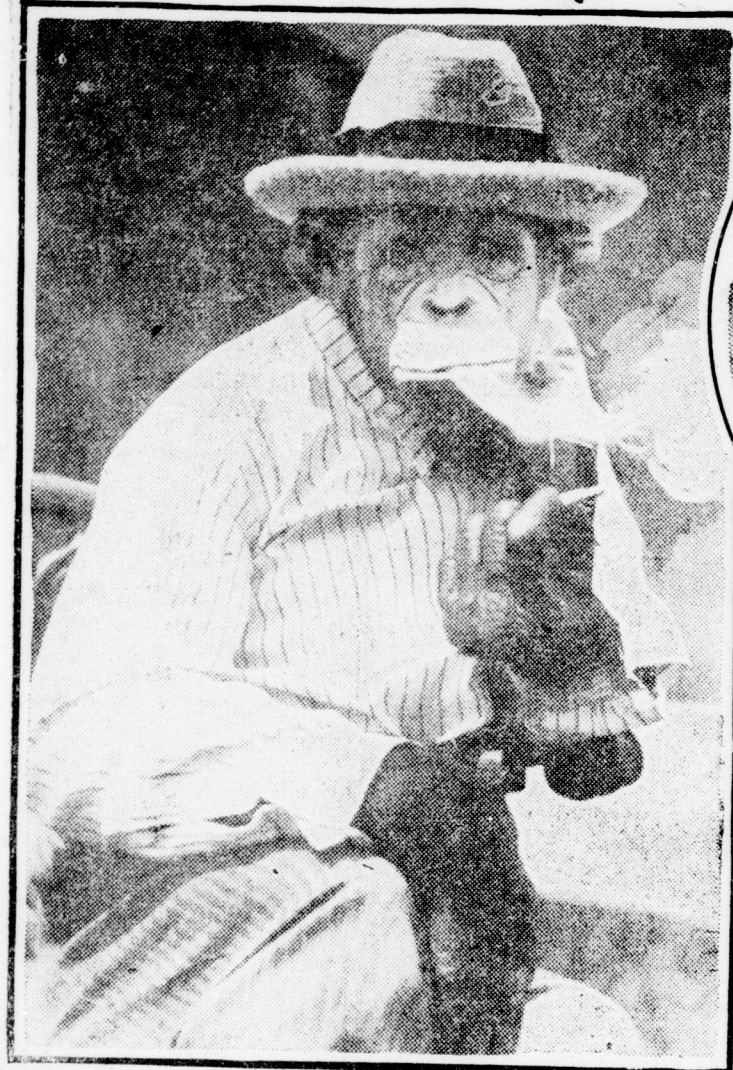
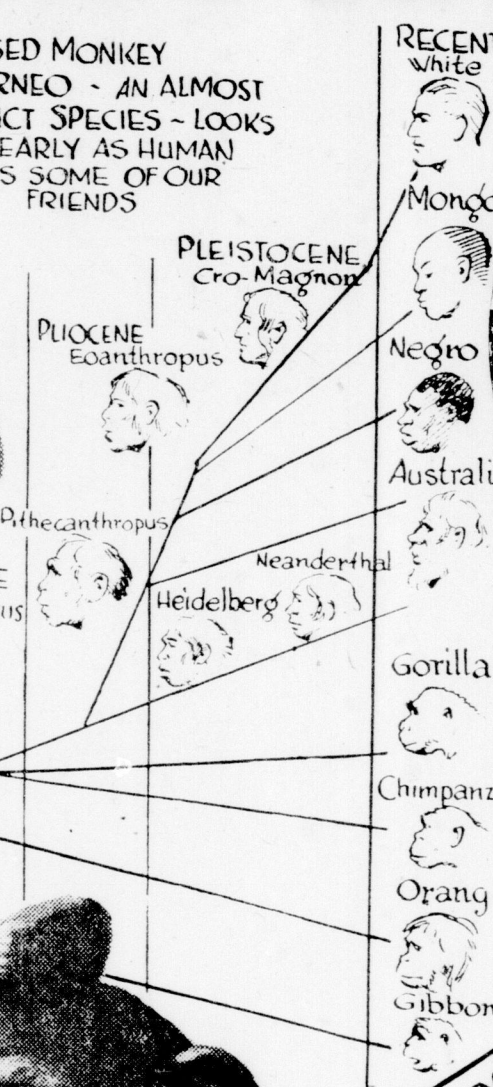
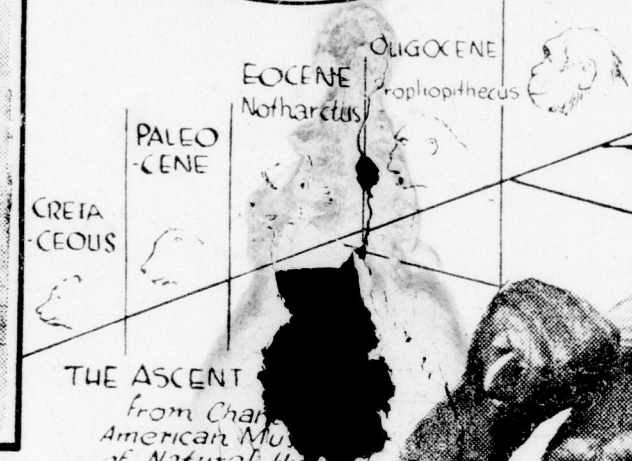


