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SYMPOSIUM COMMEMORATING THE HUNDREDTH ANNIVERSARY OF THE DISCOVERY OF NEANDERTHAL MAN

I. NEANDERTHAL MAN AND THE DAWN OF HUMAN PALEONTOLOGY

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IF THE record of the rocks had never been, if the stones had remained closed, if the dead bones had never spoken, still man would have wondered. He would have wondered every time a black ape chattered from the trees as they do in the Celebes where, of old, simple forest people had called them ancestors of the tribe. He would have wondered when he saw the huge orangs pass in the forest, their bodies festooned with reddish hair like moss and on their faces the sad expression of a lost humanity. He would have seen, even in Europe, the mischievous fingers and half-human ways of performing monkeys. He would have felt, aloof in religious pride and the surety of revelation though he was, a vague feeling of unease. It is a troubling thing to be a man, with a very special and assured position in the cosmos, and still to feel those amused little eyes in the bush —eyes so maddeningly like our own.

Wherever man has been aware of monkeys, they have demanded explanation; without them we might regard ourselves as unique in the universe. With them appears the sole convincing evidence of man's relationship to the lowly world about him. The rumor of apes had passed far and wide even before the days of the great voyagers. Nor is it surprising to find, even in a Europe which, for over a thousand years after the Greek philosophers, eschewed the idea of organic change, that folklore and speculation arose around the living primates, so that parts of the Christian world evoked a second, a "black" creation to account for them.

In this view the Devil and his demon associates decided to attempt a creation in imitation of the work of God. When the diabolical rites were completed and the devil gazed upon the being which he had created it was found not to be human, but an ape. Great though Satan's powers were, he could not implant a soul in his abortive offspring. The ape remains, therefore, in the words of H. W. Janson (1952), a "kind of indistinct echo or reflection of man."

But whether we emphasize the tale of the black creation, or turn to various other Christian or pagan legends of differing character, we can observe one fact eternally present wherever apes are known: they are recognized as in some manner related to man, or as being deviant men or transformed men. *Naturae degenerantis homo, figura diaboli, homo sylvestris*—whatever they are named,

whatever the legend of their relationship to man, they travel down the ages with him in a companionship which is inseparable. It is as though man had a shadowy companion, a psychological Doppelgänger who had remained in the forest and yet lingered along its edge to mock his civilized brother.

His shape is confused and often seen unclearly. Sometimes it is the ape, sometimes it is an untamed wild man with a club, a lurker in woody dells and caves. Sometimes the creature moves across the modern stage in a traditional harlequin patchwork coat of leaves and tatters. Or he is the hermit with strange wisdom in a cave. He is the Abominable Snow Man whose footprints were pictured as late as yesterday's newspaper. Western civilization has never quite forgotten this hairy and primordial shadow. Compounded, perhaps, of man's suppressed subconscious longings, he is ape and man and dancing bear. He is all that remains of the lost world of the trees; of the time before the cities.

We shall see that something of this creature emerges in the early interpretations of Neanderthal man, and we shall also observe that the skull in the little cave by the Neander served as a kind of prism or lens through which passed at midcentury, a hundred years ago, a curious conglomeration of pre-Darwinian beliefs which, transmogrified and altered, entered the world of the Darwinists. Nothing, in short, so clearly reveals the transitional nature of Darwinian thinking as the treatment accorded this single human fossil. To define and evaluate the currents of thought which swirled around that heavy-browed calvarium one must examine at some little length the beliefs about man existing in the first half of the century, and then compare those beliefs with those which obtained after the publication of the *Origin of Species* and the *Descent of Man*. Strangely enough the alterations will not be as great as we commonly assume.

Space will not permit us an exhaustive pursuit of each thought element to sources in some cases more remote than the eighteenth century. For this reason we shall begin by an improvisation which may enable us to grasp quickly a key distinction between two approaches to the evolutionary problem. The one involves the comparative morphology of the living, the other the historical morphology of the dead. Both are based upon the comparative anatomy which was brought to such heights of perfection under the guidance of Cuvier.

The first used of these two methods, or ladders into the past, as we might call them, is the taxonomical approach to life which in its eighteenth century origins arose largely out of natural theology—the Scale of Nature concept which has been so extensively examined by Professor Lovejoy in his well-known book, *The Great Chain of Being* (1936).

