MILLER, M.A., F.Roy.Anth.I., Principal of the London School of Bible Studies, after commending highly the cogent clarity of the lecturer's paper, called attention to the great confusion caused by geological nomenclature never having been scientifically standardised. In any case, we could say with confidence that undoubtedly human remains had never been found in strata earlier than the Pleistocene. But geologists differed widely as to that deposit's sequence in time: some regarding it as the last of the Tertiary division, others as the main part of the Quaternary just below the Recent, or latest, layer.

Again, some writers attempted to date fossil remains by the stage of culture displayed by their associated artifacts, without stating the correlation they claimed to have established between individual eras of culture and particular geological strata. In this instance, also, much confusion arose. A few years ago, anthropologists and ethnologists were content to name some five or six cultural epochs. Now they claimed to have found no fewer than forty-five or fifty. By making these eras follow one another in strict sequence, they had been able to invent an entirely unreasonably prolonged period that had elapsed since man's first appearance upon earth. Judging, however, by the analogy of conditions within the ambit of historic times, many of these cultures must have been not only contemporaneous and parallel but likewise of very limited duration. A good illustration was furnished by the Worora tribe in N.W. Australia. In ritual and cultural procedures they were, even to-day, in a late Palæolithic stage: whereas, in the same area, other people had reached a wireless telephony, rustless steel, and aeroplane level. From another aspect, the same worker, by improving his *technique*, could produce the polished products attributed to the "Neolithic" Age, within a few months or years of his having turned out typical "Palæolithic" ones.

These facts were of great importance; for they showed the fallacy of trying to date exactly fossil remains by reference to artifacts discovered in appropinquity to them, or in the same horizon.

Another alleged reliable factor in age and developmental determination was claimed to be obtainable from studying the internal surfaces of the cranial bones. Great weight was attached to the examination of plaster casts showing the features presented by the interior of a brain-case. But such procedure for obtaining exact data was fallacious, so far as related to the hypothetical " evolution " of mental powers and intelligence from ancestors of inferior biological status. Between the inner aspects of the cranium and the cerebral surfaces were interposed three membranes, between which a considerable quantity of cerebro-spinal fluid constantly circulated. Hence the brain—as an organ—was supported by what might be termed the method of " Cushion Suspension." The means of this was obviously that the interior of the bones indicated nothing more than the extent of the cerebral mass and configuration, in the most general way possible. On the contrary, mental energy, intelligence, and ability—cognition, emotion and conation—depended, so far as identified and known, on the minute structure of the convolutions and cortex-areas. Practical psychology also demonstrated how an apparently microcerebrated man frequently showed powers of mentality much superior to those exhibited by a megalocerebrate.

In the foregoing respects, the " Evolutionist " merely followed a will-o'-the-wisp in solemnly trying to trace the emergence and growth of anthropic psychological potency, from the nervous organization possessed by the lowliest types of living creatures.

Mr. SIDNEY COLLETT said: It is my privilege to propose a very warm vote of thanks to our Chairman for presiding at our gathering this afternoon.

While on my feet, I should like to make a few remarks on this subject of Evolution.

I am sure it must be a source of real satisfaction to all here present to know by what has been said to-day, and especially by Mr. Dewar's masterly paper, that this Evolution theory, even on scientific grounds, has no real foundation in fact, whatever.

There is, however, a much more serious aspect about this matter,

which is not always realised, viz., that it constitutes a subtle and veiled attack upon the fundamental truths of the Bible, and I do not hesitate to say that there is a " smell of the Pit " about it !

Evolutionists plainly say that their teaching and that of the Bible are incompatible, and that if Evolution is right, then the Bible is wrong.

I quote the following few instances to prove my statement :—

Thos. Huxley said, " Evolution, if consistently accepted, makes it impossible to accept the Bible."

Bishop Barnes' words are : " If we accept Evolution, we have to abandon belief in the special creation of Adam in Paradise. We can no longer accept the story of the Fall . . . Man was not specially created by God, as the Jews of old believed, and as is stated in the books of Gensis."

Sir Oliver Lodge has stated the same thing in the following words : " The story of the Fall in the third chapter of Genesis was a crude legend ! "

While *Dean Inge* has stated that : " The doctrine of the ' Fall of Man ' seems to have been borrowed by the Hebrews from their neighbours. . . The old story of man's first disobedience is not science, and it is not exactly history."

