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VI.—Notes on Apteryx Haastii

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the canal in question is somewhat obscured, owing to the fact that a large venous vessel lies near it.

THE BRAIN AND THE GANGLIA.

In a provisional communication, which is not accompanied by figures, very little can be said as to these organs. Some days before the embryos are hatched the brain already possesses several divisions. During the formation of the optic vesicles the anterior wall of the fore brain is represented by a very thin lamella. The hemispheres and the olfactory lobes are developed afterwards. The hypophysis originates from the ectoblast, while in almost all other animals it is formed from the cells of the endoblast.

As to the epiphysis, I have made certain statements in the paper which has recently appeared on the third eye of the Lampreys. All ganglia (of the head, as also of the trunk) are produced from the cells of the ectoderm. The cerebral ganglia appear to arise at a very early stage. They subsequently separate from the epidermis, and appear to be related to the mesoblast. In embryos of from 2 to 3 millim. in length, however, we still find them in connexion with the integument. The spinal ganglia arise later on, and not above the spinal cord, but to the side of it. I have observed epithelial cells extending inwards from the skin like a plug between the protovertebræ. At a subsequent period they lay near the spinal cord, already separated from the skin, and forming a roundish independent group. From the spinal cord there proceeded a short fascicle of nerve-fibres—that is, a root—in the direction of the ganglion-cells. A junction between them was not as yet established.

In concluding this short communication I cannot refrain from mentioning that the description and figures by A. Dohrn of the cerebral ganglia (as, for instance, those of the trigeminus, ophthalmicus, facialis, vagus, and other nerves) are in the highest degree true to nature. I possess a large series of preparations, which show precisely the same picture as his figs. 1, 2, & 4 of pl. 10, and especially fig. 6 of pl. 11 (Bd. viii. Heft 2).

VI.—Notes on *Apteryx Haastii*.

By WALTER ROTHSCHILD.

MR. FORBES has expressed it as his opinion that *Apteryx Haastii* is a natural hybrid between *A. australis* and *A. Owenii*. I have paid much attention to this question as well as to the study of this genus generally, having had during the last four

years over seventy living Kiwis of four species, and having examined some one hundred and sixty preserved specimens, of which over one hundred belong to my collection (in spirit, skins, and skeletons), belonging to five or, possibly, six species. More especially of *A. Haastii* I have at present:—

One adult male, alive.
 One young male, alive.
 Two adult males and four adult females, in skins.
 Two young males, in skins.
 Two chicks, in skins.
 One adult female, stuffed.
 Two adult males and two adult females, in spirits.
 One chick, in spirits.
 One adult male and one adult female, in skeletons.
 One egg.

After an examination of these materials I am unable to agree with Mr. Forbes's views. A consideration of the geographical distribution of the various species of Kiwis must lead to a conclusion opposed to them.

<i>Apteryx Mantelli</i> .	}	. . North Island.
— <i>Haastii</i> .		
— <i>australis</i> .	}	. . South Island.
— <i>Owenii</i> .		
— <i>maximus</i>	Stewart's Island.

As *A. Haastii* occurs only in the North Island, where *A. australis* and *A. Owenii* are not found, it is evident that it cannot be a hybrid between them. However, I must mention that on looking over my skins of *A. Owenii* I find that seven specimens from the west coast of the South Island are larger and darker than those from the east coast, and therefore that it is quite possible that this larger race of *A. Owenii* has been mistaken for the true *A. Haastii*. This latter is called "*Roa-Roa*" by the natives, and not Kiwi.

Apteryx Haastii is the largest species of the genus, a female in my possession being considerably larger than the largest known female of *A. maximus*. It is further distinguished by its enormous beak, which, though not so long as that of *A. maximus*, is very much stouter even than that of the recently discovered extinct species.

As far as I can see at present another distinctive character will be found in the cæcum, which seems to differ not only in the two sexes, but also in the various species of the genus.