Theologically, it was largely assumed in the eighteenth century that creation had been instantaneous, but that organisms were arranged in a continuous chain which anatomically led to man as the crowning glory of earthly life. Such views led to the search for connections, for the links between living forms. Taxonomy and comparative anatomy were, in other words, being unconsciously promoted by the religious philosophy of the times. Seeming gaps in the living scale of life were often assumed to be filled by creatures in unknown portions of the world. It was not yet clear, either geologically or paleontologically, that the world was old, or that many of its life-forms had vanished long ago; the doctrine of Special Creation held the field.

If one examines the Scale of Nature concept carefully, however, it can be observed that this linked chain of development implies a position for monkeys and anthropoid apes as standing next to man on the anatomical ladder. The only thing needed to transform the Scale of Nature idea into an evolutionary scheme is to introduce within it the conception of time in vast quantities, and the further notion that one form of life can give rise to another, that the links, in other words, are not fixed but can move their positions on the scale. This theory, the dawn of a truly evolutionary philosophy, began to come in toward the close of the eighteenth century, but its supporters constituted at that time a small and largely ignored minority.

As one examines the writings of the early evolutionists, in so far as they touch upon man, it is necessary to remember that human fossils of any sort were undiscovered, and that even the possibility that forms of life *could* become totally extinct was still under debate. It is not surprising under such circumstances that the early evolutionists tended to regard the orang as a possible existing human "ancestor" or genuine *Homo alalus* who needed only speech and the refining influence of civilization to become a man.

The higher primates, actually as yet little

studied but reported upon by the voyagers with much anthropomorphic embellishment, come close to complete humanization, only a grade below the Hottentot. African kings were said to have guards who resembled monkeys (Ritson, 1802) and, in many of the early descriptions, it is apparent that the distinction between man and ape is extremely blurred. Amongst the Australians, writes one chronicler, "there was one man who, but for the gift of speech, might very well have passed for an orangoutang. He was remarkably hairy; his arms appeared of an uncommon length; in his gait he was not perfectly upright; and his whole manner seemed to have more of the brute, and less of the human species about him than any of his countrymen. The gift of speech, however, which he must, if at all, have acquired in his infancy, will not alone prevent his actually being what he might very well have passed for." (Cited by Ritson, p. 23).

The writer, in other words, implies in this last remark that speech is an invention which could be acquired by an ape. Natives strikingly different in appearance from the white man were being arranged on a kind of evolutionary scale as intermediate links between the great apes and man. Thus, though between the first decade of the nineteenth century and the discovery of Neanderthal man in 1856, there had been a vast increase in our knowledge of the fossil past, nothing had been learned of man save the likelihood of an antiquity extending into the glacial period.

The comparative anatomy of the existing primates pointed to some close relationship with man, but it was still only possible for the evolutionist to compare living man with living ape and the living races. So far as man was concerned, the ladder into the past was still the taxonomic ladder all of whose rungs were still in existence. Important though this approach has been in revealing the secret of organic change, it is bound to be, without the checks provided by paleontology, in some degree mythological and figurative.

Lacking adequate human materials, the attention of the Darwinists was necessarily confined to the depths of the Bornean and other tropical rain forests, partly because of the known great apes that haunted their depths, but also partly because of the feeling that other more human "anthropoids," true "missing links" might still be lurking thereabouts.

A typical expression of this view actually precedes the publication of the *Origin of Species*. It occurs in Chamber's Journal in 1856 and reveals once again the popular interest in the orang (Anon., 1856). The anonymous author, after commenting that the animal may possibly be taught to speak, ventures a remark which reveals his concern with living missing links in the human phylogeny. "The Mias papan," he ventures, "may form only the external link of a chain, the other extremity of which lies hidden in the wild solitudes of Borneo." "We would therefore," he urges, "suggest to philosophers the desirableness of giving a new direction to their researches, and trying what may be done in the regions of the further east." Toward the close of the nineteenth century those regions would yield Pithecanthropus, but one hundred years ago it was still possible to seek for a living connection between man and the great anthropoids.

It may thus be seen that prior to the discovery of the Neanderthal cranium, and prior, also, to the publication of the *Origin of Species*, the rising interest in the geological history of the planet had done nothing but extend suspicions of man's antiquity and lead some individuals to anticipate a relationship between man and the great primates. If man was really an educated ape who had learned to speak and wear clothes, some degree of time must be assumed in the process, but this time element still did not seem to demand the assumption of a long chain of extinct ancestral hominids.

