out, while the adjoining shell-layers are weathered away. The shell of this species was thin during the Schizambonal stage, but thickened rapidly by the accretion of layers within the shell during the Siphonotretal stage. As, however, the parts of these layers around the tube were not perfectly calcified, that organ in exfoliated shells stands out and remains as a projecting tube, after the layers of shell, as above remarked, are weathered away.

In an exfoliated shell, therefore, we have a siphon projecting from what seems to be the inner side of the shell, and simulating the figures given of the interior of the ventral valve of *Siphonotreta unguiculata*, Eichwald.[1] And the resemblance to that species in other respects is significant, for, in the first place, the passage for the pedicle in the new form diminishes in size from that which it had at the close of the Schizambonal stage, until maturity; and it will be noted that in the species of *Siphonotreta* named above, it is said that the internal tube diminishes in size as it passes inward.[2]

It is also stated that in *Siphonotreta unguiculata* the muscle-marks are very near the internal opening of the tube. This is not noticeably the case with the new form when the interior of the shell is completely preserved; but in exfoliated examples where the siphonal tube is exposed, the muscle-markings on the shell-layers remaining, being those of the early Siphonotretal condition, are much nearer the siphon, and so are like those accredited to the species above named.

The new form has no exsert siphon showing on the inner surface of the shell, and it will easily be seen that such a projecting tube would involve anatomical conditions different from those of most of the early Neotrematous Brachiopoda. It would appear that a siphon projecting inside the shell is not an invariable characteristic of *Siphonotreta*, for Davidson figures *S. unguiculata* with a scarcely projecting siphon,[3] and De Verneuil shows the inside of an umbo of *S. verrucosa*, De V., in which the opening for the pedicle lies in a little saucer-shaped hollow, as in our species.[4]

In some species referred to *Siphonotreta*, the pedicle passage opens outward just behind the beak; in others a channel extends along the back of the shell for some distance, and then a hole gives passage to the interior of the shell, there being no siphon or tube. These latter have been divided off by Walcott as the genus *Schizambon*. Since, however, the St. John species agrees exactly neither with this section nor the other, but in its pedicle passage combines the characters of both, it is necessary to establish for it a separate place. Linking together as it does the genera of De Verneuil and Walcott, it would seem proper to regard both *Schizambon* and the new form as subgenera of *Siphonotreta*, and with this view the author would propose for the new form the name PROTOSIPHON, for which the above remarks will give the essential characters.

[1] See "Manual of the Mollusca," S. P. Woodward, London, 1875, p. 390, fig. 201.

[2] Hall and Clarke, "Genera of Palæozoic Brachiopoda," Albany, 1892, p. 110.

[3] GEOL. MAG., London, 1877, Pl. II, Figs. 9, 11. See also Hall and Clarke, "Genera of Palæozoic Brachiopoda," pl. iv, fig. 25.

[4] "Russia and the Ural Mountains," Paris, 1845, vol. ii, pl. i, fig. 14*d*.