

quintus. The peculiar form of the *biceps brachii* muscle, which is in two separate parts, the humeral head forming a patagial slip. The presence of hæmapophyses on the dorsal vertebræ, the centres of which are marked by more or less developed pneumatic depressions. The non-pneumatic humerus. The different pterylosis, and the nearly equal size of the lobes of the liver. The greater size of the hallux, which always has a distinct nail externally (quite absent in *Pelecanoïdes*).

“*Pelecanoïdes* stands alone (amongst the Procellariidæ) in the absence of the *ambiens* muscle; the peculiar disposition of the femoral vein; the absence of a hallux; and the single interclavicular air-cell. Moreover, as in *Bulweria* only of other Tubinares, its myological formula is A.X., there being no accessory head to the femoro-caudal muscle.

“The Tubinares as a group may be shortly defined as follows:—

“Holorhinal schizognathous birds with a large, broad, depressed, pointed vomer, and truncated mandible; with the anterior toes fully webbed, and the hallux either very small and reduced to one phalanx, or absent; with a tufted oil-gland and large supra-orbital glands furrowing the skull; with the external nostrils produced into tubes, usually more or less united together dorsally; with an enormous glandular proventriculus and small gizzard of unusual shape and position, and with the commencing duodenum ascending; with a completely double great pectoral muscle, and a well-developed *pectoralis tertius*; with the femoro-caudal and *semi-tendinosus* muscles always present, and the *ambiens* and accessory femoro-caudal only exceptionally absent.

“Some at least of these characters—the structure of the hallux, the formation of the nostrils,¹ and the form of the stomach—are quite peculiar to the Tubinares, not being found in any other birds, though of universal presence in these. These features alone would at once suffice to distinguish them from any other Avian order, whilst the combination of other characters is as unique. It is therefore a difficult task to assign to this group a satisfactory position in any arrangement of the class Aves, owing to its much isolated position.

“Most previous writers have considered the Petrels as more or less closely connected with the Gulls (*Laridæ*), but the grounds for any such collocation are very slight, in my judgment, now that the structure of the two groups is better known.

“The Gulls exhibit no trace of any of the characteristic peculiarities of the Petrels,² and differ widely from them in the important feature of being schizorhinal.³ The peculiar disposition in two quite separate layers of the great pectoral muscle in the Tubinares is quite unlike anything seen in the Gulls or their allies, whilst the large *pectoralis*

¹ The Caprimulgine genus *Siphonorhis* (Sclater, *Proc. Zool. Soc. Lond.*, p. 78, 1861) perhaps approaches the Tubinares more nearly in this point than any other bird known to me.

² I cannot understand Professor Huxley's remark (*Proc. Zool. Soc. Lond.*, p. 455, 1867) that “the Gulls grade insensibly into the Procellariidæ.”

³ Cf. Garrod, *Proc. Zool. Soc. Lond.*, p. 37, 1878; *Collected Papers*, p. 128.