

# OUR PREHISTORIC ANCESTRY

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EVER since the publication, two generations ago, of Darwin's monumental *Origin of Species*, the quest of the original progenitor of the human race has, with an increasing degree of power, taken hold not only on the imagination of the savant but on that of very humble folk as well. To trace the branchings of one's family-tree for even a half-dozen of generations is a sport of rare fascination, but to pursue the Ancestor through the ever-receding millennia of human existence is surely the most stimulating and momentous occupation to which the faculties of reason and imagination may well be applied. It would thus appear that at the present time the mind of man is making a supreme and tremendous effort—despite the earnest obstructiveness of such people as Mr. W. J. Bryan and the Kentucky legislators—both to reach back to those things which are behind and to press forward to these things which are before, striving scientifically to explore the dim and misty regions of prehistoric time, as well as to draw aside the veil which shrouds from us our future lot in the spiritual realm.

The generation that immediately followed Darwin heard much of a creature popularly designated the Missing Link. Biologically speaking, he was the hypothetical ancestor from whom the human family was descended, and who in turn connected man with his purely animal progenitors. If the theory of evolution were to be accepted in its entirety, the existence of such a Link, at some period in the Age of Mammals, would have to be assumed. Curiously enough, the belief of the "man on the street" was that this sub-human type, half man and half monkey, was not to be sought in some glacial deposit or loess-bed, but that he was still to be found wandering somewhere on the face of mother earth. Undoubtedly he was elusive; and he had never been met by any of his descendants. But, notwithstanding, there was nothing to show that he was not concealing himself—like some naughty sprite—in an African jungle, or perhaps in the vast unexplored forests which invest the upper waters of the Amazon. Nor has the spirit which prompted this belief yet become totally defunct, even in scientific circles. Only two years ago an expedition was despatched into the wilds of

Africa to search for a living Brontosaurus, and more recently a party has left Buenos Aires with the hope of securing a specimen of the Plesiosaurus in some remote Patagonian lake or river. And yet those monstrous reptiles are pretty generally supposed to have become extinct several millions of years ago.

Later we had the Primitive Man, the child of the sociologist and the psychologist. He occupied a position a step above the Missing Link, but was still in possession of many unpleasant characteristics. He was hairy and ill-formed: he lived in a cave: he seems always to have carried a club or stone hatchet: he was uniformly ill-natured, harsh towards womankind, and ever warring with his fellows. He fought, successfully or otherwise, with all sorts of prehistoric monsters including the Brontosaurus and Plesiosaurus. His life-history was written so frequently, with such minutiae and wealth of detail, that often we seemed to be in danger of ultimately knowing more of his activities than we did of the men of our own day. So, presently it began to dawn upon humanity that knowledge of the Primitive Man was being multiplied too rapidly and in too great volume for the safety of Existing Man. It became manifest that the thing had got beyond the control of the psychologist and sociologist, and that very low fellows indeed were busying themselves, in their moments of leisure, in adding a chapter or two to the history of the Primitive One. It all became too absurdly easy. Finally, the Primitive Man was seized upon with avidity by popular novelists of the Jack London type. In the relentless grasp of these writers he suffered things unspeakable, and soon Calls of the Wild were re-echoing far and wide. But, fortunately for all concerned, the agony was soon at an end; the Primitive Man was shortly done to death, and passed from the realm of human experience, hooted and derided even in his death-throes.

Fortunately, however, other scientists—men more humble, patient, conservative and observing than the originators of the primitive sociological systems—had meanwhile been at work. This body of men refused to be stirred in the slightest degree by the ever-increasing volume of quasi-knowledge which was in process of dissemination by their more brilliant and imaginative colleagues. They preferred to substitute toilsome research for facile speculation. They collected ancient flints and skulls; they examined, with extreme care, the various strata of the earth's surface; they worked over the skeletal remains of prehistoric mammals, birds and reptiles; and they attempted to build up, by degrees, a sort of framework of the scheme of things into which Man and his early activities might ultimately be fitted. As early as 1863, Sir Charles Lyell had laid a

