

"Just as the long arms of apes were due to their tree-climbing habits, so the greater leg development in man resulted from his habit of walking on the ground. There must have been a time, Dr. Morton believes, when this development had gone about half way, when the arms and legs of both groups were of the same length. Such a condition, he thinks, would be the point where the ape and human stem separated.

"To the original human creature erect standing on the ground was a real physical effort, in spite of his precious experience of tree life," Dr. Morton said. "Without holding on to something, it would have been extremely difficult to stand for a long time."

Their feet were all toes and there was no heel to support the body weight. Their knees were still bent and their hips partly flexed, and the spine bent forward at the shoulders. The perfect body pose of modern man was of slow development in which great changes took place in the feet, leg, hips, spine and other parts of the body.

The entire human body, Dr. Morton said, has become remodelled on a central axis plan, and the weight of different parts of the body is so balanced that only slight muscular effort is needed to maintain the equilibrium of the whole. Man is the only animal today that grows straight up like a lily on a stem.

"Aboreal man, as a tree-living human being must be considered a myth," Dr. Morton said, "for the characteristics which definitely mark the human being as man are ones which are associated with terrestrial bipedism. The tree-living habits must have been given up long before the skeletal changes could have occurred."

TELLS HOW AMATEURS MAY AID ASTRONOMERS

How amateurs, with no mathematical or other scientific training, can aid the professional astronomer to solve the mysteries of space was explained recently when Leon Campbell, of the Harvard College Observatory, told the listeners of radio station WEEI of the work of the American Association of Variable Star Observers and other bodies of lay astronomers. In fact, the amateur does not even need a telescope, for meteors may be observed with the unaided eye, it was said.

"When one realizes that millions of meteors enter the earth's atmosphere daily," said Mr. Campbell, "some of them no larger than grains of sand, others large enough to light up the heavens even in broad daylight, one soon perceives that there is plenty of work available in observing meteors, in counting them, gauging their positions and estimating their brightness, especially during meteor showers. If one watches any selected area of the sky on almost any clear night for, say, half an hour, he will be able to count several conspicuous meteors, and with no more than a passing knowledge of celestial topography, he can plot their paths and thus furnish material for determining the points in the sky from which they appear to come."

Another field for the amateur without a telescope is in watching for "new stars" or novae, as the astronomer calls them, which suddenly flash out from previous obscurity. R. Watson, an amateur astronomer in South Africa, has discovered two of these, Mr. Campbell stated, while Rev. T. D. Anderson, an amateur in Edinburgh, Scotland, has discovered three. "Since most of the novae occur near the Milky Way," said Mr. Campbell, "it might be well worth while for the amateur to familiarize himself with the constellations in which this well known band of stars lies."

Interesting and important as these endeavors are, the chief work of the amateur can be accomplished with the aid of a small telescope. Occasionally as was the case recently with Leslie C. Peltier, an amateur of Delphos, Ohio, he may find a new comet, which will bring him fame, and, if he is the first to see it, the comet will be named after him. The late Dr. Joel H. Metcalf, a Unitarian minister of Winchester, Mass., discovered six, while the late Wm. R. Brooks, of Geneva, N.Y. found a dozen in twenty years, Mr. Campbell said.

However, the most valuable work of the amateur, in the opinion of Mr. Campbell, is in observing variable stars, which more or less regularly diminish in brightness, only to flash out again as bright as before. The American Association of Variable Star Observers numbers over 300 members, and in the past fourteen years they have accumulated more than 200,000 observations on about 500 of these stars. "So completely is this work being carried on that the professional astronomers rely almost entirely on the results of such variable star observers for the fundamental data necessary to a better understanding of the cause underlying the variations of these stars," it was said by the speaker, who concluded by requesting still more cooperation between the laymen and the astronomers.

----- BRIGHT BRAINS GROW UNTIL TWENTY

If intelligence was a visible part of human anatomy, like height, so that it could be seen and measured with a tapeline, we could easily observe that the average individual stops growing at around the age of fifteen, but that the brighter child continues to shoot up head and shoulders above the crowd, until he is twenty years old, or perhaps older.

Evidence along this line, showing that all minds, like all bodies, do not stop growing at the same age, but that some continue to grow much longer was presented by Dr. L. L. Thurstone, of the University of Chicago, before the American Psychological Association recently.

"During the war it was possible to compare the brightness of men of different age groups by means of the army psychological tests," said Dr. Thurstone. "The tests indicated that intelligence does not increase in adult age. Men thirty years old did not do much better in the tests than men twenty-one years old. Experiments to determine the point at which adult intelligence is reached placed the age level of so-called adult intelligence in the vicinity of fourteen or fifteen years.

By a new method of measurement, a study has been made of 3,000 London children, three to fourteen years old, and a study of 10,000 American children from eight to nineteen years. Results show that brightness increases as far as the study has been carried, that is, up to twenty years."