As evolutionary and geological speculation intensified past mid-century, Fühlrott and Schaaffhausen announced the discovery whose hundredth anniversary we are celebrating, namely, that of the first human cranium recognizable as lying outside the known limits of human variation. Schaaffhausen must be accredited with a compete recognition of the skull as "due to a natural conformation, hitherto not known to exist even in the most barbarous races" (Schaaffhausen, 1860). By a fortunate chance the discovery only slightly anticipated the publication of Darwin's and Wallace's evolutionary theories, and thus it drew more attention than would otherwise have been the case. Before long, argument would rage as to whether it was a genuine early link in the human phylogeny, yet at the time of Schaffahausen's first report it is interesting to note that he merely expressed a suspicion that the skull might represent an individual member of one of those wild northern races spoken of by the Latin writers.

So far we have spoken of the hints and intimations of human primitiveness derived from the examination of living apes and their arrangement in a sequence of stages with existing man. It is not, therefore, without interest that when a cast of the Neanderthal calvarium reached London it was exhibited between the skull of a gorilla and two negro crania. "Should this Neanderthal man prove to be an intermediate species between the Papuan and the gorilla, a great point of controversy would be gained by the transmutationists . . ." commented one observer (Blake, 1864). Another anthropologist, Pruner-Bey, did not weight the negro resemblance so highly, but was fascinated by the close resemblance of the skull to that of existing Irishmen (Blake, 1865).

"Part at least of the ancient memorials of Nature were written in a living language," Sir Charles Lyell once wisely observed. That key, that Rosetta stone to which Lyell refers is, of course, comparative anatomy. Without it we would be at a loss for a clue by which to understand the life of the past, or its relationship to ourselves. It is for this reason that Neanderthal man and his interpretation bulk so large in the mid-nineteenth century. He was, to pursue Sir Charles's simile, the first archaic human syllable caught echoing from the remoter past of man, yet still recognizably human. It was inevitable that his discovery should raise a storm of contention. Crania of similar rugosity were thought to be observed among the living peasantry of Europe, preferably among nationalities other than one's own.

There was ample justification for Virchow's remark that after the Neanderthal discovery, skulls from peat bogs, from time levels known today to be Neolithic, began to be regarded as primitive. "They smelt out," he wryly remarks, "the scent of the ape." And, further, if it was pointed out that these crania from the old pile villages were capacious and modern, some of the more rabid evolutionists contended that these people "had more interstitial tissue than is now usual, and that in spite of the size of the brain, their nerve substance may have remained at a lower stage of development" (Virchow, 1878). It was, to put the matter bluntly, a way of arguing for evolution by saying that even when ancient skulls had the appearance of *Homo sapiens* they had, to all intents and purposes, been stuffed with connective tissue, a polite euphemism for sawdust. Those who would castigate Virchow today for his opposition to the acceptance of the Neanderthal skull as a valid human fossil must remember that such excesses as represented by the above statements did nothing to increase the tolerance of the old master scientist.

Turning from the Continent to the British Isles, we may ask what views were entertained by Darwin and Huxley. Darwin, always cautious, did not express himself early. Huxley, writing to Lyell in 1862, commented that "the Neanderthal skull may be described as a slightly exaggerated modification of one of the two types (and the lower) of Australian skulls" (Huxley, 1913). Darwin, laboring upon the *Descent of Man* (1871), and drawing from Carter Blake before him, spoke of the enormous projecting canines of the La Naulette specimen. Nevertheless, he is on the whole wary, particularly because he was impressed with the capacity of the Neanderthal cranium. The Darwinians who had eyed microcephalic idiots as possible reversions to primitive man were actually not very happy or enthusiastic about the first Neanderthal discovery.

The massive supraorbital development attracted them, but the face was missing, a factor which made it impossible to be quite certain that the Neander skull was not within the variant range of the modern races. Some, like Carl Vogt (1864, p. 304), labelled the Neanderthal cranium as that of an idiot, but one has to realize that in the eyes of certain of these workers, and particularly Vogt, this does not destroy the value of the specimen as representing an early human stage of development. Instead, this theory rather cleverly evades the issue of time. It is equivalent to saying: if the specimen is old it is "normal" for its period. If it should prove to be a comparatively recent burial it is "abnormal," but a remarkable case of reversion, nevertheless, to a primitive ancestor (Eiseley, 1954).