secure corner-stone in the publication of his studies in the geological evidences of the antiquity of man, and soon the geologist came to be regarded—within a small circle at least—as the official historian of the activities and movements of ancient man. Two years later, another solid block was placed in order by Lord Avebury<sup>1</sup> (then Sir John Lubbock), who approached the problem from a different standpoint and sought to trace the development of man from the point of view of the archaeologist. As Sir Arthur Keith puts it: “He sought to follow the human army to its beginning in the remote past by tracing the possessions it had discarded while on the march.” More recently there have been developed the schools of the palaeontologist and the anatomist, which have for their respective provinces the study of prehistoric animals and that of the anatomical structure of primitive man. It has long been recognized as a fact that the ultimate value of our knowledge regarding man in the past depends upon the harmonious co-operation of these four departments of human research—with some assistance, to be sure, from the psychologist and the sociologist.

The successors of Lyell have maintained the position established for them by this eminent geologist. The writings of such men as Boyd Dawkins, W. J. Sollas, G. F. Wright and James Geikie have done much to dispel the ancient shadows, and the antiquity of man, in the view of the geologist, has been gradually revealed to the world. Likewise, during the closing decades of the nineteenth century, a distinguished body of archaeologists had been developing, notably in France, and the researches of the scholars Cartailhac, Boule, Breuil and a host of others have led to the formation of an elaborate scheme of classification of the “artifacts”—implements of bone and ivory, but mainly stone—of early man. Lord Avebury had already introduced the terms *Palaeolithic* and *Neolithic*, descriptive of the cultures in which the stone weapons and tools were chipped and hammered only, and those in which they were ground and polished. The French archaeologists, however, advanced many steps beyond this early classification, and introduced a nomenclature containing such terms as Chellean, Acheulian, Mousterian, Aurignacian, Magdalenian, etc., each of which marks a progressive stage of evolution in technical processes from the earliest times. These are all of Quaternary age. Still earlier flints, discovered in deposits which date back to the Tertiary period, have long been known; to them—in lack of fuller knowledge—the name *Eoliths*, or Dawn-stones, has been applied. It has for decades been a moot question whether the history of the human race has extended back beyond the Quaternary

1. *Prehistoric Times*, 1865.

period, and it has often been debated in learned societies whether these eoliths are the actual works of men's hands, or have merely assumed their present form from the erosion caused by geological disturbances. The latest authorities, however, are more and more inclined to regard them as real artifacts.

Meanwhile skulls and leg-bones and other osseous fragments of the human earthly tabernacle had been coming to light, mingled with the remains of early mammals such as the woolly rhinoceros, several species of elephant, the cave-bear, the sabre-tooth tiger, and many less formidable denizens of the early world. Curious skeletons are those of primordial man, with their massive jaw-bones, peculiar teeth, beetling brow-ridges and long, narrow brain-pans. All through the nineteenth century they were being unearthed, here and there, from the British Isles to far-off Java. At first they merely excited the curiosity of scientists, and it was only when they came under the careful scrutiny of the anatomists of Germany such as Schwalbe, Klaatsch and Schoetensack, and the English savants, Drs. Arthur Keith, Elliott Smith and Smith Woodward, that definite progress was made in our knowledge concerning the physique of primitive man. A distinct advance was marked by the publication, in 1915, of Dr. Keith's *Antiquity of Man*, a work which presents essentially all that was known up to that time regarding primitive man's anatomical features, and which embodies also much of the author's own researches. But the book is highly technical in parts, and the layman finds a difficulty, here and there, in groping his way amid the mazes of the Basle Anatomical Nomenclature.

