

column of much of its flexibility. Each pair of ribs surrounded the body with a complete girdle, formed of five pieces, as in the Chameleon and Iguana ; whence, no doubt, as with the Chameleon, great facilities existed for the contraction and dilatation of the lungs.

The breast, the pelvis, and the bones of the anterior and posterior

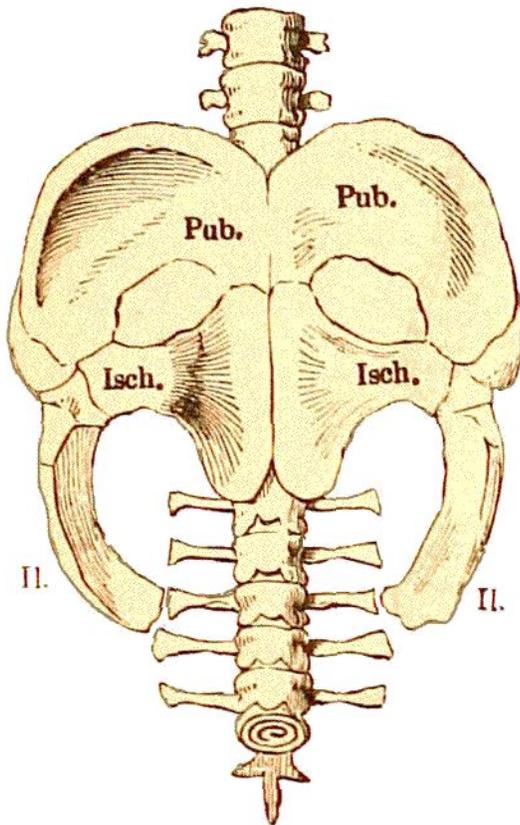


Fig. 103.—Sternum and pelvis of Plesiosaurus. Pub., pubis ; Isch., ischium ; Il., ilium.

extremities furnished an apparatus which permitted the Plesiosaurus, like the Ichthyosaurus and existing Cetaceans, to sink in the water and return to the surface at pleasure (Fig. 103). Prof. Owen, in his "Report on British Reptiles," characterises them as air-breathing and cold-blooded animals ; the proof that they respired atmospheric air immediately, being found in the position and structure of the nasal passages, and the bony mechanism of the thoracic duct and abdominal cavity. In the first, the size and position of the external nostrils (Fig. 102), combined with the structure of the paddles, indicate a striking analogy between the extinct Saurians and the Cetaceans, offering, as the Professor observes, "a beautiful example of the adaptation of structure to the peculiar exigencies of species."

While the evidence that they were cold-blooded animals is found in the

flexible or unanchylosed condition of the osseous pieces of the occiput and other cranial bones of the lower jaw, and of the vertebral column ; from which the Professor draws the conclusion that the heart was adapted for transmitting a part only of the blood through the respiratory organs ; the absence of the ball-and-socket articulations of the bones of the vertebræ, the position of the nostrils near the summit of the head, the numerous short and flat digital bones, which must have been enveloped in a simple undivided integumentary sheath, forming in both fore and hind extremities a paddle closely resembling that of the living Cetacea. The paddles are larger and more powerful than those of the Ichthyosaurus, to compensate for the slight assistance the animal derived from the tail. The latter—shorter, as compared with the length of the rest of the body, than in the Ichthyosaurus—was more calculated to act the part of a rudder,