

compensation, resembling that which Von Buch considers to have been afforded by the lobes of Ammonites to the inhabitants of those shells. This compensation will be illustrated by a comparison of the lobes in *N. Sypho* (Pl. 43, Fig. 2.), with a similar provision in the *Nautilus Zic Zac* (Pl. 43, Figs. 3. 4.)*

smaller extremity of the funnel a' . From c , to d , it lines the inside of the subjacent funnel a^2 ; and from d , continues downwards to the termination of the funnel a^2 , on the inside of e . At e , and f , we see the upper termination of two perfect sheaths, similar to that of which a section is represented at $b. c. d$. This sheath, from its insertion between the point of the upper siphon and mouth of the lower one, (Fig. 1, c .), must have acted as a collar, intercepting all communication between the interior of the shelly siphuncular tube and the air chambers. The area of this shelly tube is sufficient, not only to have contained the distended siphuncle, but also to allow it to be surrounded with a volume of air, the elasticity of which would act in forcing back the pericardial fluid from the siphuncle, in the same manner as we have supposed the air to act within the chambers of the *N. Pompilius*.

* On each side of the transverse plate in both these species there is an undulation, or sinus, producing lobes (Pl. 43, Fig. 2. a^1, a^2, a^3 , Fig. 3. a . and Fig. 4. $a. b$.) There is also a deep backward curvature of the two ventral lobes, Fig. 4. $c. c$. All these lobes may have acted conjointly with the siphuncle, to give firm attachment to the mantle of the animal at the bottom of the outer chamber. The shell Fig. 1. is broken in such a manner, that no portion of any lateral lobe is visible on the side here represented. At Fig. 2. a^1 , we see the projection of the lateral lobes, on each side of the convex internal surface of a transverse plate; at a^2 we see the interior of the same lobes, on the concave side of another transverse plate; and at a^3 the points of a third pair of lobes attached to the sides of the largest air-chamber that remains in this fragment.