Up to a point of time less than a decade ago, exact knowledge concerning the findings of science on our primitive ancestors was confined largely to a somewhat narrow circle of the learned. But in 1915 the world at large, simple and gentle, ignorant and well-informed, was taken into the confidence of those who held a key to the mysteries. In that year was published a work which has since become a classic—the *Men of the Old Stone Age*, by Professor H. F. Osborn of Columbia University, New York. The book first became known to many through a popular review written in its praise, in the *National Geographic Magazine*, by the late Theodore Roosevelt. The season of its publication was a highly opportune one. The coming of the Great War had interrupted archaeological investigations (one of the most famous of the French archaeologists lost his life early in the campaign), and seemed to preclude the possibility of their resumption for a long time to come. It was thus the proper moment for stock-taking of present resources. So, while most European scholars were otherwise engaged, Professor Osborn, a

veteran in biological studies, proceeded to assemble within a bulky volume a comprehensive account of all that was known up to that time regarding the Palaeolithic Period. He drew from all available sources—geographical, geological, archaeological, palaeontological and anatomical—and worked the whole, with great industry and admirable judiciousness, into a form comprehensible to the many as well as of value, academically speaking, to the few. So, from 1915—a time when Jack London and the sociologists had begun to relax their efforts—even the layman knows something of a definite nature regarding his prehistoric forefathers. It may be, however, that the novelist has been but recruiting his forces for a fresh campaign. Charles G. D. Roberts, in *The Morning of Time* which has lately appeared, reverts to the good old theme of "Before Adam."

By the time of the writing of the *Men of the Old Stone Age*, the studies of anatomists had reached a stage where several early human or sub-human types had been differentiated. These we may note in their probable chronological sequence:

1. The PITHECANTHROPUS ERECTUS, or "Upright Ape-man" (upright in the physical sense only). This extraordinary creature, a veritable Missing Link, flourished as much as perhaps a half million of years ago. The race, however, is represented by a single skeleton, or rather by a skull-cap, or *calvaria*, and a thigh-bone, discovered in 1891 near Trinil, a village in the island of Java. Scanty as are the remains, the genius of the anatomist, which to the layman appears well-nigh miraculous, has revealed much as to the probable potentialities of the owner. He could walk erect; his height was, seemingly, little lower than that of the man of to-day; and he may have been able to utter monosyllabic sounds. But his brain was of a decidedly low and simian order; for the cranial capacity must have been below 900 c. c. Likewise, the prefrontal region, which contains that portion of the brain which controls the higher emotions and intellectual qualities, is wholly undeveloped and sub-normal. The great, projecting supra-orbital ridges are strongly reminiscent of the gorilla or other anthropoids.

2. HOMO HEIDELBERGENSIS, the race of Heidelberg, separated from us by a span of perhaps a quarter of a million years, the only survival of which has been discovered in the sands of Mauer, ten miles from Heidelberg, Germany. Dr. Arthur Keith, in his *Antiquity of Man*, graphically describes the circumstances of the find. The old scholar, Otto Schoetensack, had visited the ravine in which the remains were eventually found almost daily for a period of twenty years. It had long been recognized as a probable grave for

the bones of early Pleistocene man; at length, in 1907, the long quest was rewarded by the discovery of a primitive jaw-bone some 75 feet below the surface of the soil. Even this single fragment of the human frame tells much. The mandible is extraordinarily heavy and massive, much more so indeed than is the jaw of the raw-meat-eating Esquimau; but the chin is bevelled backwards like an ape's, and the expression of the owner must have been bestial in a marked degree. Strangely enough, on the other hand, the teeth are not simian in structure; indeed, they are less monkey-like in respect to length of root and dimensions of pulp-cavity than are those of moderns. The same thing is true in regard to the dental structures of more than one prehistoric race of men, and to us, who still know so little of evolutionary processes, it would almost appear that nature had here and there experimented, as it were, in the introduction of certain mutations, only to revert later on to the earlier type. Diet, however, must not be left out of consideration.

