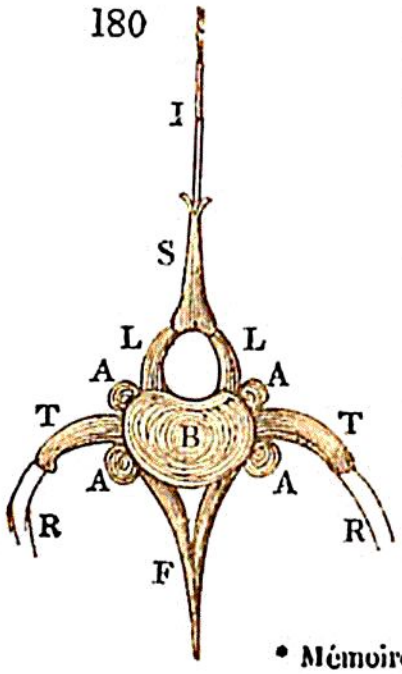
circumstances of the system, and to the particular intentions of their formation.

There is scarcely any part of the osseous fabric of which the variations better illustrate the strict unity of plan and the beautiful law of gradation observed by nature in all her operations, than the spine. In studying the various modifications which this part of the skeleton undergoes, it will be useful to bear in mind the principles which appear to regulate its formation, and which Geoffroy St. Hilaire has deduced by following the history of its early growth, and noticing the order in which its several parts are developed.* In common with all bones, the vertebræ take their rise from certain determinate points, or centres of ossification, where, at first, detached pieces of bone are formed, destined to unite together so as to compose the entire bone. An accurate knowledge of the general forms and relative situations of these elementary pieces is of much importance, because we find that particular circumstances determine the development of some of these parts much earlier, and to a greater extent than other parts, and thus lead to great differences in the shapes and proportions of various bones, at different periods of their growth, although their origin and composition are essentially the same.

The number of elements which enter into the composition of a vertebra has been differently estimated by different physiologists; but the following are certainly entitled to that character. They are represented in their relative situations in Fig. 180. The first is the part which forms the *nucleus*, or *body* (B) of the vertebra; and its ossification begins at the centre. Next in importance are the two bony plates, or *leaves*, as they may be called (L, L,) which proceed from the sides of the body, and embrace the spinal marrow which is situated between them. The fourth essential element

180



* Mémoires du Muséum, ix. 79 and 89.