

The subgenus *Limea* has hitherto been distinguished from *Lima* solely by the presence of a series of parallel teeth upon each side of the hinge-plate, a feature which cannot be ascertained in the majority of specimens; and the only British species of *Limea* hitherto described has so little in its general aspect to separate it from the young condition of *Lima duplicata* (a shell which is associated with it in the same beds), that any clear external distinction which can be ascertained between them is worthy of notice, more especially when it will also be found to characterize *Limea* as a subgenus.

It is in the auricles that the distinctive feature resides, and it is immediately connected with the hinge-plate beneath: it will be found that the radiating lines which usually ornament the surfaces of the auricles in the *Pectens* and *Limæ* also exist in *Limea*, but that in the latter they abruptly disappear towards the outer angle of each auricle, leaving a small triangular smooth area, which is traversed transversely downwards and inwards by a few elevations; these are placed immediately over and correspond to the grooves which separate the teeth upon the hinge-plate. In all well-preserved specimens this kind of surface is visible upon one or both of the auricles, its distinctness depending upon the condition of the specimen with reference to fossilization and the greater or less prominence of the internal features.

Limea duplicata is abundant in the shelly oolite of Leckhampton Hill; there is also another more ornamented but undescribed species higher in the same formation, and found at many localities in the upper Ragstones of the Cotteswold Inferior Oolite. The peculiarity of the auricles is observable equally in both these species.

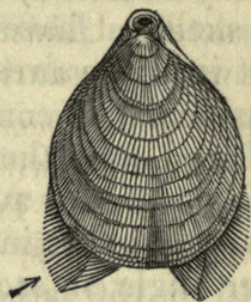
XXIII.—Notes on the *Brachiopoda* observed in a Dredging Tour with Mr. M'Andrew on the Coast of Norway, in the summer of the present year. By LUCAS BARRETT, F.G.S.*

IN the course of our cruise we met with four species of *Brachiopoda*, belonging to three out of the four recent families of those shells. Fresh specimens of one or more of these were obtained almost daily for two months, and as during that time we were within the Arctic circle, enjoying perpetual sunlight, the opportunity of watching their movements was extremely favourable.

1. *Terebratulina caput-serpentis*. This species shows more of

* Communicated by the Author, having been read at the Meeting of the British Association at Glasgow, Sept. 18, 1855.

itself than any other, and protrudes its cirri further; it was met with everywhere, in small numbers, in 30 to 150 fathoms, often attached to *Oculina*. The cirri on the reflected part of the arms are shorter than those on the first part, as shown in the wood-cut. The cirri were almost constantly in motion, and often observed to convey small particles to the channel at their base. When placed in a small glass of sea water the valves gradually opened. Individuals remaining attached to other objects manifested a remarkable power and disposition to move on their pedicles. Detached specimens could be moved about without causing the animal to close its valves. If any of the protruded cirri were touched, the cirri were retracted and the valves closed with a snap, but soon after opened again. When the oral arms are retracted the cirri are bent up, but are gradually uncoiled and straightened when the shell is opened, before which the animal has often been observed to protrude a few of its cirri and move them about, as if to ascertain if any danger threatened. Only on one occasion a current was observed to set in on one side between the two rows of cirri. I had been attempting to ascertain the existence of currents, by introducing small quantities of indigo into the water surrounding the animal with a camel's-hair brush; three times the water was forcibly drawn in, and particles of indigo were seen to glide along the groove at the base of the cirri in the direction of the mouth.



Terebratulina caput-serpentis.

2. *Waldheimia cranium* occurred on several occasions between Vigten Islands and the North Cape, in 25 to 150 fathoms, attached to stones, Balani, &c.; only once in plenty at Omnæsøe. This species belongs to the division of Terebratulidæ with a long loop, and the oral arms are so fixed to the calcareous skeleton as to be incapable of motion, except at their spiral terminations: it has been supposed that these conjoined spiral ends could be unrolled, like the proboscis of a butterfly; but I never saw any disposition of the kind manifested. This species is more lively than *caput-serpentis*, moving often on its pedicle, also more easily alarmed; the cirri are not protruded beyond the margins of the valves; when the shell is closed they are bent up. No currents were detected, though frequently sought for.

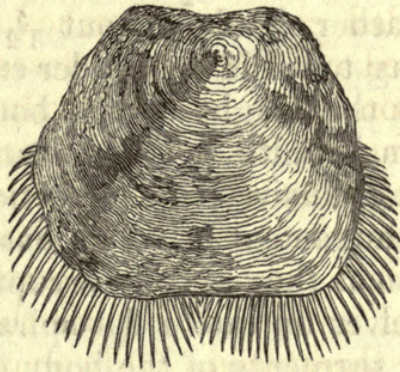


Waldheimia cranium.

3. *Rhynchonella psittacea* was moderately abundant in the extreme north, from Tromsøe to the North Cape, in a living state, in 70 to 150 fathoms water. Dead valves were found at Hammerfest in mud. I found *Rhynchonella* very difficult to examine, the animal being extremely timid and closing its valves on the slightest movement. The coiled arms are extended, so that the cirri when unbent come as far as the margin of the shell. I have frequently seen this species with its valves open, but it never protruded its arms.

*Rhynchonella psittacea.*

4. *Crania anomala*, Müll. sp., was met with between Drontheim and Tromsøe, attached to stones, shells, &c., in 40 to 150 fathoms water; the cirri are protruded, but not the arms, beyond the margin of the shell. The valve opens by moving upon the straight side as on a hinge, without sliding the valve.

*Crania anomala*, Müll. sp.

XXIV.—On the Young States of some Annelides.

By R. LEUCKART*.

[With a Plate.]

In his copious "Observations on the Anatomy and Development of some Invertebrate Marine Animals," Busch has figured (pl. 8. figs. 1-4) the larva of an Annelide of unknown origin, which is particularly remarkable in many respects, and especially from its possession of strong spines and fringes of cilia upon the individual segments. In the spring of 1853 I not unfrequently took similar larvæ from the surface of the sea near Nice and Villa Franca. The stage of development in which they occurred agreed pretty well with that observed by Busch, at least in most of the specimens: younger larvæ were never found, but some occurred which had proceeded a little further, and these proved their increased development especially by the partial or even complete loss of the above-mentioned spines. When the temporary nature of this peculiar apparatus of bristles was established, it was tolerably easy, by the consideration of the other

* Translated by W. S. Dallas, F.L.S., from Wiegmann's Archiv, 1855, p. 63.



Barrett, Lucas. 1855. "XXIII.—Notes on the Brachiopoda observed in a Dredging Tour with Mr. M'Andrew on the coast of Norway, in the summer of the present year." *The Annals and magazine of natural history; zoology, botany, and geology* 16, 257–259. <https://doi.org/10.1080/037454809495527>.

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