

each other very much in the details of their muscular structure, though in the fore-limb the structure of the *biceps* and the termination of the *tensor patagii* tendons, and in the hind-limb the presence or absence of the *ambiens* and the accessories to the femoro-caudal and *semi-tendinosus*, present characters available for taxonomic purposes.

#### *Anterior Extremity.*

*Pectoralis primus*.—This muscle is always largely developed in the Tubinares, as might have been expected from their great powers of flight. It is peculiar in that it is always *easily divisible into two quite separate layers* superimposed on each other, besides which it gives off thin fan-like cutaneous branches. A similar disposition of the *pectoralis primus* in two distinct layers is very characteristic of many of the Ciconiiform birds of Garrod, occurring in all the Storks and Cathartidæ, and in *Phaëthon*, *Fregata*, *Plotus*, *Sula*, and *Pelecanus* amongst the Steganopodes. A tendency to a similar condition, though the two layers are only separable with difficulty, may be seen in the Ardeidæ, Falconidæ, and *Scopus*.

The *superficial* layer of the *pectoralis primus* arises (*vide* Pl. III. figs. 1 and 2, *p. 1a*) from the posterior and lateral margins of the body of the sternum, from the margin of the sternal *carina*, and from the inferior border and external surface of the clavicles. In the latter position it is divisible into two layers, one arising from the extreme margin, the other and deeper from the surface, of those bones. The common insertion into the large humeral crest is very tendinous behind, more fleshy anteriorly, these two parts being somewhat divided by the thick tendon of the deep layer of the muscle (*vide* Pl. III. fig. 1, *p. 1a*).

The *deep* layer of the *pectoralis primus* arises chiefly from the body and keel of the sternum outside the origin of the *pectoralis secundus*,—from which it is separated by a strong fascia,—from the tip of the furcula, and from the fascia over the second pectoral, especially anteriorly, where a large air-space separates these two muscles in the interval between the furcula and coracoid (Pl. III. figs. 1 and 2, *p. 1b*). Its tendon is thin anteriorly, strong and cylindrical posteriorly, and is inserted, as already described, between the two parts of the tendon of the superficial layer which arches over it.

The muscle is perforated a little anteriorly to its posterior border, and in front of the strong tendinous band dividing it, by a group of vessels and nerves destined for the supply of the muscles and skin incumbent on it. The most posterior of its fibres do not apparently join the main tendon of insertion, but are lost in the loose fibrous tissue occupying the axillary region.

There is a large cutaneous branch given off by the superficial layer close to its insertion, which runs back over the humerus, and is distributed as a fan-shaped expansion to the outer branch of the pectoral tract. Another cutaneous branch comes off from the