The western world throughout the last few centuries has tended to see itself either in terms of steps going up, or steps coming down. Progress or degeneration has been a debate often influenced by the individual temperament of philosophers and perennially renewed under the impact of new systems of thought. The role played by the discovery of Neanderthal man cannot be entirely grasped without some reference to this aspect of the western mind. Under the influence of Archbishop Whately, a strong belief in the conception that modern primitives and even archeological remains of past primitives represented a state of degradation from more civilized conditions was variously expressed by numerous writers at the mid-century and beyond.

"We have found nothing yet," comments H. B. Tristram, "to prove that the barbarous dwellers on the kitchen middens were not the wandering outcasts from the pre-existent civilization of the valleys of the Euphrates or the Nile, nor is there any chronological argument against it. Nor have we yet seen the traces of the barbaric epoch underlying the vestiges of the earliest civilization in its sites. Nor in the face of the relics of the Mississippi valley, of Central America, or of Mesopotamia, can we admit that there is no evidence before us of man relapsing from civilization." (Tristram, 1866).

It would be impossible in a short space of time to explore fully the degeneration theory which, if pursued, could be shown to be related to the "Decay of Nature" concept of the Elizabethan era. As an argument to explain certain archeological facts, however, it reemerges a little prior to the publication of the *Origin of Species* and at a time when the bone caves of Europe are just beginning to be probed. The revelations of the caverns were beginning to trouble religious orthodoxy. There can be no doubt that the emergence of the "degeneration" idea was the direct attempt of the spokesman for the traditional viewpoint to explain away the crude artifacts which, when found in Europe, hinted that remote and bestial beginnings might lie at the root of western culture.

Though the argument is no longer attractive, it was a persuasive alternative to evolutionism in the mid-century decades. There were serious debates, and some of the leading scholars of the period—men like the Duke of Argyll and Sir John Lubbock—arrayed themselves on opposite sides of the question. Archeology could supply the material for debate, but the truth was that its materials lent themselves readily to either the degeneration or the development hypothesis. Rudolf Schmid (1883), a contemporary student of the period, confessed frankly that: "Archeology, as a whole, seems to do no more than admit that its results can be incorporated into the theory of an origin of the human race through gradual development, *if this theory can be shown to be correct in some other way* . . ." Schmid, in other words, recognized that something other than the approach through artifacts was needed to establish the reality of human evolution. That something was provided by the discovery of the Neanderthal skull. The skull and the La Naulette mandible of 1866 focussed attention on the fact that the bone caves might contain more than simple artifacts and evidence of extended human antiquity; they might provide conclusive proof as well that the human body itself had undergone the transfiguring touch of time.

It is true that the Darwinian passion for present-day atavisms obscured, for a time, this revelation, and that the skulls of idiots occupied on the demonstrator's platform a place between the skull of the orang and the Hottentot, but as the evidence from the caves slowly accumulated, this fashion passed. The Neanderthal discovery, coming as it did, early enough so that translations and accounts appeared in England almost simultaneously with the opening of the evolutionary debate, ensured that the skull would not be ignored nor forgotten.

For a striking new fact to receive attention, it must fit into a theory, and that theory was immediately at hand. The earlier Neanderthal discovery at Gibraltar had had no such good fortune. Schaaffhausen's remarks about the wild tribes mentioned by the Romans would be quickly forgotten by their author, nor would it matter that the Neanderthal specimen would be challenged from every conceivable point of view. The real point lay in the world-wide, if hesitant reception of the fossil, in the interest it had stirred. Out of the bones would grow a new and specialized science, and as a consequence there would occur a slow fading of the degeneration hypothesis. The discovery would lead on, also, to the truly historical morphology which Darwin and his colleagues had not yet succeeded in extricating from the comparative morphology of the living which continued in some degree to dominate their epoch and their thinking. Nor did it dominate biologists alone. As late as 1905, a prominent American anthropologist, W. J. McGee, who had charge of the anthropological exhibits at the Louisiana Purchase Exposition in St. Louis, spoke as follows: "the next physical type chosen was the Ainu . . . their small stature . . . their use of the feet as manual adjuncts, their elongated arms and incurved hands, and their facility in climbing, approximate them to the quadrumanes and betoken a tree-climbing ancestry." (McGee, 1905).

