

1879. Dr. Hans Gadow, in his paper on the digestive organs of birds,<sup>1</sup> describes the alimentary viscera of the Tubinares, apparently based upon an examination of the four genera *Puffinus*, *Fulmarus*, *Procellaria*, and *Diomedea*. The arrangement of the intestinal folds is "orthocœlic," the intestine being disposed in eight folds lying close to and parallel with each other. In their orthocœlic character the Tubinares agree with the Steganopodes and Erodii, differing from the "cyclocœlic" Pelargi, Raptatores, and Laridæ.

1881. In a posthumous paper,<sup>2</sup> published in the "In Memoriam" volume of his works, the late Professor A. H. Garrod describes the anatomy of the Diving Petrel (*Pelecanoïdes urinatrix*), based upon an examination of specimens collected during the Challenger's voyage. *Pelecanoïdes* has no *ambiens* muscle, in which respect it differs from all the other true Petrels, and resembles *Bulweria* alone of them in its formula A.X. The main vein of the leg, the femoral vein, is superficial to, instead of deep of, the tendon of the femoro-caudal muscle, a peculiarity hitherto only observed in the genus *Dacelo* amongst the Kingfishers. "The Procellariidæ may be divided into the Storm-Petrels or Thalassidrominæ, and the true Petrels or Cestrelatinæ, the former differing from the latter in possessing the accessory semi-tendinosus muscle." These two groups therefore correspond to those already distinguished by Garrod in his former paper as the "Storm-Petrels" and the Fulmaridæ.

As regards the systematic position of the Petrels it is said—"I may mention that since writing my paper 'On Certain Muscles of Birds, and their value in classification,' I have changed my views as to the affinities of the Procellariidæ. In that communication I place the family amongst the Anseriformes; now it is evident to me that it is with the Ciconiiformes that they are most intimately related. Reason for my change of opinion will be found in what here follows." Unfortunately the paper was never completed, and the reasons mentioned not stated in consequence.

In a paper read before the Zoological Society on June 18th of the same year<sup>3</sup> I proposed to make the so-called *Procellaria nereis* of Gould, the *Procellaria fregata* of Professor Garrod's earlier papers, the type of a genus to be called *Garrodia*, it being not a true Petrel at all, but one of the allied group without cæca and with a formula AB.XY, the Thalassidrominæ of Garrod, which includes besides the genera *Oceanites*, *Fregatta*, and *Pelagodroma*, the family so formed constituting my Oceanitidæ.

1882. Lastly, in the concluding part of the Atlas to the great work on Madagascar,<sup>4</sup>

<sup>1</sup> Versuch einer vergleichender Anatomie des Verdauungs-systemes der Vögel, Jen. Zeitschr. f. Naturw., Bd. xiii. (n.f. vi.), pp. 92-171, 339-403, pls. iv.-ix., xvi.

<sup>2</sup> 85. Notes on the Anatomy of *Pelecanoïdes (Puffinuria) urinatrix*, loc. cit., pp. 521, 522.

<sup>3</sup> Proc. Zool. Soc., 1881, pp. 735, 736.

<sup>4</sup> Histoire physique, naturelle et politique de Madagascar, publiée par Alfred Grandidier, xv.; Histoire naturelle des oiseaux, x. iv., Atlas iii., Paris, 1881. Plates 293, 294, 297, 298, 299, 300.