

Secondly, the circumference of their thorax must be extended, and the motions of their ribs limited, that the muscles of the wings may have sufficient space and firmness for their attachment. Both these objects are attained by a modification of the apparatus for breathing. The lungs are highly vascular and spongy, but they are not distended with air. The air is drawn through their substance, passing into the large cavity common to the chest and abdomen; and whilst the great office of decarbonization of the blood is securely performed, advantage is taken to let the air into all the cavities, even into those of the bones.

From what was said in the introductory chapter, of the weight of the body being a necessary concomitant of muscular strength, we see why birds, by reason of their lightness, as well as by the conformation of their skeleton, walk badly. And, on the other hand, in observing how this lightness is adapted for flight, it is remarkable how small an addition to their body will prevent them rising on the wing. If the griffon-vulture be frightened after his repast, he must disgorge, before he flies; and the condor, in the same circumstances, is taken by the Indians, like a quadruped, by throwing the lasso over it.\*

As every one must have observed, the breast-

\* The subject is continued in the "Additional Illustrations."