3. EOANTHROPUS. The "Dawn-man" presents the greatest problem of all primitive skeletal remains. At the time of the publication of the *Men of the Old Stone Age*, Osborn was willing to grant to this anomaly an antiquity of not more than 150,000 years, but latterly he has recanted, and now follows the lead of the English scholars who would relegate him to a position ante-dating the Heidelberg man, and perhaps as far back in the scale of time as even the Javan Ape-man. The remains of the only Dawn-man yet discovered—a skull and mandible in fairly good preservation—were found in 1912 near Piltdown in Sussex. The bones present to the anatomist a curious problem, showing as they do a most perplexing blend of human and anthropoid features. The jaw (which some maintain does not belong to the skull, but is to be associated with some other species of the primates) is ape-like in structure; it is chinless, as is the Heidelberg mandible; and the teeth are savage-looking and projecting. But the great brow-ridges of Pithecanthropus have largely disappeared; and the skull-case is sufficiently roomy to contain a small-sized Caucasian brain. But here and there the ape creeps out. Notably, the parietal bones slope inwards above, leaving the skull with a poor and lowly arch. In this unparalleled mingling of the animal and the human types, we see perhaps more clearly than in any other surviving specimen the characteristics and qualities of an ideal Missing Link.

4. HOMO NEANDERTHALENSIS. When we advance to the time of this newcomer, Neanderthal Man, forty or fifty thousands of years ago, we begin to find our feet on something like solid ground. Whereas we can point to but a single set of skeletal remains—and

these too in a most fragmentary condition—of each of the earlier races of mankind, the Neanderthal people is known to us from a relatively large number of skulls and complete skeletons, which have been found here and there in central and southern Europe. This race of troglodytes seems to have ranged far and wide, and the remains of their culture, the Mousterian, have been preserved to us in great quantities. The Neanderthals, it is manifest, were a low-set and ugly race, with thick clumsy necks, a shuffling gait, and of a scarcely erect attitude in walking. In many respects they seem to stand lower in the scale of civilization than do the Piltdown men. True, the formation of the jaw is somewhat superior, but the vast supra-orbital torus of *Pithecanthropus* again asserts itself; the rear-brain is large, but the prefrontal region undeveloped; and if we are to put faith in the modern reconstructions of the Neanderthaloid head, we must assume that the face had an unpleasantly vacant, stupid and bestial expression. Mr. H. G. Wells has made the interesting suggestion that in this squat, hairy creature, long extinct and forgotten, we have the prototype of the "bogey-man" of European folk lore and popular superstition.

5. *HOMO SAPIENS*. The first "Reasoning Man" appears, and now we begin to approach relatively modern times. With the coming of his first representative, Cro-magnon Man, we reach a period perhaps not more than 25,000 years removed from us. This race, like the Neanderthals, appear to have traversed most of the European continent, and presumably displaced, or more likely exterminated, their hairy predecessors. They were a tall, finely-formed and powerful race of men, averaging, it would appear, nearly six feet in height. It is conceivable that in this fact we ought to look for the basis of the traditions of the primordial race of giants celebrated in the mythology of so many nations. The Cro-magnons probably resembled in physique the modern Sikhs of India or perhaps the best of the American Indian tribes. Among them art, in the ordinary sense of the word, seems to have originated, and the interior of many of their grottos in southern Europe is ornamented with silhouette drawings and with fine polychrome paintings, usually of animals. These artistic efforts of theirs find a parallel in the art of the modern Bushmen—simple and primitive in nature, but marking an intellect of much ingenuity and activity.

There is some reason to believe that, mingled with the Cro-magnons, was another race, of Negroid type, the so-called Grimaldi. But two skeletons, however,—in the Riviera—have as yet come to light; and some eminent authorities consider the Grimaldi people to have been only an off-shoot from the main Cro-magnon stock. Other

races differing scarcely at all, anatomically, from modern men succeeded these, and served to bridge the interval during which Palaeolithic becomes merged with Neolithic. The new stage of culture which is comprised within the latter term has recently been admirably sketched by Professor J. M. Tyler,<sup>1</sup> who pictures it as an era of peace and plenty, of simplicity and happiness, one which would vividly recall the "Golden Age" and "Garden of Eden" of early tradition and story. His description differs *toto caelo* from the conception of Kipling:—

In the Neolithic Age savage warfare did I wage,  
For food and fame and woolly horses' pelt.

