gyny is of the highest importance in connexion with the other characters mentioned above, as opposed to the vermicular form and white colour—characters common to most burrowing animals and plants.

If this proves correct, there will only remain among the Cœlenterata Lumbrici, Hirudines, Annelida, Echinodermata*, Nematoidea, Tunicata, Bryozoa, Brachiopoda, Ctenophora, Rhizopoda, Spongiaria. It seems very doubtful whether these divisions together would correspond to the three other subkingdoms. The limits of the second subkingdom, Arthropoda, are much litigated, as the lowest Crustacean does not show the same degradation of the copulatory organs as the Fishes among Vertebrata, and the Acephala among the Mollusca. I therefore consider it probable that the subkingdom Articulata, chiefly on account of the nervous system, ought to be reestablished as it was defined by Cuvier.

XLVII.—*Notes on the Palæozoic Bivalved Entomostraca.* No. VI. *Some Silurian Species* (Primitia). By Professor T. Rupert Jones, F.G.S., and Dr. H. B. Holl, F.G.S.

[Plate XIII.]

In the 'Annals of Natural History' for August 1855, September 1855, and April 1857 were published descriptions of some Silurian Bivalved Entomostraca, comprising, among others, *Beyrichiæ* of three types,—"simplices," "corrugatæ," and "jugosæ." The first of these groups, the simple or unisulcate, seems to us now to be deserving of generic distinction, since, among a still larger number of forms, we find a persistent occurrence of the chief features, with a passage towards *Leperditia*, by the complete loss of the furrow, rather than towards the two-furrowed or real *Beyrichiæ*.

We do not presume, however, that we hereby do more than somewhat improve our classification of these necessarily obscure Silurian Entomostraca, represented only by carapace-valves, always minute and often variable in form and ornament, besides being subject to alterations by pressure and by chemical change, and rarely to be cleared of their matrix on all sides. In some cases, too, we have had to be content with what we could make out of casts and imprints.

There remain, therefore, several difficulties in classifying these little Bivalve Entomostraca—and especially since with the total disappearance of the dorsal sulcus we do not seem necessarily to

* According to Mr. Williamson, closely allied to the Annelida (British Association Report, 1857).

enter on a distinct genus, judging from the general shape and character of some of these minute valves associated with others that are furrowed and, from similarity of style and structure, apparently congeneric with them. We allude to the dwarf forms of *Leperditia*, on one hand, where relative size is often the only available basis of distinction (for the eye-spot may be wanting, the muscle-spot invisible, and the flanged edges may be hidden), and, on the other hand, to those true *Beyrichiæ* with a single sulcus, and in which the second sulcus is reduced to a minimum or altogether wanting (*B. arcuata*, &c.). In this case also relative size is distinctive, as well as, perhaps, the difference of geological horizon.

Another difficulty is found in defining the probable alliances of some minute Silurian Entomostraca which have been grouped under "Cytheropsis," and which in outline agree with *Primitia*, but want the sulcus altogether. It is possible, however, that the sulcus is not an essential character zoologically, and that the merely slight impression (as in *P. Beyrichiana* and *P. obsoleta*) leads us to altogether non-sulcate forms: and here the balance of probabilities, judged of by the general aspect of the specimens, must be our guide; and we must still be content with imperfect classification, if we wish to make our present knowledge of these little Palæozoic fossils available. If, therefore, they are to be catalogued and brought into relationship with their larger contemporary allies and their modern representatives, we must accept and make the most of such features as are apparent, and give credit for probable divergency in the unpreserved soft parts when the valves show differences of contour, foldings, and sculpture. Hence we have been induced to value more highly than formerly the differences in recorded varieties of the so-called *Beyrichia strangulata* (Annals Nat. Hist. Sept. 1855), and we shall offer diagnoses for them accordingly.

Primitia, gen. nov.

