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XXVII.—*On a new Fossil Cirripede.*

By JAMES MACADAM, Esq., F.G.S.

FOR several years I have been collecting fossils from the cretaceous formation of the county of Antrim, and my collection is now tolerably extensive, so that I purpose ere long to publish a catalogue of it. This formation extends from the southern to the northern end of the county, and its baseting edges may be easily examined,—in some places near the sea-coast, in others at a short distance from it. It may be well seen in the immediate neighbourhood of Belfast, from which town to Larne the beds are very interesting, and have furnished me with great numbers of organic remains. At different times I had obtained some fossil Cirripedes, but they are by no means of common occurrence. On examining them lately, I distinguished one of a very remarkable shape, which I had found last autumn, near the promontory called Black Head, at the northern extremity of Belfast Lough. The upper beds of the cretaceous formation are a hard white chalk with flints; this graduates into an impure chalk, speckled with particles of greensand; going lower, there is sometimes a kind of sandstone like the firestone of the English upper greensand, sometimes a greenish marl; the lowest bed is a soft, pure greensand. The Cirripedes which I have collected were all from the lower beds. I have not as yet found any in the pure overlying chalk. The specimen which I last procured I showed to Professor Wyville Thomson, of Queen's College, Belfast, who was struck with its resemblance to the *Loricula* described by Mr. Darwin in his Monograph published by the Palæontographical Society. Professor Thomson most obligingly offered to make a strict examination of the specimen for me, and this he has accomplished in the most satisfactory manner. He

has furnished me with a drawing of it, twice magnified, and also with the following minute description, which testifies most fully the pains he has taken, and for the accuracy of which I can vouch most satisfactorily. To Professor Thomson my warmest thanks are due for his trouble, and to him the entire credit must be given for the palæontological investigation.

Belfast, April 8, 1858.

Description of the Fossil. By PROF. WYVILLE THOMSON.

Class CRUSTACEA.

Subclass CIRRIPIEDIA.

Family LEPADIDÆ.

Genus *Loricula* (G. B. Sowerby, jun.).

Loricula MacAdami (Wyville Thomson).

Capitulum of (probably) from ten to twelve valves.

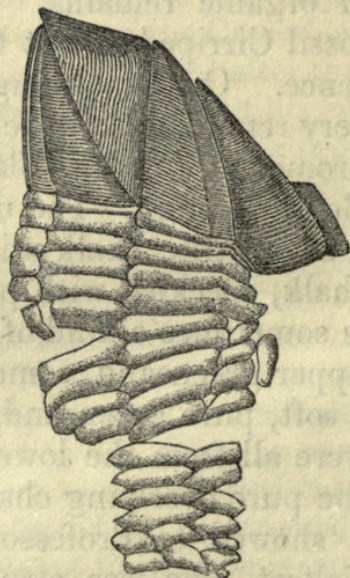
Peduncular plates in the seven transverse rows next the capitulum not more than eight in number, the plates adjoining the scutum and scutal latus much lengthened, formed apparently by an amalgamation of two plates, one corresponding to each of the valves.

Locality. Upper Greensand, passing into Lower Chalk. Black Head Bay, Co. Antrim. (Mr. MacAdam's cabinet.)

This interesting specimen consists of one side of a capitulum, well preserved towards the left hand, somewhat shattered and displaced towards the right, showing five nearly complete valves, with the edges of two others, and a peduncle of imbricated plates with the upper portion perfect, or nearly so, on the left, much broken on the right; the lower part somewhat imperfect, but showing well the loricated structure, and produced to a ring of plates forming evidently a base of attachment.

The matrix is a soft, marly greensand, too friable to admit of the specimen being further exposed with safety. The calcareous plates are preserved,—white, very thin and friable, with a tendency to scale off.

The specimen is in the same position as Mr. Wetherell's unique example of *Loricula pulchella*, Sow., and I shall adopt



Loricula MacAdami.
Magnified twice.

Mr. Darwin's nomenclature of the valves. The specimen is still too imperfect to determine the structure of the genus with accuracy, though I rather think that, on the whole, the additional portions preserved add to the probability of the general correctness of Mr. Darwin's restoration. Another view of the structure appears, however, to be possible, and this view I shall explain after having described the specimen in full.

The capitulum consists of five valves, evidently the valves of one side; a small fragment of one scaled off, showing the inner aspect of the corresponding valve in immediate apposition. Following Mr. Darwin, the right-hand valve in the figure is the *scutum*, rather broadly triangular, the base with a convex outline; an obscure ridge traverses the plate longitudinally near the occludent margin, and towards this ridge the nearly transverse lines of growth slightly dip on either side. Beyond the occludent margin a small portion of the convex interior of the opposing scutum has been exposed. Both of the scuta are somewhat displaced downwards, and the opposite peduncular plates are broken.