LONDON, SATURDAY, JANUARY 12, 1924.

MAN—and This Monkey Business

A MAN'S A MAN FOR A THAT SAYS SNOOKY
THE MOST INTELLIGENT CHIMPANZEE

Prof. J. P. McMurrich, of Toronto University, Retiring President of the American Association For the Advancement of Science, Tells What is Known of the Origin of Man—What Evolution Really Means—No Such Thing as a "Missing Link"—Apes Differ More From Lower Monkeys Than They Do From Men.

By FRED G. GRIFFIN

HOW old is man? That is, how long has man as we know him lived on the earth? What is the origin of the human race from the point of view of modern science and the evolutionists, as distinct from the point of view of William Jennings Bryan, the fundamentalists and others who hold to the Garden of Eden story that humankind came from the rib of the sleeping Adam?

Was man once a monkey? If we were able to trace our pedigree away back through the centuries would we eventually come on forefathers who swung from trees with their tails and who threw coconuts instead of baseballs? Or are man and monkey collateral descendants of the same original stock? Different branches of the same common root? Sort of thirty-second cousins a thousand times removed? Science cannot answer the first question definitely to within scores of thousands of years. With regards to man's possible kinship with the monkey, the answer seems to be "Guilty, but not quite proven." There seems not the slightest doubt in the world that the monkey is merely man's poor relation. A cadet, wild or degenerate branch from the same stock.

At any rate, Darwin's theories of evolution, natural selection, the origin of species and the descent of man hold a higher place to-day than they did sixty years ago when they sent the theologians into a ferment. At a meeting of the American Association for the Advancement of Science held in Cincinnati a week or so ago the retiring president, Professor J. P. McMurrich, professor of anatomy at the University of Toronto, declared that the theory of evolution had now advanced far beyond Darwin's conception and that the evidence in its favor was so much stronger than in his day that "it seems incredible," Prof. McMurrich went on, "that man as a reasoning animal should presume to doubt its validity."

Since his return to Toronto Prof. McMurrich has been good enough to talk to The Star Weekly on the matter further. "Those men who deny the theory of evolution," he declared, "simply refuse to accept the evidence. They refuse to see it. They say that they will not believe; that they won't be convinced. They are intellectual obstructionists. They are medievalists in their thinking. If they take the Biblical story of the creation literally they are away back in their thinking in the days when men thought the earth was a four square plate floating on water."