Carapace minute, bivalved, either equivalved or nearly so, convex, more or less oblong, often approaching *Leperditia* in shape, by the sloping of the dorsal angles; hinge-line straight, sometimes nearly as long as the valve. Surface of each valve usually impressed on the dorsal region, either medially or towards the anterior extremity, with a vertical sulcus, variable in size, sometimes barely visible, sometimes passing into, or even merely represented by, a navel-like pit; and sometimes the sides of the sulcus are swollen, and even raised up into tubercles*.

* With some additional details, the diagnosis for "Beyrichiæ simplices," given in Ann. Nat. Hist. ser. 2. vol. xvi. p. 85, serves for *Primitia*.

Table of the Distribution of Primitia.

Name.	Having	Formation.	Locality.
1. P. strangulata, *Salter*, sp....	a sulcus	Lower Silurian	Lancashire.
1*. ——, var. *α*.....	,,	,,	Pembrokeshire.
2. P. Salteriana, *nov.*	,,	,,	,,
3. P. semicordata, *nov.*	,,	,,	Salop.
4. P. simplex, *Jones*.....	,,	,,	Portugal and Salop.
5. P. Logani, *Jones*	,,	,,	Canada.
5*. ——, *var.* reniformis ...	,,	,,	,,
5**. ——, *var.* leperditioides.	,,	,,	,,
6. P. matutina, *nov.*.....	no sulcus	,,	Salop.
7. P. Seminulum, *Jones*	a sulcus	Upper Silurian	Montgomery.
8. P. sigillata, *Jones*.....	,,	,,	Beechey Island.
9. P. variolata, *nov.*	,,	,,	near Malvern.
9*. ——, *var.* paucipunctata.	,,	,,	,,
10. P. rugulifera, *Jones*	,,	,,	Beechey Island.
11. P. renulina, *nov.*	,,	,,	near Malvern.
12. P. mundula, *Jones*	sulcus and tubercles (faint)	,,	Sweden and near Malvern.
13. P. nana, *nov.*	sulcus and tubercles	Lower Silur.	Salop.
14. P. bicornis, *Jones*.....	sulcus and tubercles (strong)	,,	,,
15. P. umbilicata, *nov.*	pit	Upper Silurian	near Malvern.
16. P. cristata, *nov.*	,,	,,	,,
17. P. tersa, *nov.*	,,	,,	,,
18. P. trigonalis, *nov.*	pit (faint)	,,	,,
19. P. Beyrichiana, *nov*.....	very faint sulcus	,,	Sweden.
20. P. Roemeriana, *nov*.....	,,	,,	near Malvern.
21. P. obsoleta, *nov.*	,,	,,	Sweden.
22. P. oblonga, *nov.*	no sulcus	,,	,,
23. P. ovata, *nov.*	,,	,,	,,
24. P. semicircularis, *nov.*	,,	,,	,,
25. P. pusilla, *nov.*.....	small sulc.	Lower Silurian	near Malvern.
26. P. concinna, *Jones*	no sulcus	Upper Silurian	Canada. Gothland; Nova Scotia.
27. P. muta, *nov.*	,,	,,	Beechey Island.

1. *Primitia strangulata*, Salter, sp.

Beyrichia strangulata, Ann. Nat. Hist. ser. 2. vol. xvi. p. 171, pl. 6. fig. 18.

This is one of the largest forms belonging to *Primitia*, and it has a larger marginal rim than any other. Found in calcareous schists (Lower Silurian) at Coniston Waterhead, Lancashire.

This species was mentioned, under the provisional name of "Cytherina lævigata," by Mr. Salter in 1845 (Quart. Journ. Geol. Soc. vol. i. p. 445), as occurring abundantly in the Conis-

ton Limestone; but in 1852 (Brit. Pal. Foss. Camb. Mus. Appendix A, p. ii.) he decided to call it *B. strangulata.*

Schrenk recognizes this species in the brown bituminous marl (Brandschiefer) of the Lower Silurian of the Baltic Provinces (Untersuch. p. 195).

