vast amount of information which has already been furnished upon the anatomy of this order rendered further investigations on my part unnecessary. Professor Bischoff[1] of Munich, who is perhaps the greatest living authority upon the structure of the Ape, and its relation to that of Man, has added greatly to our knowledge in this respect, and so also have Huxley,[2] Duvernoy,[3] Vrolik,[4] Halford,[5] Macalister,[6] Champenys,[7] Ruge,[8] Murie and Mivart,[9] and many others. Except in the case of the three specimens, above quoted, the following facts are borrowed from the writings of these distinguished authors.

I have found the memoirs mentioned below especially useful in the present research. I regret, however, that I have not had an opportunity of studying Professor Halford's papers, and have thus been obliged to trust for my information regarding them to other memoirs in which they are noticed.

Plantar layer.—In the Quadrumana the adducting apparatus of the digits is usually very powerful, and further, it is plantar in position. Owing to the wide range of movement which is possessed by the opposable hallux, the adductor hallucis is developed to an extent far beyond the adductors of the other toes. It is in this group of animals that we observe for the first time a decided tendency in this muscle to split up into two parts, viz., an adductor obliquus hallucis, and an adductor transversus hallucis (*i.e.*, the transversalis pedis). Throughout Mammalia we occasionally see traces of a transverse adductor in connection with one or other of the muscles belonging to the plantar layer, but these are few in number, and the instances in which they occur have little direct bearing upon each other. In the Tamandua, Sloth, Elephant, and apparently also in the Armadillo, a transverse adductor of the index has been observed; again, in the Walrus a transverse adductor hallucis is present, and as we have noted, both Meckel and Ruge also consider the adductor hallucis in the Virginian Opossum to be double.

Bischoff in his memoir upon the *Hylobates leuciscus* gives an admirable account of the adductor hallucis in a great number of Apes. He shows that in the Gorilla, *Hylobates leuciscus*,[10] *Cynocephalus maimon*, *Cercopithecus sabäus*, and *Macacus cynomolgus* the two heads of this muscle are present as separate and distinct elements, whilst in the Orang,[11]

[1] Beiträge zur Anatomie des *Hylobates leuciscus*, München, 1870; Beiträge zur Anatomie des Gorilla, München, 1879.

[2] Structure and Classification of Mammalia (Lectures delivered before the Royal College of Surgeons), Medical Times and Gazette, 1864.

[3] Des caractères anatomiques des grands singes pseudo-anthropomorphes, Archives du Museum, tom. viii.

[4] Recherches d'Anatomie sur le Chimpansé, 1841.

[5] Not like Man, Bimanous, and Biped, nor yet Quadrumanous, but Cheiropodous, Melbourne, 1863; Lines of Demarcation between Man, Gorilla, and Macaque. Melbourne, 1864.

[6] Article on the Gorilla, Proc. Roy. Irish Academy, vol. i., ser. ii. pp. 501 and 504.

[7] On the Muscles and Nerves of a Chimpanzee and a *Cynocephalus anubis*, Journal of Anatomy and Physiology, vol. vi. pp. 187 and 203.

[8] Zur vergleichenden Anatomie der tiefen Muskeln in der Fussohle, Morph. Jahr., 1880.

[9] Anatomy of the Lemuroidea, Transactions of the Zoological Society, vol. xii.

[10] In the text (p. 39) the author states that in *Hylobates* the two muscles are coalesced, whilst in the table at the end of the work he says that they are "beide getrennt und stark."

[11] Bischoff asserts that the two heads are separate. Ruge, however, figures the muscle as a single fleshy mass (fig. 54).