While the relation of one primitive skull to another was long in obscurity, anatomists have finally reached the almost unanimous conclusion that in the bones of Pithecanthropus and the men of Piltown, Heidelberg, and Neanderthal, we see the earthly remnants of four distinct sub-human types which represent different *species* and not *races* of men. They must all have become extinct several millennia ago. On the other hand, in Cro-magnon man and his contemporaries we recognize the modern type, the species to which all subsequent races and the present inhabitants of the world belong. As regards the original habitat of the human family, current orthodoxy persists in placing it in central or southern Asia whence, it is believed, man entered Europe in a series of waves of migration. In February, 1921, a great expedition headed by the distinguished explorer and naturalist, Roy Chapman Andrews, was despatched from New York to search for, *inter alia*, traces of human and sub-human prehistoric remains amidst the uplands of India and western China. With what degree of success the party has met has not yet (June, 1922) been officially announced. It may be noted *en passant* that immediately after the publication of Osborn's work a skull of Pleistocene man was unearthed in Australia, and a primitive *calvaria* at Boskop, Transvaal. But the proper position of these in the scheme of the ascent of man does not seem to have been yet made altogether clear.

The layman of North America first learned something really authoritative regarding the prehistoric men of the American continent through an important study published in 1919 by Dr. W. H. Holmes.<sup>2</sup> His view is that both North and South America were uninhabited by man till Neolithic times, and that at a period per-

1. *The New Stone Age in Northern Europe*, 1921.

2. *Handbook of Aboriginal American Antiquities: The Lithic Industries*. Reviewed by the present writer in the *New York Times*; *Book Review and Magazine*, May 15, 1921.



haps 10,000 years ago the ancestors of the aborigines began to make their way into the country by crossing Behring Strait. His attitude towards American questions is distinctly conservative. He regards all the original inhabitants—i. e., the pre-Columbian—as being of one race or of closely allied races; and he refuses to grant a high antiquity to any of the skeletons discovered in America. But it may be that Dr. Holmes errs on the side of extreme caution. At least one primitive skull, it has been steadfastly maintained, has been resurrected from out a bed of Tertiary gravel, and a recent discovery—not yet officially announced—of a fossilized man in a somewhat recent geological formation in the Southern States may totally upset Holmes's theory.<sup>1</sup> It seems a mistake for even an expert to show himself too dogmatic on such a point; there is still, it must be noted, an enormous and almost untouched field for exploration in South America.

Reverting to the story of ancient man in Europe—the past year (1921) has been distinguished by the publication of two works of unusual importance dealing with this department of knowledge. The first, from the pen of the brilliant Dublin archaeologist, Professor R. A. S. Macalister,<sup>2</sup> contains an attractive presentation of the many facts that have been for some time known to scholars. But the author (strangely enough, it would seem, for one of his race) is, like Dr. Holmes, an avowed conservative, and denies a high antiquity, as the term is now understood, to any of the human or sub-human species.

The second work,<sup>3</sup> by an English physician Albert Churchward, presents hypotheses which differ so radically from those hitherto advanced that, whatever their ultimate value may prove to be, they surely deserve serious consideration. The methods of Dr. Churchward concern themselves not so much with a close examination of minutiae as with the broadest imaginable outlook. He calls to his aid the sciences of astronomy and philology as well as geology; he investigates the field of totemism and magic; he examines sign-language, cicatrization, primitive customs and ceremonial dances. His researches in Egyptology, likewise, seem to have been profound, though one is naturally somewhat staggered by his assertion that there is evidence that the Egyptian priests kept records for 258,000 years! In 1915 Dr. Arthur Keith had written: "The glacial phases afford the student of ancient man a series of milestones to mark his journey into the past. Unfortunately, we are not certain of the exact number of glacial phases, and, what is still more unfortu-

1. The most difficult question to answer is—Why do these skeletons possess somatological features similar to those of the modern Indian?