1*. *Primitia strangulata,* Salter, sp., var. *a.*

Beyrichia strangulata, var. *α, ibid.* p. 172, pl. 6. fig. 19.

Differing from the foregoing chiefly by the furrow being faint and extending far across the valve. In fossiliferous schist (Lower Silurian) at Robeston Wathen, Pembrokeshire.

2. *Primitia Salteriana,* nov.

Beyrichia strangulata, var. *β, ibid.* fig. 20.

This differs from *P. strangulata* in the absence of the raised rim, in the more acute anterior extremity, and in the punctation of the surface. In fossiliferous schist (Lower Silurian), Sholes Hook, Haverfordwest.

Schrenk speaks of this variety (but with papillæ instead of pits) as occurring in the Lower Silurian Brandschiefer and Borkholm beds of the Baltic Provinces (Untersuch. p. 196). He also refers to another form ("var. *crenulata*"), with a broad and notched border, from the Lower Silurian beds at Paggar and Borkholm (Untersuch. p. 196).

3. *Primitia semicordata,* nov.

Beyrichia strangulata, var. *β,* young, *ibid.* fig. 21.

Besides being smaller than any of the above, this is relatively short and broad, nearly semicircular, and smooth. Accompanying the last mentioned.

4. *Primitia simplex,* Jones.

Beyrichia simplex, ibid. figs. 25, 26, 27.

This small, smooth, subovate species was first observed in the Lower Silurian schist of Busaco, near Coimbra, Portugal; and the very slightly different forms from a Lower Silurian schist at Harnage, near Shrewsbury, do not appear to be separable from it.

5. *Primitia Logani,* Jones; et varr.

Beyrichia Logani et varr. *reniformis* et *leperditioides,* Ann. Nat. Hist. ser. 3. vol. i. p. 244, pl. 9. figs. 6–10.

A large number of this gregarious species comprise so many variations of form, from oblong to reniform, on one hand, and from oblong to subovate, on the other, with or without punctation of surface, but always sulcated, that it seems impossible to draw any lines of distinction, excepting such as may limit the

oblong forms to *P. Logani* proper (whether long-oblong or ovate-oblong),—dividing off the kidney-shaped valves as var. *reniformis*, and those that have the most sloping dorsal angles as var. *leperditioides*. They all come out of a Lower Silurian limestone (upper portion of the Calciferous Sandrock) at Grenville and Hawkesbury, Canada.

6. *Primitia matutina*, nov. Pl. XIII. figs. 7*a*, 7*b*.

Length $\frac{30}{1000}$, height $\frac{21}{1000}$ inch.

This small, smooth, convex, *Leperditia*-shaped, non-sulcated *Primitia* might be catalogued as a variety of *B. Logani*, had we ever seen a specimen of the latter without a sulcus, or with an inclination to lose its furrow. Under existing circumstances, however, we give the benefit of the doubt, and the value of geographical distance, such as it is, to the probability of this little Lower Silurian form being distinct from its Canadian ally. The Trinucleus-shale (belonging to the upper part of the Bala or Caradoc formation) in the river Onny, near Cheney-Longville, Shropshire*, abounds with such small Entomostraca as this *Primitia*; but we have been able only to pick out this form in a well-preserved state.

7. *Primitia Seminulum*, Jones.

Beyrichia Seminulum, Ann. Nat. Hist. ser. 2. vol. xvi. p. 173, pl. 6. fig. 24.

A neat little semicircular form, from the Upper Silurian schists of Montgomery, where it occurs with *Beyrichia Klædeni*.

8. *Primitia sigillata*, Jones.

Beyrichia sigillata, Ann. Nat. Hist. ser. 3. vol. i. p. 242, pl. 9. fig. 5.

More oblong than *P. Seminulum*, less deeply furrowed, and somewhat more coarsely punctate. From the Upper Silurian Limestone of Beechey Island, with *P. rugulifera*, *P. muta*, and *Leperditia gibbera*. *P. variolata* is the British representative of *P. sigillata*.

