

pair in other skeletons; in this Game cock, as far as could be judged from the appearance of the lumbar vertebræ, a whole dorsal vertebra with its ribs was missing. We thus see that the ribs (whether or not the little pair attached to the fourteenth cervical vertebra be counted) vary from six to eight pair. The sixth pair is frequently not furnished with processes. The sternal portion of the seventh pair is extremely broad in Cochins, and is completely ossified. As previously stated, it is scarcely possible to count the lumbo-sacral vertebræ; but they certainly do not correspond in shape or number in the several skeletons. The caudal vertebræ are closely similar in all the skeletons, the only difference being whether or not the basal one is anchylosed to the pelvis; they hardly vary even in length, not being shorter in Cochins, with their short tail-feathers, than in other breeds; in a Spanish cock, however, the caudal vertebræ were a little elongated. In three rumpless fowls the caudal vertebræ were few in number, and anchylosed together into a misformed mass.

In the individual vertebræ the differences in structure are very slight. In the atlas the cavity for the occipital condyle is either ossified into a ring, or is, as in *Bankiva*, open on its upper margin. The upper arc of the spinal canal is a little more arched in Cochins, in conformity with the shape of the occipital foramen, than in *G. bankiva*. In several skeletons a difference, but not of much importance, may be observed, which commences at the fourth cervical vertebra, and is greatest at about the sixth, seventh, or eighth vertebra; this consists in the hæmal descending processes being united to the body of the vertebra by a sort of buttress. This structure may be observed in Cochins, Polish, some Hamburgs, and probably other breeds; but is absent, or barely developed, in Game, Dorking, Spanish, Bantam, and several other breeds examined by me. On the dorsal surface of the sixth cervical vertebra in Cochins three prominent points are more strongly developed than in the corresponding vertebra of the Game fowl or *G. bankiva*.

*Pelvis*.—This differs in some few points in the several skeletons. The anterior margin of the ilium seems at first to vary much in outline, but this is chiefly due to the degree to which the margin in the middle part is ossified to the crest of the vertebræ; the outline, however, does differ in being more truncated in Bantams, and more rounded in certain breeds, as in Cochins. The outline of the ischiadic foramen differs considerably, being nearly circular in Bantams, instead of egg-shaped as in the *Bankiva*, and more regularly oval in some skeletons, as in the Spanish. The obturator notch is also much less elongated in some skeletons than in others.

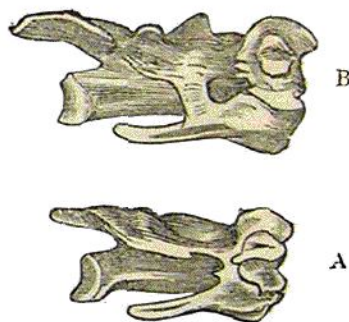


Fig. 37.—Sixth Cervical Vertebra, of natural size, viewed laterally. A. Wild *Gallus bankiva*. B. Cochin Cock.