

the *Chemnitzia*. I believe no example of a *Rissoa* with a similar apical structure is known; we may say that there is not a single essential character of the *Rissoa* in this species. It is a congener of *Chemnitzia excavata*; at one time I thought it a variety of that species, but the different disposition of the spiral striæ, the more oblique ribs and hollowed-out volutions in the *C. excavata*, point out that the *C. Barleei* is probably distinct, though most closely allied to it. The apex of *C. excavata* is precisely reflexed as in this species: this character with me, as regards the *Chemnitzia*, is of great value; the exceptions to it are few; in that tribe the decided reflexed apex, or the sunken subreflexed one, I never found absent, or present in a true *Rissoa*. But the examples must be fresh and perfect—not the usual cabinet ones ground to button-like apices by attrition; but even in these the practised eye will detect the true character. The fold on the pillar-lip of the *C. excavata* is sometimes present, and at others absent. I believe this remark holds good in this species, but in my specimens from Mr. Barlee it is distinctly visible, though very small, and far retired within the aperture.—W. C.

XIII.—*Descriptions of some new genera and species of Spatangidæ in the British Museum.* By J. E. GRAY, Esq., F.R.S., P.B.S. &c.

THE following genera and species do not appear to be included in M. Agassiz and Desor's 'Catalogue Raisonné.' They will be figured in the Catalogue of the *Echinidæ* in the British Museum:—

Spatangus Reginae. Purple? subcordate; back convex, larger dorsal tubercles few and far apart, scattered, ambulacral petals broad.

Hab. Malta.

This species is very like *S. purpureus*, but the back is higher, more convex, and there are not half the number of dorsal tubercles found in that species. It was collected by Miss Emilie Attersoll, who formed part of the suite of H.M. Queen Adelaide during her visit to Malta.

Eupatagus similis. Ovate, depressed, with only two or three rather larger tubercles near the peripetalous fasciole.

Hab. Australia, Flinders' Island.

This species differs from *E. Valenciennesii* of Agassiz, t. 15. f. 3, in not having nearly so many tubercles on the back. Several specimens of it were sent to the Museum by Joseph Millington, Esq.

Lovenia elongata. *Spatangus elongatus*, Gray, in Eyre's Discov. Central Australia, i. 436. t. 6. f. 2. Ovate, rather elongate, depressed; back with many sunken tubercles on the sides.

Hab. Port Essington, Mr. Jukes.

Lovenia subcarinata. Shell elongate, narrow, the lower anterior edge keeled, the lower part of the upper side with six or eight large tubercles placed in two series on each side at the end of the anterior lateral ambulacra.

Hab. Philippines, Isle of Luzon, H. Cuming, Esq.

ECHINOCARDIUM. This genus may be divided into the following sections:

* *Anterior odd ambulacral groove deep, hinder end perpendicular, lower part blunt.*

Echinocardium cordatum, &c. To this section also belong—

Echinocardium australe. Very like *E. cordatum*, but the hinder end is erect and the lower edge rather acute.

Hab. Australia, Port Jackson, J. B. Jukes, Esq.; Van Diemen's Land, Ronald Gunn, Esq., and Dr. A. Sinclair.

Echinocardium zealandicum. Very like the former, but plastron lanceolate elongate, and the body more ovate and elongate.

Hab. New Zealand, Dr. Andrew Sinclair: several specimens.

** *Anterior odd ambulacral groove shallow, lower part of hinder end produced, acute.* *E. gibbosum*.

Breynia Australasiæ. *Spatangus Australasiæ*, Leach, Zool. Misc. ii. t. 82. 1825. *S. Crux Andreae*, Lamk. Hist.; Agassiz, Ann. Sci. Nat. vi. t. 16. f. 14. Large tubercles on sides of lateral ambulacra few, internal fasciole short, broad.

Hab. Port Jackson.

Dr. Leach's specimen exactly agrees with M. Agassiz's figure.

Breynia Desorii. Sunken tubercles on the lateral and posterior interambulacral area numerous (about thirty), the internal fasciole elongate, narrow.

Hab. Swan River.

Several specimens, all differing in the above characters from the former.

MEOMA. Shell subcordate, vertex subcentral; ambulacra sunken, lateral pairs equal, odd anterior one entirely obliterated, marked by a shallow groove, surrounded by a very sinuous peripetalous fasciole, without any lateral fasciole; subanal fasciole incomplete, edging the under side of the indistinct subanal disk, and only extending up to the level of the lower edge of the vent and with the subanal pores in the fasciole.

This genus differs from *Brissus* in the incompleteness of the subanal fasciole, the indistinctness of the subanal disk, and in the entire absence of the anterior ambulacral pores. It differs from *Faorina* in wanting the lateral fasciole. Dorsal tubercles small, equal.

Meoma grandis. Subcordate, rather convex.

Hab. Australia, Capt. Sir Edward Belcher, K.C.B., R.N.

FAORINA. Shell ovate, subcordate, ventricose; vertex central, hinder end truncated, without any distinct subanal disk; ambulacra sunken, the lateral ones regularly diverging, anterior longest, anterior odd one obliterated, marked by a deep groove, all surrounded by a rather sinuous peripetalous fasciole without any lateral or subanal fasciole or anal plate; ovarial pores two, three or four.

Faorina chinensis. Purple, with a smooth band between the upper anterior tesseræ, and a smooth vertical band over the suture from the end of the anterior lateral ambulacra to the front of the mouth.

Hab. China, J. R. Reeve, Esq.

Faorina antarctica. Subcordate, rather depressed; lateral ambulacra ovate, longitudinal, very deep, forming a very distinct rib on the inner side of the shell; peripetalous fasciole broad, sinuous.

Hab. South Polar Seas, Capt. Sir James Ross's expedition.

