With the first part of this hypothesis I am inclined to agree, viz., that the innervation of these muscles points to their probable derivation from the extensor muscles of the thigh; but I cannot accept the second part of the theory, that the muscles thus derived are replaced by others similarly situated and similarly attached. It is much more reasonable to suppose that the distribution of the peroneal nerve is gradually extended so as to include these muscles; that, in fact, the peroneal nerve invades the territory of the anterior crural in the same manner as we have seen the external plantar nerve encroach upon the domain of the internal plantar.

In the nervous arrangements in the hind-limb of the *Thylacine* and *Cuscus* there are facts which also require explanation if we are to accept these views as to the relation of nerve-supply to muscle-homology. Thus the biceps and its accessory parts receives twigs from (1) the pudic; (2) the nerve to the ham-strings; (3) the external saphenous; (4) the musculo-cutaneous: the adductor magnus is entirely supplied by the nerve to the quadratus femoris; and the inner head of the gastrocnemius in the *Cuscus* receives a twig from the external saphenous. If the source in the spinal cord from which the nerve fibres are derived is invariably the same, it is at least certain that the nerve-strands through which the fibres reach the muscle are often very different.

From the facts that I have brought forward, I think that we are entitled to conclude that the doctrine of the invariable relation between nerve-supply and muscle-homology is an erroneous one, and contrary to existing fact.[1] The value of this feature, however, in the determination of the history of a muscle cannot be overrated. Indeed, it is hardly equalled in importance by the "insertion."

Lastly, I consider that it is not at all unlikely—indeed, that it is highly probable—that the source in the brain or spinal cord from which the nerve fibres, destined for the supply of a certain muscle, are derived is invariably the same. Of this, however, we have little proof. It is a matter of certainty, as we have seen, that these fibres may adopt different nerve-strands in order to reach the muscle. Even in the human body great numbers of examples of this may be quoted. Thus the long buccal nerve has been

[1] Since the above was written, after, indeed, it was published in the form of an abstract (Relation of Nerve-Supply to Muscle-Homology, Jour. Anat. and Phys., vol. xvi.), a highly important paper by Dr. Hans Gadow has appeared, entitled "Beiträge zur Myologie der hinteren Extremität der Reptilien" (Morpholog. Jahrbuch, 1881). It is very satisfactory to find that, although a pupil of the Heidelberg school from which the doctrine of the immutability of nerve-supply originally emanated, he has arrived at results very similar to my own. Working, however, at lower forms than those offered by the Mammalian order he has had a better opportunity afforded him of clearing up the question. In my investigations I have been led to believe that wherever a muscle possessed a double nerve-supply this pointed to the amalgamation of two originally distinct muscles. Dr. Gadow, however, has proved that this interpretation only applies to comparatively few cases. In mammals it is rare to meet with a muscle which draws its nerve-supply from two different sources; in Man the adductor magnus, the pectineus and brachialis anticus are the best examples of this, and we have met with several other instances in the lower members of the group. In the lower animals, however, it is an extremely common occurrence, and Dr. Gadow has shown that the percentage of double-nerved muscles diminishes as we ascend the animal series from the Reptilia, through the birds, up to mammals; whilst at the same time the number of muscles increases. He concludes, therefore, that in the majority of cases double-nerved muscles show the original state, and that these muscles afterwards may become single-nerved muscles by splitting up into two or more separate factors.