The *scutal latus* is broadly triangular; its slightly convex scutal margin overlaps the edge of the scutum, and its almost perpendicular tergal margin overlaps the tergum. A ridge passes from the apex to a projecting angle on the base, about one-third of the breadth of the valve from the scutal margin; the lines of growth are nearly transverse, following the contour of the base of the valve, inclining slightly from either side towards the ridge. The *second latus* is a little narrower, the tergal margin concave, overlapping the tergum; the outline of the carinal margin slightly convex; the base straight, exactly corresponding to the second plate of the upper transverse row of the peduncle; growth downwards. The next plate is closely applied to the left margin of the second latus; it is narrow, triangular, almost linear, resting by a narrow, slightly convex base upon the upper plate of the narrow carinal row of peduncular plates, to which it exactly corresponds in breadth, and with whose straight edges its left contour is continuous. This valve is equal in height to the second latus; the lines of growth are transverse, the development having taken place entirely downwards; both lateral margins are well defined, and beyond the left margin the edge of another plate has been exposed, exactly corresponding to it.

Adopting Darwin's idea, this valve must be either one of the valves of a split carina—one of the parietes of a carina in which the tectum is undeveloped; or we must suppose the carina to have been composed of two parietes and a separate tectum, and the tectum to have been lost.

The *tergum* is broadly triangular, inserted exactly as in Darwin's restoration, between the first and second latera; the lines of growth proceed downwards from the upper left-hand acute angle, with an elbow towards the obtuse angle, the elbows forming an obscure line nearly parallel to the upper margin.

The *peduncle* is mailed, as in *Loricula pulchella*, with imbricated plates arranged in transverse and longitudinal rows.

In the part of the side of the specimen preserved, the first seven upper transverse rows are alike. From left to right, a short, nearly square plate corresponds to the base of the linear left-hand valve; the left edge is straight and vertical, the right slightly prolonged, and passing beneath the end of the plate next it in the row, which is longer and narrower, corresponding to the base of the second latus. The third plate is much longer and narrower, following the basal outline of the scutal latus, a depression receiving its projecting angle, then passing on and forming an umbo opposite the junction of the first latus with the scutum, and continued beneath the scutum. Under the middle of the scutum all these plates are unfortunately broken. In all the seven upper rows this plate becomes much narrower towards the rostrum,—this narrowing, rather than the absence of any of the plates of the vertical rows, seeming to account for the depression of the capitulum towards the rostral aspect.

The right-hand portion of the upper rows is lost. Doubtless they ended, as in *L. pulchella*, in another row of small square plates. In the eighth row, the third plate is divided into two, the junction replacing the umbo opposite the scuto-lateral suture. The end of the third plate passes beneath the fourth.

From the tenth row downwards only two vertical rows are partially preserved, the third and part of the fourth. The third longitudinal series seems to be complete, and contains sixteen plates. In the fifteenth and sixteenth transverse rows the plates are smaller and more crowded, the sixteenth forming a distinct ring of attachment. The lines of growth of the peduncular plates are transverse: a slightly elevated ridge, nearly bisecting the plate, indicates the extent to which the plates of each lower row overlap those of the row above it.

Length 1 inch; breadth 0.5. Closely allied to *Loricula pulchella*. One specific distinction is very evident,—the fusion of plates corresponding to the scutum and the scutal latus in the upper rows of the peduncle.

Loricula MacAdami seems to have been gregarious. Some obscure fragments of others of a group are scattered through the matrix.

With the additional information derived from the specimen, the structure of *Loricula* is certainly more anomalous than ever.

The tergum is of the form which Mr. Darwin anticipated, with lines of growth running generally as in his restoration. Instead of an azygous carina, we have a pair of additional symmetrical capitular valves, a junction formed by their symmetrical free edges continuous with the straight edge of the so-called carinal row of peduncular plates.

I am much inclined to think that the left edge of the specimen is complete, in which case we have a cleft carina, with the lines of growth transverse on each separate half.

The specimen might be reversed: then the narrow upright plate would be a reduced scutum; the so-called second latus a rostral latus; the scutal latus would correspond to the upper latus in *Scalpellum*, and the scutum to the carinal latus. The tergum would have its lines of growth passing, as usual, backwards from the upper and anterior angle, and the capitulum would droop towards the carina, which in this case would be accounted absent in both specimens. In the Antrim example, along the right edge there are some broken fragments, which it would require but little imagination to transform into the remains of a narrow carina; and the direction of the valve, perpendicular to that of the lateral plates, would well account for its frequent loss. This view I suggest as possible, but for the following reasons I am inclined to follow Mr. Darwin.

From the probable position of the animal, principally in the upper part of the peduncle, the peduncle is more likely to have been expanded towards the carinal than towards the rostral aspect; and in the Antrim specimen the upper peduncular plates are much narrowed and compressed to the right hand. Where the valves are fully developed, with no deficiency of lime, the size of the scutum always bears a considerable relation to that of the other valves, and is not likely to be so much reduced. The distinct demarcation of the parietes in the carinæ of several *Scalpella* renders the longitudinal division of this valve a highly probable variation. The genus is not yet sufficiently well known to allow us to come to a decided conclusion.

XXVIII.—*A List of the Orchidaceous Plants collected in the East of Cuba by Mr. C. Wright; with Characters of the new Species.*
By Prof. LINDLEY, F.R.S.

HAVING been favoured by my friend Dr. Asa Gray with a complete set of the Orchids dried by Mr. Wright during his late visit to Cuba, it has appeared to me desirable that some account of them should be published without loss of time; for they serve to show how rich in new species of the Order is the vegetation



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