9. *Primitia variolata*, nov. Pl. XIII. figs. 6*a*, 6*b*.

Length $\frac{29}{1000}$, height $\frac{19}{1000}$ (as 3 to 2).

Carapace moderately convex, varying between suboval and subquadrate; rather more obtuse behind than before. Hinge-line straight, but somewhat overhung by the dorsal part of the valves. Valves somewhat flattened, impressed with a distinct dorsal sulcus, which ends, towards the middle of the valve, in a

* An account of this Trinucleus-shale is given in a paper by Messrs. Salter and Aveline, Quart. Journ. Geol. Soc. vol. x. p. 62, &c. See also 'Siluria,' 2nd edit. p. 72, &c. The Caradoc and Bala beds are regarded as belonging to a higher horizon than the Calciferous Sandrock of Canada, in which *P. Logani* abounds.

subcircular umbilical pit. The surface of the valves is dotted with coarse shallow pits, and sometimes slopes gradually to the margins, but is generally deflected abruptly. There is a slight rim at the border. *P. variolata* is not far removed from *P. sigillata* and *P. Seminulum*; indeed, it may be said to be the British representative of the former. From the Woolhope Limestone, west of the Wych, Malvern.

9*. *Primitia variolata*, var. *paucipunctata*, figs. 6 *c*, 6 *d*.

Length $\frac{35}{1000}$, height $\frac{24}{1000}$ inch.

This bears fewer pock-marks, has a less well defined border-rim, and a rather smaller sulcus. From the Woolhope Limestone, west of the Wych.

10. *Primitia rugulifera*, Jones.

Beyrichia rugulifera, Ann. Nat. Hist. ser. 3. vol. i. p. 242, pl. 9. fig. 4.

Oblong, ornamented with minute transverse wrinkles, and impressed with a broad and deep sulcus on the anterior half. From the Upper Silurian Limestone of Beechey Island, together with other small Bivalved Entomostraca.

11. *Primitia renulina*, nov. Pl. XIII. figs. 5 *a*, 5 *b*.

Length $\frac{1}{25}$, height $\frac{1}{38}$ (as 3 to 2), thickness $\frac{1}{43}$ inch.

Carapace convex, ovate-oblong, straight on the back, boldly curved on the other margins, especially backwards; dorsal angles distinct; anterior region compressed. Valves smooth, bilobed, impressed with a deep well-defined dorsal sulcus, and bordered all round with a narrow depressed rim, which runs into the sulcus at the back or upper part of the valve. From the Wenlock Limestone at the Crofts, Malvern.

12. *Primitia mundula*, Jones.

Beyrichia mundula, Ann. Nat. Hist. ser. 2. vol. xvi. pp. 90 & 174, pl. 5. fig. 23, & pl. 6. figs. 28–31.

In addition to the diagnosis of this neat little species given at p. 174, *op. cit.*, we have to allude to the swelling of the sides of the sulcus in some well-grown individuals, which, however, are not specifically distinct from others with less developed sulcus,—also to the beautifully delicate reticulated sculpture of the surface, which sometimes appears as excessively fine longitudinal wrinklings, with inosculating meshes, and sometimes as a minute pitting.

Small individuals (long $\frac{1}{26}$, high $\frac{1}{48}$ inch) are more oblong than others, having rounded ends, parallel upper and lower borders, and a faint sulcus. The normal form approaches that of *Leperditia*; and, with a short hinge-line, angular ends, and convex belly, the valves become almost oval. *P. mundula* has

some of the characteristics of the Lower Silurian *P. bicornis*, but in a much less degree.

From the Upper Silurian (Scandinavian) Limestone found as drifted blocks in North Germany. We have seen a small specimen in a limestone of the Wenlock Series from near Malvern.

13. *Primitia nana*, nov.

Beyrichia strangulata, var. γ, *ibid.* p. 173, pl. 6. fig. 22.