Alfred Russel Wallace would, in his emphasis upon the shift of evolution to the mind, with its enormous latent possibilities, achieve, in the end, a partially effective compromise between the degenerationists and the evolutionists, for Wallace had a foot in both camps. He would explain the apparent slowness of human evolution as then understood, and, at the same time, in his meditations over the mysterious powers of the human mind, he would go far to abandon the linear

biology which placed living races in a series of subordinate "fossil" levels, and which revolted many Christian thinkers.

If we now attempt to summarize briefly the separate elements of human thinking which were in some degree altered by the discovery at the Neanderthal cave, we may list them as follows:

First: the discovery aroused and maintained interest for a number of reasons. Anatomically, the massive character of the orbital ridges and the unusual conformation of the vault led to suspicions that its type was extinct in Europe. Also, and most importantly from the speculative standpoint, the skull came to serious attention almost simultaneously with the developing Darwinian controversy. Seized upon by some of the more avid evolutionists as a proof of man's descent from the great anthropoids, it was interpreted in terms of the taxonomical ladder which had been utilized by the transformationists of the first part of the century. Its capacious brain-case did not prevent it from being labelled as a brute, and its characters were so transformed that, without the slightest basis in fact, it was described as possessing huge projecting canines and "an appearance in the highest degree hideous and ferocious." This ferocity, of course, represents a distorted Victorian emphasis upon the struggle for existence in its more lurid forms.

Second: As the number of big-brained primitives in the upper Pleistocene became slowly established, the Darwinists were forced to reassess the time involved in the human transformation, and to extend it.

Third: The most astute researchers were led to consider the possibility that the earth, rather than the jungle or the insane hospital, might contain the clue to man's evolutionary past.

Fourth: The degeneration theory so successfully advocated by Archibishop Whately and his followers, as long as they had only the archeologist to face, began to lose its efficacy once it could be shown that the caves of Europe contained actual organic traces of men more primitive in physical type than men of the present day.

Finally, if we were to ask what lesson this discovery has to teach us today—one hundred years after the quarrymen sank their shovels in that little enclosed grotto in the gorge of the Neander —we might venture to say this: that man, irrespective of whether he is a theologian or a scientist, has a strong tendency to see what he hopes to see. The nineteenth century evolutionists—those who accepted the Neanderthal specimen—saw a savage animal whose skull contours reminded them, paradoxically, of the Negro, the Mongol, the Hottentot, or the Irishman—all peoples at that time economically depressed. The scholars tended to cling to a linear phylogenetic line in which each living race represented a frozen step on the way to the emergence of the civilized Caucasian. We smile at this today, yet it may be wondered whether our present frequent tendency to arrange our varied assemblage of human fossils in a single unilinear phylogeny may not threaten to lead to a historical simplification as rigid and potentially wrong as we now know the unilinear taxonomical approach through the living races to have been. After all, we know paleontologically that families have proliferated and later contracted as a single type has achieved ecological dominance.

In conclusion, when we consider this creature of "brute benightedness" and "gorilloid ferocity," as most of those who peered into that dark skull vault chose to interpret what they saw there, let us remember what was finally revealed at the little French cave near La Chapelle aux Saints in 1908. Here, across millennia of time, we can observe a very moving spectacle. For these men whose brains were locked in a skull reminiscent of the ape, these men whom serious scientists had contended to possess no thoughts beyond those of the brute had laid down their dead in grief.

Massive flint-hardened hands had shaped a sepulchre and placed flat stones to guard the dead man's head. A haunch of meat had been left to aid the dead man's journey. Worked flints, a little treasure of the human dawn, had been poured lovingly into the grave. And down the untold centuries the message has come without words: "We too were human, we too suffered, we too believed that the grave is not the end. We too, whose faces affright you now, knew human agony and human love."

It is important to consider that across fifty thousand years nothing has changed or altered in that act. It is the human gesture by which we know a man though he looks out upon us under a brow suggestive of the ape. If, in another fifty thousand years, man can still weep, we will know humanity is safe. This is all we need to ask about the onrush of the scientific age.

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