This species differs from *Faorina cavernosa* (Erichson, Arch. 1845, t. 11. f. 2) in the ambulacra being less broad, and in the fasciole being much broader and more distinct.

Tripylus Philippii. Cordate, rather depressed; lateral ambulacra oblong, linear, the hinder pair not half the length of the anterior one, the sides of the hinder part of the peripetalous fasciole parallel.

Hab. —.

The genus *Tripylus* of Philippi differs from *Desoria* and *Schizaster* in the regular cordate form and central vertex, and differs from *Brissiopsis*, with which M. Agassiz confounded it, in the absence of the subanal fasciole.

DESORIA. Shell ovate, convex, vertex subanterior; ambulacra narrow, sunken, like *Brissus*, the anterior odd one formed of a series of small double pores, all surrounded by a very sinuous peripetalous fasciole giving off a lateral fasciole, which extends to the vent without any distinct subanal fasciole or subanal disk.

Very like *Brissus*, but distinguished by the presence of the lateral fasciole and the absence of the subanal one and disk.

cf. Agassiz
Rev. Echini
p. 359.

Desoria Australis. Ovate, purplish white.

Var. 1. Brown, each of the tesseræ with a broad pale edge.

Hab. Australia, Flinders' Island, Joseph Millingen, Esq. Several specimens.

Schizaster ventricosus. Very like *S. canaliferus*, but the hinder part of the body is very high, the hinder end nearly vertical, ventricose, and regularly rounded above the vent, the hinder part of the peripetalous fasciole straight between the two lateral ambulacra.

Hab. Australia ??

Schizaster Jukesii. Like former, but vertex nearly central; crown strongly keeled between the two hinder ambulacra; the part of the peripetalous fasciole between the anterior and posterior ambulacra regularly bent up nearly to the vertex, the hinder end vertical, regularly rounded above the vent.

Hab. North Australia, J. B. Jukes, Esq.

KLEINIA. Shell ovate, elongate, ventricose, subcordate, vertex subcentral; centre of back with rather larger perforated tubercles; lateral ambulacra sunken, ovate, linear, confluent near the vertex, where the inner series of twin pores are nearly obliterated, the anterior pair diverging, the hinder pair nearly parallel, diverging at the end, the anterior odd one in a rather deep groove with only rudimentary pores; all surrounded by a broad, rather sinuous peripetalous fasciole; subanal fasciole surrounding the oblong subanal plate, which is covered with radiating series of tubercles, and transversely divided in half by a subcentral fasciole; ovarial pores four, hinder largest; mouth anterior, vent in the upper part of the high hinder extremity covered with small irregular plates; spines of the crown elongate subulate, of the plastron and subanal plate longer, stronger, rather dilated at the end.

This genus differs from *Brissus* in the peculiar form of the ambulacra, and in the larger size of the dorsal spines and tubercles, and from *Plagionotus* in the form of the subanal plate and ambulacra.

Kleinia Luzonica. Shell ovate, ventricose; ambulacra confluent near the vertex, inner series of pores nearly obliterated; lateral ambulacra ovate, petaloid, the hinder pair shorter, nearly parallel, anterior pair divergent; vent in the upper part of the high hinder extremity.

Hab. Philippines, Isle of Luzon.

Agassizia subrotunda. Ovate, subglobose, regular, even, without any tubercles on the side or round the vent, the odd anterior groove with two lines of minute tubercles.

Hab. Australia, Capt. Sir Edward Belcher.

LESKIA. Shell ovate, subglobose, thin, vertex central; lateral ambulacra broad, petaloid, rather sunken and separate from each other, the hinder lateral pair rather the shortest, the odd anterior ambulacra in a rather broad sunken groove, rudimentary, with only a single series of pores on each side; all surrounded by a broad rather sinuous peripetalous fasciole; lateral and subanal fasciole none; mouth anterior, round, on a level with the rounded under surface, and covered with five triangular converging valves; plastron and subanal plate not distinctly defined; anus round, in the upper part of the rounded posterior end, and covered with five triangular converging valves forming a cone, with some small spicula in the centre; ovarian pores two, very large; spines and tubercles subequal, subulate, those of the back being rather the largest.

This genus agrees with *Brissus* in the form of the peripetalous fasciole, but differs from it and all the other *Spatangida* in the form of the mouth and vent.

1. *Leskia mirabilis*. Shell ovate, subglobose.

Hab. Isle of Luzon.

BIBLIOGRAPHICAL NOTICES.

The Dynamical Theory of the Earth. By ARCHIBALD TUCKER RITCHIE. Longmans, London, 1850. Vol. i. pp. 562; vol. ii. pp. 664.

COSMOGONIES seem to have shared the fate of the philosopher's stoue, the perpetual motion, and such other dreams. Given up by the true philosopher, such projects have become at once the glory and the stumbling-block of those who with much learning and little knowledge seek at the well of truth, diligently indeed, but who, like scientific Danaïdes, seem condemned to draw the living waters with a sieve.

The many-sided man of science, skilled at once in books and things, whose wide ken scans the whole field of human knowledge, modestly confesses a cosmology to be beyond his powers, and contents himself with a mere "Cosmos,"—a statement of what the world is, not how it came to be: and where Humboldt feared to tread, the author of the 'Vestiges of the Creation,' and Mr. Ritchie in the present work have rushed in.

We have mentioned these two works together, but we would not do the 'Vestiges' the wrong to say, that it is from any similarity between them: truth to say, their relation is one of antithesis, not of resemblance.

The style of the 'Vestiges' is always grammatical and eminently perspicuous, sometimes indeed rising to eloquence. The style of the 'Dynamical Theory' is frequently ungrammatical, rarely perspicuous, and often descends to twaddle.