Very small, nearly oblong, but proportionally longer than *P. strangulata*. Edges of sulcus swollen into two minute unequal tubercles. In soft fossiliferous schist (Lower Silurian) at Harnage, near Shrewsbury, in company with *P. simplex* and *P. bicornis*. It is possibly the young of the latter.

14. *Primitia bicornis*, Jones.

Beyrichia bicornis, ibid. fig. 23.

Very small, but readily distinguished by its two subcylindrical tubercles bordering the sulcus on each valve, and by its crested marginal rim. From the Lower Silurian beds at Harnage, near Shrewsbury.

15. *Primitia umbilicata*, nov. Pl. XIII. figs. 2 *a*, *b*, *c*, *d*.

Length $\frac{40}{1000}$, height $\frac{30}{1000}$, thickness $\frac{25}{1000}$ inch.

Carapace convex, rounded-oblong; dorsal angles sharp; hinge-line straight, and sunken in an elliptical or acute-ovate depression formed by the convexity of the dorsal borders of the two valves; this flattened area is broadest posteriorly, and terminates, near the antero-dorsal angle, by a slight notch. The hinge itself is formed by the meeting of simple edges. The ends of the valves are boldly rounded; the ventral line is gently convex; surface of the valves convex, rather compressed in front, usually smooth, but sometimes ornamented with minute, close-set, undulating lines. Each valve is marked in the middle with a short longitudinal furrow, more or less pronounced in different individuals, and widened at its centre into a navel-like pit. A well-defined rim extends from one dorsal angle to the other, round the ventral border of each valve, nearly parallel to the edge, from which it is separated by a shallow groove. The edge itself is sculptured with minute transverse pits.

This is the characteristic *Primitia* of the Aymestry Limestone of Chances Pitch, near Malvern.

16. *Primitia cristata*, nov. Pl. XIII. figs. 1 *a*, *b*, *c*.

Length $\frac{38}{1000}$, height $\frac{24}{1000}$, thickness $\frac{18}{1000}$ inch.

Carapace convex, but most tumid posteriorly; suborbicular or rounded-oblong, and about one-third longer than high.

Dorsal margin straight or slightly depressed; dorsal angles marked; extremities broadly rounded, the posterior rather less obtuse than the other; ventral margin boldly convex. Valve-surface compressed forwards, giving a wedge-like outline to the carapace seen edgeways; it is also turned inwards at the margins, thus being flattened at the margins, particularly on the ventral aspect, where the angle of deflection is marked by a slight ridge; a delicate rim also accompanies the terminal and ventral edges. Between the marginal angle above mentioned and the border itself, there is, at the posterior extremity of each valve, a sharp crest, directed upwards and inwards to meet its fellow at the postero-dorsal angle, giving a notched appearance to the dorsal aspect of the carapace. The surface is smooth, but bears a deep umbilical pit on the middle, rather towards the dorsal line.

In the Wenlock Limestone at Crofts Quarry, near West Malvern.

Symptoms of the marginal angle of deflection, so strong in *P. cristata*, are seen in several *Primitiæ*, and particularly in *P. umbilicata* and *P. tersa*. These three forms are nearly allied; and *P. umbilicata* is of medium development, and may stand as the type of the subgroup they represent.

17. *Primitia tersa*, nov. Pl. XIII. figs. 3 *a–c*.

Length $\frac{38}{1000}$, height $\frac{27}{1000}$, thickness $\frac{26}{1000}$ inch.

Carapace tumid, most convex at the hinder third, rounded-oblong, one-fourth longer than high; dorsal border straight, angles pointed; ventral border very convex; ends nearly equally rounded. Surface of valves smooth, bearing a pit or umbilical depression, with irregular outline, in the dorsal region, and having a slight marginal ridge, which, commencing at the antero-dorsal angle, runs round the anterior extremity parallel to the border, and becomes lost, or very faint, at the middle of the ventral border. In the Wenlock Limestone at Crofts Quarry, near West Malvern.