2. *A Text Book of European Archaeology*. Vol. 1; *The Palaeolithic Period*, 1921.

nate, we are not yet in a position to offer a complete explanation of their occurrence and recurrence." A generation ago, Drayson postulated a secondary rotation of the earth as the possible primary cause—a rotation completed in a cycle of 31,000 years. Churchward, though he expresses a profound admiration for Drayson, whom he considers the greatest astronomer since the days of the ancient Egyptian priests—with whom died almost all wisdom—propounds a somewhat different theory. In his view the glacial phase recurs approximately every 26,000 years—the Great Cycle, or the time required for a complete revolution of the Sun. In the Mosaic narrative of the Flood he finds an echo of the tremendous impression produced on early man by the periodic melting of the glacial snows. Furthermore, in some 10,000 years or thereabouts, the ice-caps are destined once more to advance, and the author speaks—rather gleefully it would seem—of the time to come when the great buildings of London will be crushed to atoms under millions of tons of ice!

Dr. Churchward does not subscribe to the orthodox theory of the Asiatic origin of man, but believes that man first developed, a pigmy in form, two million years ago, in the region of the equatorial lakes at the headwaters of the Nile, and that the children of this diminutive creature gradually spread over the whole earth. The Ape-man of Java was merely a pigmy, and the modern pigmy-race, which is found in Africa, in South America and in the Far East, is a direct descendant without radical mutations. It is undoubtedly amazing to find the pigmy-tradition still surviving in the folk-lore of peoples as far north as even Scotland. Can the gnome and the elf stories have here had their origin? Next came the Nilotic Negroes, represented prehistorically in the races of Piltdown, Heidelberg and Neanderthal, and having many modern descendants. Then the Hero-cult Negro or Cro-magnon Man, a people still found in great numbers in central and western Africa. Presently there came from Upper Egypt three successive waves—the Stellar Cult, the Lunar Cult and the Solar Cult peoples, the last of which were the progenitors of modern, civilized man. From the biologist's point of view, the most radical aspect of Dr. Churchward's theory is that wherein he totally ignores the probability of the existence of different species of man in early times. To him all men are of one blood and one species. With regard to the populating of the American continent, his hypothesis is altogether irreconcilable with that of Holmes, as he considers that some of all the various tribes which left Africa from time to time ultimately reached the Americas, and that too by different routes. A new theory of the displacement

of continents—with which Churchward seems to be unfamiliar—would appear to lend strong support to his opinion. A recently-published work by the German scientist Wegener<sup>1</sup> casts doubt upon the idea of there being any such thing as a *terra firma*. The earth-masses, so Wegener believes, are merely vast, slow-moving islands, which are supported by a denser but semi-viscous substratum. Originally Africa and America were joined, and they have been for ages slowly drawing apart. Extraordinary as the theory is, it is nevertheless true that in a period of only eight years a small but noticeable increase in the distance between the observatories at Greenwich and Cambridge, Mass. has been recorded, while the drift of Greenland is appreciably greater. It is easy to see, if this hypothesis were to be established as a fact, what a marvellous influence it would have on ethnological studies.

Dr. Churchward's book is surely one of the most extraordinarily constructed volumes that has ever come from the hands of a publisher. It consists of several thousands of more or less disconnected notes, interspersed with fierce diatribes directed against "Oxford professors and other learned people." Were the whole to be rearranged and systematized, it would appear to the layman at least that the argument advanced should prove one of remarkable potency. The amount of recondite knowledge possessed by the author is astonishing, and his theories ought certainly to meet with careful and thoughtful consideration. In relation to his contentions regarding the pigmy-race, it may not be irrelevant to quote from the latest writer on the pigmy, Dr. L. J. Vanden Bergh.<sup>2</sup> "Their mouth," he says, "is wide and reaches almost to the centre of their cheeks, giving their face in profile a monkeyish expression. The receding nose emphasizes this feature through its almost flat appearance, with widely extended nostrils. The upper jawbone stands out like a round façade, protruding over the under jaw, and to perfect the apish appearance their foreheads are low and slanting in the extreme. . . . . They live as close to the monkey as it is possible for human beings to do. They eat the produce of the forest; they shelter under trees and boughs; they make huts of the twigs and leaves of the forest; they need no open space or sunshine; and they are as happy without cover or shelter as they are under it." This is surely suggestive, and it may be added that the average cranial capacity of the pigmy is but little greater than that of *Pithecanthropus*. It may be, too, that the Neanderthal race is not yet extinct. The present writer has recently examined a photograph of the head,

1. *Die Entstehung der Continente und Ozeane*, 1920.

