

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,¹ and differ widely from them in the important feature of being schizorhinal.² 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 tertius* of the Petrels is altogether unrepresented in the *Laridæ*. The character of the *cæca* in the two groups is also quite different, and there are no special osteological resemblances between the two groups so far as I can see, for the mere schizognathous character of the palate is, we now know, not necessarily a mark of affinity. The character of the young plumage, the condition of the young birds, and the number, shape, and coloration of the eggs—points on which some stress may be laid in questions of this kind—are totally dissimilar in the two groups, as indeed are the habits of the adult birds themselves, though no doubt both are “web-footed” and more or less pelagic in habit. Such resemblances, however, can hardly be seriously considered as indicating any real affinities.³

L’herminier, A. Milne-Edwards, and Huxley have all, in describing various points in the osteology of the Tubinares, pointed out similarities of various kinds between their osseous structure and that of various forms of the Steganopodes, though they still kept them close to the *Laridæ*. Eyton, on the other hand, places the various Petrels he describes in the family “*Pelecanidæ*,” the Gulls forming a separate family by themselves.

But no one will be prepared, I think, to dispute that the Steganopodes are allied to the Herodiones, including under that name the Storks and Herons, with *Scopus*, only. Thus, on osteological grounds alone, there is sufficient ground for placing the Tubinares in the vicinity of the Steganopodes and Herodiones. And, in fact, neglecting the desmognathous structure of the palate—the taxonomic value of which *per se* is becoming more and more dubious as our knowledge of the structure of birds increases—there is little in the characters assigned to the groups Pelargomorphæ and Dysporomorphæ by Professor Huxley (*l. c.*, p. 461) that is not applicable to the general Petrel type.

The completely double great pectoral muscle is a characteristic only found, as already observed, in the Ciconiidæ, Cathartidæ, the Steganopodes (except *Phalacrocorax*), and

¹ I cannot understand Professor Huxley’s remark (*Proc. Zool. Soc.*, 1867, p. 455) that “the Gulls grade insensibly into the *Procellariidæ*.”

² *Cf.* Garrod, *Coll. Papers*, p. 128.

³ No views regarding the affinities of the Petrels other than that to the *Laridæ* already discussed, and that to the Ciconiiform birds have, so far as I know, been seriously advanced by ornithological writers, Professor Garrod having abandoned his early idea that the Tubinares were probably related remotely to the *Anseres* and their allies, (*cf.* *Coll. Papers*, pp. 220 and 521).