

the Steganopodes,—corresponds to the Ciconiiformes of Garrod,¹ with the addition, as he had already himself suggested,² of the Tubinares.

“But his earlier definition of that group, in so far as it relates to the absence in it of the accessory femoro-caudal muscle (B), will have to be modified, inasmuch as this muscle is, as shown above, generally present in the Tubinares. These too, differ markedly from the other Ciconiiformes in the well-developed *pectoralis tertius* (very small or absent in the others), in the large size of the vomer, and the non-desmognathism of the palate, though as regards this latter character it has already been pointed out that the Albatrosses are nearly desmognathous, whilst the desmognathism of the Cathartidæ is of a different kind to that prevalent in the other forms concerned.

“The two existing groups of Petrels are clearly related to each other so much more nearly than to any other group of birds that it is evident that they must have had a common ancestor that possessed the peculiar features characterising the Tubinares as an order. Such a form may therefore be safely assumed to have had—

“1. The characteristic nostrils of the group.

“2. The equally characteristic stomach and duodenum.

“3. Webbed feet, with a small hallux of a single phalanx.

“4. A double great pectoral muscle, and large *pectoralis tertius*.

“5. A formula AB.XY, a *gluteus primus* and an *ambiens* muscle.

“6. Short colic cæca of characteristic shape.

“7. A tufted oil-gland, and the pterylosis characteristic of the group.

“8. A holorhinal schizognathous skull, with large depressed vomer, great supra-orbital glandular depressions, no basipterygoid facets, and a truncated mandible.

“9. A short, broad, deeply-keeled sternum, more or less entire behind, with strong clavicles.

“10. A peculiar humerus, and tibia with large cnemial crest.

“No living Petrel has this combination of characters; the Oceanitidæ having lost their colic cæca, the Procellariidæ the accessory semi-tendinosus (Y) muscle, and both groups having become specialised in other ways.

“Such an ancestral form as here indicated may be supposed to be an early, and in some respects—as shown by the large vomer, schizognathous palate, large third pectoral muscle and formula AB.XY—more primitive form, that diverged from the common stock of the Ciconiiform birds very early, when the latter had only acquired the most prevalent of the characters now existing in the various groups of that suborder. One branch of this stock has since become greatly modified in the Tubinarian direction, whilst the other branch, losing “B” and the large vomer, and becoming desmognathous, split up and gave origin, at different times and in different ways, to the remaining families of the group.

¹ *Proc. Zool. Soc. Lond.*, p. 120, 1874; *Collected Papers*, p. 218.

² *Collected Papers*, p. 521.