Professor D. M. S. Watson, at a meeting of The British Association, said quite bluntly : " Evolution was a theory universally accepted, *not because it could be proved to be true, but because the only alternative, special creation, was clearly incredible.*" !

Now, all this is in spite of the fact that some of the greatest Evolutionists have discovered their mistake and given up the theory. For example, *Professor Haeckel* bewailed the fact that he was left almost alone in advocating evolution, and has left on record the following words :—

" Most modern investigators of Science have come to the conclusion that the doctrine of Evolution, and particularly Darwinism, is an error, and cannot be maintained." He then gives a list of several men whom he terms bold and talented scientists, as having abandoned Evolution !

While *Professor Virchow*, once a foremost world Evolutionist, came to see the folly of this view and said in his lecture on " The

Freedom of Science " : " It is all nonsense ; it cannot be proved by science that man descended from the ape, or from any other animal. Since the announcement of the theory, all real scientific knowledge has proceeded in the opposite direction." ! *

Little do these Evolutionists realize that by propagating their views they are unconsciously supporting the teaching of the infidel Blatchford, who only too truly said : " No Adam, then, No Fall ; No Fall, then no need for Atonement ; no Atonement, then no need of a Saviour " !

No wonder *Carlyle*, in a fit of intolerance, called it " The Damnification of Man." !

Lt.-Col. L. M. DAVIES, M.A., F.R.S.E., F.R.A.I., F.G.S., writes : Mr. Dewar's paper is very timely. All that he says is true. It is impossible to prove man's descent from an ape for many reasons, among which I would particularly emphasise the following :—

1. Primary (*i.e.*, historical) evidence is totally lacking ; and without such evidence Science is powerless to establish a single genetic connection. Sir Arthur Keith is as powerless as anyone else to say who the father of the " Unknown Warrior " was ; and yet he asks us to believe that he can trace the myriads of unknown ancestors connecting some unknown ape with a " first true man," no fraction of whose anatomy has ever been seen by any living person.
2. Every fossil ancestry involves an appeal to negative evidence, although Darwin himself declared that " negative evidence is worthless." At every point, we are asked to believe that the supposed ancestor appeared before the supposed descendant ; although geological support for the idea can only be found in negative pleas to the effect that the latter has not yet been seen in older rocks. The insecurity of such pleas is shown by the way in which forms are continually being discovered at unprecedentedly low levels, as geological research proceeds. Genealogical " trees " are

* Prof. Virchow was elected in 1898 as a Foreign Hon. Correspondent of the *Victoria Institute*.—Ed.

continually having to be scrapped for this reason. Only the other day, I myself demonstrated that a foraminiferal genus, commonly held to have first appeared in the Middle Eocene, was actually in existence before its supposed Cretaceous "ancestors." What Mr. Dewar has shown to be happening in the case of man's evolutionary pedigree is typical of what is happening in the case of all evolutionary pedigrees.

3. Man is, in many ways, more primitive than the apes in details of his bodily structure. It follows that any link between modern man and ape would have to be more specialised, in these respects, than we are; and so could hardly be our ancestor. The difficulty has been clearly seen by many modern anthropologists, including so eminent an authority as Dr. Marcellin Boule, Professor of Palæontology in the Museum of Natural History in Paris, who roundly declares that modern man can have "been derived neither from the Anthropoid stem, nor from any other known group" (*L'Homme fossile de la Chapelle aux-Saints*); in other words, the whole of our evolutionary ancestry is purely imaginary.

With regard to Sir Arthur Keith, who seems to have entered the lists against Sir Ambrose Fleming, I would like to point out that he (Sir Arthur) exhibits a well-marked double personality. It is easy to show that there are two, quite different, Sir Arthur Keiths. The one, whom we may distinguish as Sir Arthur "A," is a man of science, who studies concrete facts with exemplary thoroughness and candour, admitting the existence of difficulties and anomalies in the frankest possible manner. The other, whom we may call Sir Arthur "B," is a materialistic philosopher, a champion of the Rationalist Press, who propounds untenable generalities as unquestionable truths, ignores all that his *alter ego* has allowed, and is as confident and inaccurate as the first Sir Arthur is cautious and reserved.