Not the First Evolutionist

ARWIN, Professor McMurrich pointed out, was not the first evolutionist. The theory was frequently uttered in classical times and often since. Darwin by his experiments, observation and genius had simply given the

The chart shown in the layout above has been copied from one made by the American Museum of Natural History to show the evolution of the Primates. It is described in these words: The human line is well separated from the other Primates for an enormous period, perhaps two million years. The gibbon, followed by the orang, chimpanzee and gorilla, branched off in the Oligocene and Miocene ages. Since the Miocene the evolution of man and the apes has been in different directions. The eight stages of man represented by the horizontal lines from left to right are: 1, Tree-living insectivores at the close of the age of reptiles; 2, first Primates, represented by fossil teeth from Montana; 3, tree-living Primates of North America and Europe; 4, first anthropoid Primates, represented by fossil jaws and teeth in Europe; 5, primitive relatives of man, represented by fossil jaws and teeth from India and Europe; 6, the ape man of Java; 7, the Dawn Man (Pithecanthropus) and the Cro-Magnon, which is the first of homo sapiens (the Heidelberg and Neanderthal men are regarded as sidelines not leading directly to existing races); 8, recent races of men.

world a plausible explanation of how evolution undoubtedly took place in organic life.

There was no such thing as a "missing link," one of the stock jokes of two generations ago, Professor McMurrich declared definitely. Evolution had been a gradual process. There were gaps, it was true, in the story but that did not prove it untrue. It was like looking at a ladder with some of the rungs missing. There was enough of the outline to prove it a ladder nevertheless.

Then Professor McMurrich made this remarkable pronouncement: "There is a big gap between man and the ape but less than between the ape and the monkey. I mean that the difference is less between man and the highest ape than between the highest ape and the lowest monkey. I am speaking anatomically, of course."

"But I don't think that any living monkey came into the line of descent of any living ape or that any living ape came into the descent of man. I believe that all of them are offshoots. The origin of man will go back beyond the origin of any ape now living."

"We can't say where man stops and the ape begins. If evolution was a gradual process, as it was, over hundreds of thousands of years, how can we?"

There were differences even between the races of present day man. That is, anatomical differences. For example, Prof. McMurrich pointed out there was a distinct difference in detail of bodily structure between the Australoid race, the Australian aborigine, and the Caucasian or white race. Certain little muscular differences. The organs of life of the Australoid woman showed anatomical peculiarities, a decided variation from those of the white woman. The Australoid, in fact, is still very much a mystery human. His origin remains one of the interesting problems of the biologist. The University of Sydney has been working on lines of research in the matter which may have wide results in throwing fresh light on the whole theory of evolution.

Then again the South African bushman, a Negroid type, differed from the Caucasian. The Mongolian, the fourth distinct race of mankind, might also show slight anatomical divergencies. Scientists had not yet studied sufficiently the minutiae of each race to say what was the norm for each.

Discoveries Since Darwin's Time

The discoveries, all made since Darwin's time, which have a bearing on the theory of evolution and which the scientists say strongly buttress the belief in the descent of man.

First of all, at Trinil, in Java, there have been found in strata which the geologists place at the end of the Pleistocene period, 500,000 years ago, the top of a skull, some teeth and a thigh bone. These fossils constitute the first trace so far discovered of man or sub-man. From them the biologists constructed the form this creature must have taken. H. G. Wells in his Outline of History, in which he sums up the consensus of scientific opinion on man's



A CHIMP "CAKE-EATER" TRYING TO CULTIVATE A PATENT-LEATHER POMP.

origin and theorizes romantically on his own, declares that this creature which found a grave in Java was not a man. Nor was it an arboreal ape like the chimpanzee. It was a walking ape. The skull bone, Wells declares, shows a brain case about half way between the chimpanzee and man, but the thigh bone is that of a creature as well adapted for walking and running as man, and as free, therefore, to use its hands. This primate has been given the Latin name the Pithecanthropus erectus (the walking ape man).

Then there comes a gap of hundreds of thousands of years. The next trace of man or sub-man was a jaw bone found in a gravel pit at Heidelberg. This the geologists placed as belonging to the Second Interglacial period, 200,000 or 250,000 years ago. "It is not an ape's jaw bone," declares Wells, "the teeth are human." The jaw bone showed no trace of a chin. Therefore the creature had not the power of articulate speech.

