

referred to the markings which are found in the integument in the palm of the hand and the sole of the foot. I have made photographs of the palm and the sole in the Orang, and these well illustrate the conditions found as described by Prof. Turner in the Anthropoid Apes. The two oblique lines which run from the base of the index finger to the inner side of the palm in the human hand indicate the lines along which the fingers are bent in towards the palm. The obliquity of these lines in man is in contrast to the transverse direction of the lines as shown in the photographs of the Orang. It is quite obvious that the oblique direction in man indicates that the fingers are more directly opposed to the thumb in man than is the case in the Ape. Thus, in the Orang, the fingers are folded more directly into the palm, as would be the case if the animal were grasping a cylindrical object, hence transverse lines result and the fingers are not to any appreciable extent opposed to the thumb, which, by the way, is a very rudimentary structure in the anthropoid apes as compared with the thumb of man. This rudimentary thumb in the Orang, is, however, capable of opposition, and therefore we find that the deep groove which is found separating the eminence at the root of the thumb in man is also found in the Orang. In the Orang we find, too, that there is a well marked groove marking off an eminence at the root of the little finger. When we come to examine the sole of the foot in the Orang we find here a very characteristic condition. A well-marked line is developed at the root of the great toe, indicating the line along which the great toe is opposed to the other toes. This is a characteristic not possessed by man, in whom the great toe is not capable of opposition and in whom this mark is entirely absent. Further, the lines at the roots of the toes are in reality more oblique in the foot of the Orang than in the hand of the same animal. This would indicate that the foot is better adapted for grasping objects than the hand, and that opposition of the smaller toes to the great toe is more perfect than is the similar movement of opposition in the hand. In the foot of the Orang, further is to be noted the great length of the toes, producing a marked resemblance to a hand. The great toe is very much shorter than the remaining digits, but it is strongly developed otherwise and is much more effective as a grasping agent than the corresponding digit in the hand. This foot of the Ape so much resembles a hand that it has been called a foot-hand; the term "pedimanous" has been used to describe the condition. When we come to examine the structure of the foot, however, and study the bones, muscles, ligaments, etc., we find that, morphologically, we are dealing with a foot, and from that standpoint it is in no sense a hand. Physiologically, however, it performs the functions of a hand as well as of a foot. Turner alludes to an interesting point regarding the development of the markings on the palm, namely, that they are found in the human embryo at a very early stage of development, long before they could be accounted for by movements occurring in the hand of the embryo. This would indicate that the markings themselves were hereditary and are not simply acquired after the various movements which they indicate are brought about.

The Orang possesses a highly developed brain. In the particular animal we are describing the brain was removed and examined. The antero-posterior diameter of the brain is less in proportion to the transverse diameter than it is in man. The brain of the Orang may be described as a round-oval. The characteristic fissures and convolutions of the human brain are readily distinguished in the Orang. The external occipital fissure is much longer than in man. This is so characteristic of the brain of apes that it is known as the "Simian Fissure." The Island of Reil is completely overlapped in the Orang by an operculum. The third frontal convolution—said to be characteristic of man—is certainly not well defined in the example before us. This convolution of the left side in man is the so-called "speech centre." The convolutions about the fissure of Rolando—the Motor Area—are well developed.