18. *Primitia trigonalis*, nov. Pl. XIII. figs. 4 *a*, *b*.

Length $\frac{48}{1000} = \frac{1}{21}$, height $\frac{36}{1000} = \frac{1}{28}$, thickness $\frac{27}{1000} = \frac{1}{37}$ inch (about)—11 : 8 : 6.

Carapace convex, compressed towards the margins, trigonal, very much like the right valve of *Leperditia arctica* in shape, having sloping dorsal angles and protruding ventral border; but it has no eye-spot, or radiating muscle-spot, and the valves are symmetrical and almost equal; indeed the right valve is slightly smaller than the left, though of similar outline, instead of the left being much the smaller, of different shape, and

strongly overlapped on its ventral border. A slight impression on the middle of the valves, and the nearly equivalved condition, characterize this as a *Primitia*, in spite of its *Leperditia*-like outline,—the last being a feature taken on by other *Primitiæ*, as we have already shown. The most convex portion of the surface is faintly and irregularly corrugated by broadish shallow pits, which enlarge towards the middle, and there merge into the feeble sulcus. From the Wenlock Limestone of Crofts Quarry, near West Malvern.

19. *Primitia Beyrichiana*, nov. Pl. XIII. fig. 9.

Length $\frac{1}{28}$, height $\frac{1}{42}$ inch (as 3 to 2).

Carapace-valve suboblong, straight along the back, boldly curved behind, gently convex ventrally, obliquely truncate with a gentle curve in front. Surface convex, and marked with a broad, subtriangular, faint impression in the middle of the dorsal region; and, excepting on the dorsal edge, margined with a neat flattened rim, rather narrower at the anterior edge than elsewhere, and uniformly sculptured with minute elongate pits, perpendicular to the peripheral curve of the valve, and thus forming a radiate ornament. Such a style of margin is present also in *P. Roemeriana*, and is still more developed in *Beyrichia Maccoyiana*; and a simply pitted rim is found in *B. Salteriana*, *Isochilina gracilis*, &c.

P. Beyrichiana is rare, and is one of the small Bivalve Entomostraca referred to (under the terms *Cytheres*, and *Cytheropses*) in Ann. Nat. Hist. ser. 2. vol. xvi. p. 84, and ser. 3. vol. i. p. 249, as abounding in the drifted Scandinavian blocks of Upper Silurian Limestone found in North Germany, with some of which material Prof. E. Beyrich, the eminent palæontologist at Berlin, long ago supplied us.

20. *Primitia Roemeriana*, nov. Pl. XIII. figs. 8 *a*, *b*.

Length $\frac{47}{1000}$, height $\frac{35}{1000}$, thickness $\frac{25}{1000}$ inch.

Carapace ovate, back-line less convex than the ventral border. Valves convex, bearing a very faint subcentral impression, and marked with numerous, small, roundish, shallow pits, the intervening surface being a smooth, nearly regular meshwork (like the pattern on the side of a thimble). The valves are also bordered with a flat marginal rim, broadest ventrally, thinning away at the dorsal slopes, and neatly ornamented with a row of minute subquadrate pits, forming a radiate fringe, as in *P. Beyrichiana*. The ventral profile of the united valves is acutely ovate.

This ornamented species, differing markedly from the pretty radiated *P. Beyrichiana* of Sweden, is from the Wenlock Limestone of the Crofts near Malvern; and we name it after our friend

Professor Dr. Ferdinand Roemer, of Breslau, who has already enlarged our knowledge of palæozoic fossils from the Scandinavian Limestones.

21. *Primitia obsoleta*, nov. Pl. XIII. figs. 12 *a, b, c.*

Length $\frac{15}{300}$ ($\frac{1}{20}$), height $\frac{11}{300}$, thickness $\frac{9}{300}$ inch.

