

between the similarly ossified and fused first three bronchial rings. The fourth pair of rings is also ossified, but free from those that precede it, at least anteriorly. Posteriorly the first four bronchial and last four tracheal rings are firmly co-ossified into a large pessular box, whilst ossification in the median line (both before and behind) of a number of the cartilaginous tracheal rings above this forms the line of attachment for the median septum which divides the tracheal tube for an extent of about 1.25 inch.

In *Fulmarus glacialis* the syrinx is very similar; the four bronchial rings are anteriorly ossified, as are many of the tracheal rings in their median area. The tracheal septum is still more developed than in *Thalassæca*, extending for about the lower two-fifths of the trachea—a distance of nearly  $2\frac{1}{2}$  inches.

The extraordinary syrinx of *Ossifraga* is a still further modification of this type (figs. 17, 18, 19). A number of the last tracheal rings (nine on one side, ten on the other,



FIG. 15.—Syrinx of *Thalassæca glacialis*, from before.

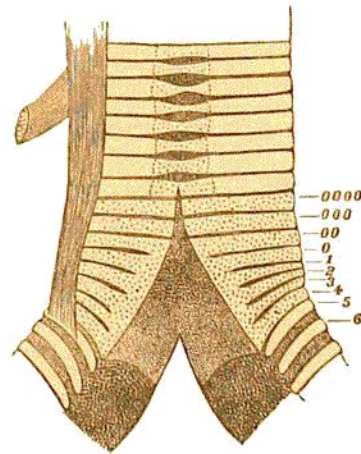


FIG. 16.—The same, from behind.

in the specimen—a young one—figured) become completely ossified, as are the first four or five bronchial rings, of which only the first two are complete. The inferior part of the trachea is divided inferiorly for a short way into two quite complete and separate tubes; the posterior ends of the lowest tracheal rings being so much incurved that each actually, inferiorly, forms two complete rings, those of opposite sides being quite separate, whilst above, by the gradual diminution of their opposed interior halves, they become, when viewed from outside, simple rings of the normal tracheal type. On section, however, it is seen that their ends are still incurved to form a tracheal septum like that of *Fulmarus* and *Thalassæca*. This completely divides the trachea into two tubes for a space of about  $3\frac{1}{2}$  inches, terminating above by a free semi-lunar border, concave upwards (fig. 19, *c*, *d*). In fig. 19 three sections are given of the inferior portion of the trachea made along the lines *a*, *b*, *c* in fig. 17, to show how the two tracheal tubes, separate below, gradually unite above.