

changes I have been describing, present, during their whole lives, a great similitude to the first stage of the tadpole. This is the case with the *Axolotl*, the *Proteus anguinus*, the *Siren lacertina*, and the *Menobranchius lateralis*, which permanently retain their external gills, while at the same time they possess imperfectly developed lungs. It would therefore seem as if, in these animals, the progress of development had been arrested by nature at an early stage, so that their adult state corresponds to the larva condition of the frog.\*

In all warm-blooded animals respiration becomes a function of much greater importance, the continuance of life being essentially dependent on its vigorous and unceasing exercise. The whole class of Mammalia have lungs of an exceedingly developed structure, composed of an immense number of minute cells crowded together as closely as possible, and presenting a vast extent of internal surface. The thorax, or cavity in which the lungs, together with the heart and its great blood vessels, are enclosed, has somewhat the shape of a cone; and its sides are defended from compression by the arches of the ribs, which extend from the spine to the sternum, or breast-bone, and produce mechanical support on the same principle that a cask is strengthened by being girt with hoops, which, though composed of comparatively weak materials, are yet capable, from their circular shape, of presenting great resistance to any compressing force.

While Nature has thus guarded the chest, with such peculiar solicitude, against the efforts of any external force, tending to diminish its capacity, she has made ample provision for enlarging or contracting its diameter in the act of

\* Geoffroy St. Hilaire thinks there is ground for believing that Crocodiles and Turtles possess, in addition to the ordinary pulmonary respiration, a partial aquatic abdominal respiration, effected by means of the two channels of communication which have been found to exist between the cavity of the abdomen and the external surface of the body: and also that some analogy may be traced between this aquatic respiration in reptiles, by these *peritoneal canals*, and the supposed function of the swimming bladder of fishes, in subserviency to a species of aerial respiration.