

inspection, there is a slight elevation visible on the area usually occupied by the hallux, and on dissecting away the skin a single minute ossicle, of triangular shape, is to be found attached to the tarso-metatarsus and surrounding structures by fibrous tissue. This single bone probably represents the metatarsal element. In *Diomedea exulans* it has a length of 0.2 inch (5 mm.); in the other two species, particularly in *Thalassiarche*, it is much smaller, not exceeding here 2 mm. in length (*vide* figs. *b-d*). I have been unable to find it at all in *Pelecanoïdes*, even in quite young birds.

The anterior three toes are well developed, and are completely webbed, the web however not extending to the hallux. The claws are well developed; in the Procellariidæ they are always more or less curved, compressed, and sharp-pointed (*vide* Pl. I. fig. 5, *b*, *Procellaria pelagica*), whilst in the Oceanitidæ they become lamellar, depressed and flattened, a shape that attains its maximum in the genus *Fregetta* (*vide* figs. 1-4, *b*). Hence an inspection of the legs alone of a Petrel will show, by the character of the tarsal scutellation and the form of the claws, whether it is one of the Oceanitidæ or of the Procellariidæ.

*Pterylosis*.—The pterylosis of this group seems to be, on the whole, very uniform throughout, both in the form of the tracts and the structure of the feathers.

The number of rectrices and remiges is not absolutely constant however, and there are also some slight differences in the form of the dorsal and lumbar tracts.

As regards the number of rectrices in the Tubinares, twelve is the ordinary number in both families, and this is never reduced,<sup>1</sup> and only in a few instances exceeded. *Fulmarus* and *Daption* have fourteen tail feathers, as already pointed out by Nitzsch, and the same is the case in *Thalassæca*; *Ossifraga* has as many as sixteen. *Aeipetes antarcticus* (in both the specimens examined by me) has, on the other hand, unlike *Thalassæca*, the normal number of twelve.

The number of primary remiges is always ten, but that of the secondaries varies. The number of these in the Oceanitidæ is always ten: in the Procellariidæ it is never, even in the smallest forms (*Pelecanoïdes*, *Cymochorea*, *Halocyptena*, *Procellaria*), less than thirteen. *Bulweria* has twenty, which is about the average number throughout the group, increasing however in the larger forms to twenty-nine (*Ossifraga*, *Thalassiarche*), thirty (*Diomedea brachyura*), and even, in the largest of all, *Diomedea exulans*, to thirty-seven.<sup>2</sup> The pollex never has the claw so often present in birds on that digit.

As regards the distribution of the tracts of contour feathers, I may quote Nitzsch's general description (*Pterylography*, Ray. Soc. Ed., pp. 143, 144):—"In this family the tract-formation of *Lestris* is elevated into the type of a group, undergoing scarcely any change in the form of the inferior tract, but showing some little modification in the dorsal

<sup>1</sup> Nitzsch (*Pterylogr.* Ray Soc. Ed., p. 141) thought that the smaller species of Petrels had but ten tail feathers, but such is not in reality the case.

<sup>2</sup> Nitzsch even describes the species as having as many as forty secondaries. The total alar expanse of the specimen I counted this number in was 9 feet 7½ inch.