

which is called a *suture*. This is seen in Figures 175 and 176, the former of which represents the upper side of the skull of an infant; and the latter, the same bones when completely ossified.

The union of bony fibres proceeding from different centres of ossification is not indiscriminate, but is found to be regulated by definite laws, and to have certain relations to the general plan of conformation originally established. Each distinct bone is formed from a certain number of ossific centres, which altogether constitute a system appertaining to that bone only, and not extending to the adjacent bones. These pieces unite together, as if by a natural affinity; and they refuse to unite with the bony fibres proceeding from neighbouring centres, and belonging to other groups. The groups themselves are not arbitrary, but are pre-established parts of the original design. Circumstances occasionally, indeed, arise, which may overrule this inherent tendency to preserve the line of separation between two bones; and we then find them coalescing to form a single piece. Such unions are technically called *anchyloses*.

Were this the whole of what takes place in the formation of a bone, the process would not, perhaps, differ very materially from that by which a shell is produced; for a shell, as we have seen, is the result of successive depositions of calcareous matter, forming one layer after another, in union with a corresponding deposit of animal membrane. But the subsequent changes which occur, show that the constitution of bone is totally dissimilar to that of shell: for no portion of the shell that is once formed, and has not been removed, is subject to any farther alteration. It is a dead, though perhaps not wholly inorganic mass; appended, indeed, to the living system, but placed beyond the sphere of its influence. But a bone continues, during the whole of life, to be an integrant part of the system, partaking of its changes, modified by its powers, and undergoing continual alterations of shape, and even renewals of its substance, by the actions of the living vessels.

The form which had at first been rudely sketched, slowly advances towards perfection in the course of its growth;