Thus Sir Arthur "B" asks us why it is, if evolution be not true, that the farther back we go in geological time, the more ape-like do human remains become; but Sir Arthur "A" assures us that

human remains do nothing of the sort. He (Sir Arthur " A ") writes chapter after chapter to prove that modern man is much older than any Neanderthal remains yet found; and assures us that it is only their evolutionary bias which prevents scientists from admitting the vast age of the perfectly modern type remains found at Calaveras, Ipswich, Galley Hill, Clichy, Olmo, Castenedolo, etc., and makes them credit a great age—for which there is no evidence—to the Piltdown fragments. In fact, it was Sir Arthur " A " who wrote that excellent work *The Antiquity of Man*, in which will be found an antidote to nearly everything said by Sir Arthur " B," who is now talking nonsense against Sir Ambrose Fleming. The way in which one member of a composite personality can forget everything admitted by the other, is very curious to note. Dr. Jekyll was no more distinct from Mr. Hyde than Sir Arthur " A " is from Sir Arthur " B."

I have not the space, here, to deal with all the wild assertions made by Sir Arthur " B," but it is typical of him to declare that there is no evidence that our Lord rose from the dead. Sir Arthur " A," like any real scientist, would realise that a serious opponent of the Resurrection must not only deny it in general terms—which any unthinking person can do—but must offer some reasonably possible alternative explanation of the facts. Such an explanation the most subtle intellects opposed to Christianity have notoriously failed to produce; and a mere dogmatic generaliser like Sir Arthur " B " is the last person likely to achieve the feat. It is easy to show that, as Sir Ambrose Fleming says, the Resurrection of our Lord is the best attested fact in all human history; and the God Who could raise His own Son from the dead could also literally create.

Lecturer's Reply.

In reply to Dr. Morton, the name *Homo javensis* or *H. soloensis* is, I believe, that given to the thigh bone and teeth which form part of the finds which most authorities include in *Pithecanthropus*. The brain-case is very unhuman, while the thigh is very human, and, as some of the fragments were found as much as 20 yards apart, some authorities believe that the former is part of an ape and the latter part of a man. This view is strengthened by the fact that

remains of very ancient big-brained men have been found in Java, not far from Trinil—the Wadjak men. Indeed, these were found by Dubois, the discoverer of the *Pithecanthropus* fossil, but, although he proclaimed the discovery of the last immediately on his return from Java in 1924, he did not make any mention of the Wadjak fossils until twenty-six years later!

Arboreal animals are less liable to meet with death accompanied by immediate burial and so become fossilised than are creatures that keep to the ground. Thus, while fossils have been found of nearly 80 per cent. of living genera of hoofed animals (Ungulates), only 40 per cent. of the Primates are known as fossils, while in bats the percentage is less than 20.

Perhaps I may be permitted to add the following touch to Dr. Morton's mention of *Hesperopithecus*. At the time of the discovery of this tooth, Bryan was fulminating in the U.S.A. against the iniquity of teaching school children that evolution is a fact. Professor H. F. Osborn made the discovery of this tooth the occasion of rebuking Bryan; he said: "The earth spoke to Bryan from his own State of Nebraska. The *Hesperopithecus* tooth is like the still small voice; its sound is by no means easy to hear . . . this little tooth speaks volumes of truth." Osborn, however, misheard its message!

That was not the first time a scientific man had made a mistake in assigning a solitary tooth to the proper species. In 1840, Owen definitely said that a molar found in an Eocene bed of Suffolk was that of a *Macacus* monkey; in fact, it was that of an extinct horse. It is important to bear this in mind, in view of the fact that a number of Primate fossils consist of solitary teeth.

I agree with Mr. Miller that it is absurd to assume that all the cultures of which traces have been discovered in any locality are of different periods. Were this a fact the great majority of convenient caves occupied by men should exhibit evidence of occupation by men of each culture. In fact, rarely does a cave show signs of more than four successive human occupations. The anthropologist, unlike the geologist, cannot call in erosion to explain missing deposits in any cave.

Captain Acworth's correspondence with the B.B.C. illustrates the manner in which those who believe in evolution dominate the

usual organs of publicity; it is not easy for their opponents to get their views before the public.

I agree with Captain Acworth and Mr. Collett that the teaching of evolution as a fact in schools is doing much harm. All Evolutionists, however, do not assert that their doctrine is incompatible with the teaching of the Bible; many, notably the Modernist theologians, attempt to reconcile the two. Quite apart from Biblical teaching, in my opinion, Evolution can be demonstrated to be a false doctrine on purely scientific grounds.