Spheniscus and of *Eudyptes*, and some of the bones of *Aptenodytes*. This paper is an extremely valuable contribution, and has to some extent anticipated the conclusions at which I have arrived with regard to the subdivision of the Penguins into genera and species.

More recently MM. Gervais and Alix[1] have published a memoir on the osteology and myology of the Spheniscidæ, founded on an anatomical examination of a specimen of *Eudyptes chrysolophus*.

The skeleton, either in whole or in part, of one or other species of Penguin will be found figured in the works of Blumenbach,[2] Brandt,[3] Wagner,[4] Eyton,[5] and Barkow.[6]

In the works of none of the authors above named, however, can I find any approach to a complete comparative description of the osteology of the various species of Penguin, and this deficiency I now endeavour to make good, so far as the material at my disposal will permit.

THE AXIAL SKELETON.

The Skull.

The skulls of all the Penguins which I have had an opportunity of examining being accurately figured (Plates I. to V.), it is unnecessary that I should give a detailed description of each. The following observations, therefore, refer only to the leading and distinctive features of the cranial osteology of each member of the group.

The cranium of every species is completely ossified in the adult, and presents no trace of its original sutures. The form of its exterior closely corresponds with the outline of the contained encephalon, and indicates externally the subdivision of the latter into the cerebral hemispheres and cerebellum. This correspondence is to a certain extent masked by the development of a large transverse ridge, situated on the side of the cranium, to which the squamous, parietal, and occipital bones each contribute a part, as also by the large size of the supra-orbital ledges which accommodate the nasal glands. Apart from these osseous ridges, the correspondence in form between the exterior of the skull and the contained viscus is more striking in the Penguins than in the majority of birds.

The cerebellar prominence of the skull forms a well-marked osseous dome situated immediately above the occipital foramen. In *Eudyptes* the most projecting portion of this dome is rounded, while in *Spheniscus* it is somewhat sharper and more acute. In *Spheniscus minor*, however, as in *Aptenodytes* and in *Pygoscelis*, the cerebellar dome presents a form intermediate between that which characterises the other species of

[1] Journal de Zoologie, tom. vi., 1877.
[2] Handbuch der vergleichenden Anatomie, Tab. 3.
[3] Beiträge zur Kenntniss der Naturgeschichte der Vögel.
[4] Icones Zootomicæ.
[5] Osteologia Avium.
[6] Syndesmologie der Vögel, 1856.