Carapace-valves obtusely subovate, straight at the back, convex ventrally; one end broadly and obliquely curved, with a dorsal angle, the other semicircular; a slightly raised smooth rim runs along the ventral border, continues along the broad end, widens at the dorsal angle, and dies out on the hinge-line. Surface convex, slightly flattened towards the narrower end, smooth, and presenting, at the middle of the dorsal region, a faintly indicated impression, fainter even than the shallow sulcus in its companion *P. Beyrichiana*.

In Scandinavian limestone (Upper Silurian), drifted blocks, North Germany.

22. *Primitia oblonga*, nov. Pl. XIII. figs. 14 *a, b, c.*

Length $\frac{1}{15}$, height $\frac{1}{25}$, thickness $\frac{1}{50}$ inch ($3\frac{1}{4} : 2 : 1$).

Carapace-valves convex, sloping gently and nearly equally towards the margins, oblong, with rounded, almost symmetrical ends; the dorsal line slightly sinuous, and the ventral line very faintly convex. Surface smooth. The slight sinuosity of the dorsal line is probably a trace of the sulcus, as in *P. radiata* and other associated forms. The ventral margin is very slightly thickened by being suddenly inturned. Excepting this last feature, the absence of positive characters in this relatively large form might have made us doubtful whether it be really a *Primitia* as defined above, or whether we ought to have classed it as a *Cythere*, with some fossil and recent carapaces of which it might almost equally well be compared.

In the Scandinavian limestone blocks (Upper Silurian) from Northern Germany.

23. *Primitia ovata*, nov. Pl. XIII. figs. 13 *a, b, c.*

Length $\frac{3}{67}$, height $\frac{2}{67}$, thickness $\frac{1\frac{1}{2}}{67}$ inch.

Carapace-valves nearly ovate, excepting that the dorsal margin is not so convex as the ventral; extremities round, but one much narrower than the other; surface smooth, convex, sloping off gently towards the ends; ventral border thickened by a sudden inturn of its edge, with a low rounded ridge at the angle of deflection. In this last feature it has an alliance with *P. obsoleta*; but its outline, want of postero-dorsal angle, and smaller convexity distinguish it.

Drifted Scandinavian limestone (Upper Silurian), with *P. obsoleta*, &c.

24. *Primitia semicircularis*, nov. Pl. XIII. figs. 10 *a*, *b*, *c*.

Length $\frac{2}{75}$, height $\frac{1\frac{1}{2}}{75}$, thickness $\frac{1}{75}$ inch (8 : 6 : 4).

Carapace-valves moderately convex, subovate, sometimes suborbicular, with a straight back, and with one end more or less acute at the dorsal angle, and the other well rounded and forming a bold semicircular curve with the ventral line. The ventral margin is thickened, as in *P. ovata*. There is no doubt that *P. semicircularis*, *P. ovata*, *P. obsoleta*, and *P. oblonga* are all closely allied forms of the simplest of *Primitiæ*; still, presuming that their soft parts may have had distinctive characters (as is likely) we keep them apart for convenience. They are gregarious, and, together with *P. mundula*, form a considerable proportion of some parts of the Upper Silurian Limestone of Sweden.

In the Scandinavian limestone (drifted), North Germany. *P. pusilla* seems to represent *P. semicircularis* in Britain.

25. *Primitia pusilla*, nov. Pl. XIII. figs. 11 *a*, 11 *b*.

Length $\frac{27}{1000}$, height $\frac{21}{1000}$ inch.

This little smooth subovate form may possibly be a variety of *P. semicircularis*; but its less convexity and more rounded outline distinguish it, to say nothing of its faint sulcus—a feature, however, which may possibly be present in some specimens of *P. semicircularis*. From the Wenlock Limestone, near West Malvern.

26. *Primitia concinna*, Jones.

Cytheropsis concinna, Ann. Nat. Hist. ser. 3. vol. i. p. 249, pl. 10. figs. 3, 4.

This neat subcylindrical carapace probably belongs to a furrowless *Primitia*; there is, indeed, a faint dorsal hollow in the original, which may stand for the sulcus. From the Lower Silurian Limestone on the Ottawa River, Canada.