2. *On the Trail of the Pigmies*, 1921.

in profile, of a famous American football player, and is able to testify that the lines of the skull were distinctly and definitely Neanderthaloid!

Hardly had the books of Macalister and Churchward reached this country when, almost simultaneously, two very remarkable discoveries of early human remains were announced. In Rhodesia, Africa, the operators of the Broken Hill Mine had run a shaft laterally through the base of an ancient cave, and there they accidentally unearthed a human skull in fine preservation, but lacking the lower jaw. The fossil was covered by tons of animal bones of many species which had blocked the mouth of the cave, and everything pointed to extreme antiquity in the case of this find. The skull was forwarded to the British Museum, and has been carefully examined by Drs. Keith and Woodward who have recently published a preliminary report. It is exceedingly massive, with large brain-case and enormous face-bones. Even the formidable Heidelberg mandible, it is announced, seems too puny to fit it. The brow-ridges are prominent and the forehead is retreating. In short the skull is Neanderthaloid in character, though the authorities differ as to whether it represents an early or late Neanderthal type. No doubt Dr. Churchward would pronounce it the skull of an early Nilotic Negro. Certainly his theory does not suffer from its having been found in this out of the way place, to which it had not been previously known that the Neanderthals penetrated. A notable feature is the decayed teeth which had, in the lifetime of the owner, been here and there attacked by caries so ruthlessly that at one point at least the malady had even reached and affected the jaw-bone. This, however, is nothing new in connection with the teeth of primitive man, and, manifestly, not all our dental tragedies are to be traced to the source of advanced civilization and luxurious living.

Near Ipswich in Sussex, that territory so fruitful in prehistoric discoveries, a well-preserved jaw-bone and certain cranial fragments have been recovered which are perhaps the earliest remains of man or his ancestors yet revealed. The bones lay, surrounded by the artifacts of the deceased, in deposits which are definitely known to be Tertiary. Thus, the much-debated question of man's existence on earth as early as Tertiary times is, in all probability, finally set at rest. From the somewhat meagre accounts which have as yet reached us, it would appear that the mandible<sup>1</sup>, though long and massive, nevertheless presents but relatively few simian traits. Hence, the contention of the English anatomists that the brain of early man was fully developed before his face had lost its bestial characteristics would hardly seem to be borne out in this instance,

1. This jaw-bone, which was discovered some years ago without its value being appreciated, has, it appears, been lost and is known only by a drawing.

but the point will bear extended investigation.<sup>1</sup> The potentialities of this Sussex Man are thus summarized by Professor Osborn: "He was certainly capable of walking in an erect position, having a hand and a foot fashioned like our own, also a brain of sufficient intelligence to fashion many different kinds of implements, to make a fire, to make flint tools which may have been used for the dressing of hides or clothing." The enormous importance of the Ipswich discovery lies in the fact that this new man, who lived long before the Glacial Epoch, must ante-date by thousands of years the Missing Link of Java. His *floruit* has been placed tentatively at a time fully a million years ago, and thus, for the time being at least, we seem justified in transferring the Garden of Eden from Asia to the British Isles.

And so the search goes on—the great quest which, in the nature of things, can never end until the earth, as the astronomer believes, grows cold and dead, or till, as the Apostle Peter postulates, "the heavens shall pass away with a great noise, and the elements shall melt with fervent heat, the earth also and the works that are therein shall be burned up." It is manifest that we are standing as yet but at the *prima limina* of this house of knowledge, and that a vast fabric awaits our investigation. It therefore behoves the searcher to be sober and vigilant, accurate in employment of methods, and sparing of hypotheses. In course of time, doubtless, some genius will arise—some second Darwin or Wallace—whose intellect will be capable of holding and appreciating at their true value a myriad of apparently unrelated facts. From such an one will come some great generalization which will, as it were, unite all in one. Then, and not till then, shall we be brought face to face with the true light.

1. Keith, however, had some years ago suggested the possibility of *Homo Sapiens*'s having twice appeared on the European stage, the interval being occupied by the action of the sub-humans.