Another gap of 100,000 years. Then, a few years ago, at Piltown, in Sussex, England, there was dug up in gravel the smashed pieces of a whole skull. The strata in which it was found was placed by geologists as belonging to the Third Interglacial Period which lasted from 100,000 to 50,000 years ago. So that we are getting quite close to modern history, comparatively speaking, when one remembers that the scientists say the earth is millions of years old. And yet according to Wells this skull was not that of a true man. It showed a creature ascending only very gradually from the sub-human. Its jawbone was far less human than that of the Heidelberg "man" but its teeth more like a human's. This creature is referred to as Eoanthropus or the Dawn Man.

It is believed that this gentleman, or, rather, lady—for it was a female skull—was not in the direct ancestry of man. But, concludes Wells, "it was one of a number of running mates of more than apeline intelligence, and if it was not on the line royal of man, it was at any rate a very close collateral."

Thousands of years pass before the Neanderthal man appears in Europe, of whom many traces have been found. He existed over 50,000 years ago. He was quite a passable human being, according to Wells; certainly a man of the genus homo. Yet he was stooped, chinless, probably incapable of speech. He had no language. It is suggested that he may have been a cannibal.

Then between 40,000 and 25,000 years ago in Europe appeared the Cro-Magnons, the first true men of whom there is as yet any trace. And frequent traces of the Cro-Magnon have been found. He had a human hand, a human brain, intelligence like our own. He could draw.

Much of his art has been discovered on the walls of caves in France. In fact, in the heart of France, there are still found people who are said to be survivors of the Cro-Magnon race who have persisted through the centuries.

Lines of Parallel Descent

AN interesting and enlightening fact is the knowledge that the Cro-Magnons, true men, actually lived contemporaneously in Europe with the Neanderthals, who were something less than true men, with whom they did not mix or interbreed and whom they gradually replaced. This bears out the theory now widely held of collateral lines of development, possible from the same root; of parallel descent. It is further given weight by the fact that since the Cro-Magnons other distinct and individualistic races have lived, had their day and become extinct, though each left its scanty traces for the twentieth century to dig up and decipher.

And it is worth emphasizing that all these discoveries which have been narrated have taken place since Darwin's day. If his genius had had this evidence to reason from, there is no knowing the definiteness with which he might have traced the descent of man.

But where these races originated, where they were developed and cradled, or how, nobody knows. So many theories have been held. Professor McMurrich recalled, with a smile, having once read a geological treatise which reasoned that the Garden of Eden had been inside the Arctic circle. Undoubtedly the Arctic was once much milder than even Stefansson has found it to be, for there have been discovered the fossil remains of maples and palms, and other trees of Tropical and sub-tropical growth.

The Garden of Eden of Hebrew history has usually been located by the literal believer in the story of the creation, after a search for hidden directions in the text of Genesis, somewhere about the junction of the Euphrates and Tigris rivers, northwest from the Persian gulf. But the scientist for years has placed the location of man's nursery much farther east, in the Siwalik hills of northern India (near Simla, the famous hill resort of the Europeans), and in the geologically submerged area towards the southeast, where many fossil remains of primates have been found which were either ancestral or closely related to the highest living apes; as well as in Java, which in the Pliocene period (600,000 to 550,000 B.C.) was connected with the mainland over what is now the South China sea, where the Java Pithecanthropus was recently discovered. Such are the conclusions of the scientists as summarized by Madison Grant in "The Passing of the Great Race."

In this connection Wells makes the following

interesting statement, which goes away back into the dim ages long before our first definite proof of sub-man in the person of Pithecanthropus: "The apes and the monkeys already appear to have been differentiated at the beginning of the Cainozoic Age (which he places at either four or forty million years ago—the age when mammals, grass and land forests appeared), and there are a number of Oligocene and Miocene (subdivisions of the Cainozoic) apes whose relations to one another and to the human line have still to be made out. Among them we may mention Dryopithecus of the Miocene age, with a very human-looking jaw. In the Siwalik hills of northern India remains of some very interesting apes have been found, of which Sivapithecus and Palaeopithecus were possibly closely related to the human ancestor. Possibly these animals already used implements. Charles Darwin represents baboons as opening nuts by breaking them with stones, using stakes to prise up rocks in the hunt for insects, and striking blows with sticks and stones. The chimpanzee makes itself a tree hut by intertwining branches. Stones apparently chipped have been found in strata of Oligocene age at Boncelles in Belgium. Possibly the implement using disposition was already present in the Mesozoic ancestry from which we are descended."