The same form is not uncommon among the little Entomostraca of the Upper Silurian Limestone of Gothland (from Dr. Lindström); and we have seen one like it also in the Upper Silurian Limestone of Arisaig, Nova Scotia (from Dr. Honeyman). It is not impossible that Eichwald's *Leperditia minuta* may prove to be the same species; for though the published figures* are not quite similar, yet some specimens with which M. E. d'Eichwald has favoured us can scarcely be distinct; the state of preservation, however, hinders exact comparison.

* Bullet. Soc. Nat. Imp. Moscou, 1854, part 1. p. 99, pl. 2. fig. 6; and Lethæa Rossica, livr. 7 (1860), p. 1335, pl. 52. fig. 2. Schrenk finds *L. minuta* in the Lower Silurian of the Baltic Provinces (Untersuch. p. 195).

27. *Primitia muta*, nov.

Cytheropsis concinna?, ibid. p. 254, pl. 9. fig. 3.

Oblong-ovate, nearly *Leperditia*-shaped; back straight, ends rounded but unequal; ventral edge convex; surface smooth. Though resembling *P. concinna* at first sight, it is less cylindrical, broader at the obliquely rounded end, and its ventral dge is more symmetrically curved: it is near to *P. rugulifera* in shape. From the Upper Silurian Limestone of Beechey Island, with *P. rugulifera*, *P. sigillata*, *Beyrichia clathrata*, *B. plagosa*, and *Leperditia gibbera*.

EXPLANATION OF PLATE XIII.

[The figures are magnified about 20 diameters.]

Fig. 1. *Primitia cristata*, J. & H.: *a*, carapace, view of right valve; *b*, posterior view; *c*, dorsal view.
Fig. 2. *P. umbilicata*, J. & H.: *a*, left side of carapace; *b*, dorsal view; *c*, ventral view; *d*, inside of valve (filled with matrix).
Fig. 3. *P. tersa*, J. & H.: *a*, carapace, side view; *b*, dorsal view; *c*, ventral view.
Fig. 4. *P. trigonalis*, J. & H.: *a*, carapace, view of left valve; *b*, dorsal view.
Fig. 5. *P. renulina*, J. & H.: *a*, carapace, side view; *b*, dorsal view.
Fig. 6. *P. variolata*, J. & H.: *a*, left valve; *b*, its edge-view; *c*, right valve of var. *paucipunctata*; *d*, its edge view.
Fig. 7. *P. matutina*, J. & H.: *a*, right valve; *b*, its edge view.
Fig. 8. *P. Roemeriana*, J. & H.: *a*, carapace, side view (left valve); *b*, profile.
Fig. 9. *P. Beyrichiana*, J. & H., right valve.
Fig. 10. *P. semicircularis*, J. & H.: *a*, left valve; *b*, its end view; *c*, ventral edge.
Fig. 11. *P. pusilla*, J. & H.: *a*, right valve; *b*, its edge view.
Fig. 12. *P. obsoleta*, J. & H.: *a*, right valve; *b*, its end view; *c*, edge view (ventral).
Fig. 13. *P. ovata*, J. & H.: *a*, right valve; *b*, its end view; *c*, edge view (ventral).
Fig. 14. *P. oblonga*, J. & H.: *a*, right (?) valve; *b*, its end view; *c*, edge view (ventral).

XLVIII.—*On the Names of the Genus* Mystomys. (In a Letter to Professor Allman.) By Dr. J. E. Gray, F.R.S., V.P.Z.S., F.L.S. &c.

British Museum, Nov. 15, 1865.

Dear Professor Allman,

As I have been informed that, in your paper on the animal that Du Chaillu noticed as *Cynogale velox*, you persist in retaining the generic name of *Potamogale*, I venture to send you the following observations, in the hope that I may induce you to reconsider the question, and avoid adding another to the several useless names which the animal has already received.