The Point of Departure

ACCORDING to the chart made by the American Museum of Natural History, which accompanies this article, it was somewhere about the Oligocene or Miocene periods that man and the apes began to branch out and draw apart, having had up to that time a common descent, which, if correct, would mean that man has been at least some degree of a sub-man at least, as distinct from being on the same line as the ape or sub-ape, for some millions of years.

Now, according to Professor McMurrich, in discussing the possible cradle of the race, Henry Fairfield Osborn, the famous American scientist, one of the greatest authorities in the world on fossils in their relation to the origin of the human race, thinks that Mongolia offers the most fruitful of all fields for research as the scientist's Garden of Eden. The American Museum of Natural History has at present an expedition out there seeking clues to the mystery of mankind and the keys of evolution. At any moment they may make discoveries which will show traces of a sub-human, older and lower and more brutish than the 500,000-year-old Pithecanthropus of Java. They may dig up fossils which will fill up the gaps and bridge hundreds of thousands of years. They may disinter scraps of prehistoric bone which may make clear the exact relationship, direct or collateral as the case may be, of man and the apes.

In the meantime further researches are being carried out in Java, where Pithecanthropus had his old homestead.

The search for the needle in the proverbial bundle of hay was an easy affair compared to the modern search for stray fossils in the submerged strata of clay or rock that were on the surface in the dawn ages of the earth. Unless one of these early creatures was buried in slime which afterwards hardened and preserved him, all trace of those which fell on the surface of the earth has necessarily gone in dust in the hundreds of thousands of years which have intervened.

Professor McMurrich reviewed the different discoveries of early man which have been given above. "The ape skull," he declared, "the Java skull, the Piltown and Heidelberg skulls, the Neanderthal skull and the skull of present-day man make a pretty good series. They fit in pretty well. Not continuously, of course. There are great gaps. Not in exactly related progression either, even allowing for the gaps. But then there were undoubtedly several lines of descent, and some of these skulls may have been on collateral instead of direct lines."

"I do not think that we have by any means got a definite line of succession, but all discoveries made so far have pointed in the same direction. You cannot say that man is descended from the apes, but I think you can say that man and the apes have had an evolution along parallel lines. It isn't as if evolution only applied to man, but it applied throughout the whole animal kingdom. If it is true there how can you stop? There is no question but that evolution runs throughout the whole world, either up or down. There is no standing still."

"Anatomically, man is in perfect continuation with the lower forms."

Several Divergent Lines

PROF. McMURRICH pointed out that Darwin held the theory of one original stock, but declared that now the scientists were gradually coming round to the idea of several divergent lines. It is quite possible that in ages gone by there were different types or races of man or sub-man living at the same time. In fact, it is known that the Neanderthals and the Cro-Magnons existed for centuries side by side in Europe until the former disappeared. No doubt there was much of this overlapping, just as at the present time even in Europe you find the Nordics, the Alpines and the Mediterraneans, three distinct branches of the Caucasian race, living side by side, clear cut in some cases, in others underlying, interbreeding, mixed.

And just as at the present time in Australia, the Caucasians are gradually replacing the distinct and more primitive Australoid aborigines. There seems no doubt," continued Prof. McMurrich, "of the polytypic origin of man; no doubt that is, that there may have been several different stocks each coming from different primitive ancestors who in turn were branches themselves."

When did man become man? When did man get a mind and those spiritual attributes which we call a soul? Professor McMurrich did not know. Nobody knows at what stage in man's history he began to differ from the animals. Probably the acquiring of a mind took countless thousands of years. No doubt the mental processes of man underwent an evolution which paralleled his physical development.

"As soon as man began to talk," declared Professor McMurrich, "no doubt his mind began

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