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PLATE XXXII.

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2. On new *Clausiliæ* from the Levant, collected by Vice-Admiral T. Spratt, R.N. By Dr. O. BOETTGER, Frankfurt-on-the-Main¹.

[Received April 10, 1883.]

(Plates XXXIII. & XXXIV.)

In 1878, in a dissertation entitled 'Monographie der Clausilien-section *Albinaria*,' I tried to show that scarcely one of the more known genera of land-shells presents us such instances of restricted local distribution as the section of the "fair white ones" of *Clausilia*, and that through this strange restriction of habitat these forms of shells, isolated for a long time upon generally unfrequented islands, have deviated from their primitive type already so far that we must acknowledge them to be distinct and now independent species. Of a great number, especially of the island-species, there is evidence sufficient to indicate the prototype with more or less certainty, and that above all others *C. cærulea*, Fér., or its ancestor seems to be the primary form for a great number of varieties or allied species. In no group is the limitation of the definitions "species, subspecies, and variety" more delicate and more difficult than here, because it seems to depend only on the time, or, rather, on the earlier or later age of the immigration or isolation, whether a form has developed already into a so-called "good species" or not. Also, if in an earlier time, and then again in a more recent period, the same species has immigrated from a neighbouring island into another island, then it may happen, as we see now in the island of Amurgo, that two clearly distinct species, *C. amorgia*, Bttg., and *C. cærulea*, Fér., arise, which are both derived from one and the same ancestor, viz. from a form doubtless quite near to the present *C. cærulea*.

It is evident that, in producing the astonishing variety of species and forms of *Clausilia* in the Greek islands, "isolation" was one of the principal factors, and that the question about "struggle for life" or "natural selection" was but secondary to it.

The following descriptions of a great number of new species, varieties, and forms of Greek *Clausiliæ* will give us new grounds and proofs to illustrate these short theoretical reflections.

With the knowledge of these new forms we advance more and more in the science of the geographical distribution of this genus;

¹ Communicated by Vice-Admiral T. Spratt, R.N., F.R.S., F.Z.S.

so that from some few small islands only, viz. from the Greek islands Schiza, Cerigotto, Spetsæ, Hydra, Makronisi, Petali, Skopelo, Chiledromi and its neighbour islands, and from Giura, Serpho, Polykandro, and Sikono, and from the little islands between Nio, Naxia, and Amurgo, species of *Clausilia* have not yet been found. Much less known are the islands of the coast of Asia Minor, where the islands of Thaso, Samothraki, Imbro, Limni, Tenedo, Hagiostrati, Psara, Furni, Patino, and all the islands of the Mendelia Gulf, Nisyro and all the islands of the Symi Gulf, lastly the Tanni and Kamila islands, have not yet disclosed any one of their doubtless numerous forms of this genus.

I am greatly indebted to Miss Joséphine Thiesse, of Chalkis, island of Eubœa, who for several years has kindly offered me her new treasures in Greek *Clausiliæ* for publication, and especially to Vice-Admiral T. Spratt, R.N., who has opened to me his rich collection for this paper.

The collection of these interesting little shells was commenced about forty years ago by Admiral Spratt, when Edward Forbes became the naturalist of H.M.S. 'Beacon,' in which ship he was employed on the survey of the Grecian archipelago. Forbes's genial nature as well as example stimulated the little taste for natural history the Admiral (then a Lieutenant) previously possessed, and induced him to collect fossils and shells.

When they were companions together afterwards in exploring Lycia, and also in several trips amongst the Greek islands, the little *Clausiliæ* came frequently into notice, from their abundance in some localities, and from being the only land-shells found alive upon the rocky heights and cliffs during the hot and arid summers of the Ægean.

From being thus so conspicuous, and also from showing great varieties of form, they became special favourites of the collector after Forbes returned to England.

Thus from mountain-tops and lower gorges, from large and small islands, they were assiduously sought for as opportunities offered, and were collected as experience showed the best side of the mountain or particular rock to look for them, and whether on its surface or under stones only, as chiefly occurs with the brown species.

Admiral Spratt's collection of *Clausiliæ* consequently amounts to more than 100 forms from nearly as many different localities, of which I have seen examples of the greater portion.

About half this collection was formed before the year 1848; and of these, through Edward Forbes and Mr. H. Cuming, to whom sets were sent, the most part, but not all, were submitted to the late Dr. Louis Pfeiffer, of Cassel, for examination. Dr. Pfeiffer found about thirty of them to be new species, and described them in the 'Proceedings' of this Society.

As regards the remainder of the collection, formed between 1852 and 1864, the loss of his fellow-traveller and friend before his return to England in the latter year so damped Admiral Spratt's interest in his collections, that the *Clausiliæ* and other specimens have

remained until recently unexamined, so that many species that were unknown to science at that time have been since collected by others and described.

I have, however, now the pleasure of presenting descriptions and figures of some 13 new species, as well as of about 18 new varieties and forms, to the Society, out of the remainder of the Admiral's collection, which he has recently submitted to me for that purpose.

Sect. *Albinaria*, v. Vest.

1. CLAUSILIA ANATOLICA, Roth. Dissert. p. 21, t. 2. fig. 5.

Var. APICALIS, mihi.

Typo minor, spira brevior, apice latissimo, obtusissimo. Anfr. solum 8. Lamella infera intus minus distincte bifurcata. Alt. 14½, lat. 4¼ mm.; alt. apert. 3¾, lat. apert. 3¼ mm.

Hab. Arsa, valley of Xanthus, Asia Minor (Spratt).

The short form and the very thick apex distinguish this variety easily from the typical *C. anatolica* of Cacamo in Caria.

2. CLAUSILIA IDÆA, Pfr. P. Z. S. 1849, p. 140.

This fine species, inhabiting Mount Ida, island of Crete, which Admiral Spratt collected on the Plain of Neetha at 4000 feet alt., must be registered between *C. petrosa*, P., and *C. byzantina*, Chr., in the *byzantina* group of *Albinaria*.

3. CLAUSILIA GLABELLA, Pfr. P. Z. S. 1864, p. 604.

I do not yet know the type of this species, inhabiting the "White Mountains" at 6000 feet alt. (Spratt); but I am now sure that my *C. pura* (Monogr. d. Claus.-Sect. *Albinaria*, p. 22, t. 4. fig. 1) and *C. deglupta* (l. c. p. 23, t. 1. figs. 2, 3), both Cretan forms, are but varieties of Dr. Pfeiffer's species.

Var. PURA, Bttg.

A typical specimen from Apokorona, island of Crete (Spratt).

Var. SPRATTI, mihi.

Typo multo major, cylindrato-fusiformis; apert. intus hepatica. Lam. supra longiuscula sed humilis; subcolumellaris oblique intuenti distincte conspicua. Differt a varietatibus pura, Bttg., nec non deglupta, Bttg., anfr. 13½, et lam. subcolumellari haud inconspicua. Alt. 25½, lat. 4½ mm.; alt. apert. 4¾, lat. apert. 3½ mm.

Hab. Island of Crete, without exact indication of locality (Spratt).

This splendid variety, 5 mm. greater than usual, differs from all varieties of this species till now known by its elongate cylindrical form and by the distinctly outcoming subcolumellar lamella.

4. CLAUSILIA STRIGATA, Pfr. P. Z. S. 1849, p. 136.

A nearly typical specimen of this species, which had been found till now in the neighbourhood of Mylopotamo, Rettimo, and Khandia, from the Omalo Plain at 3500 feet alt., island of Crete (Spratt).

Var. ORIENTALIS, mihi.

Typo minor, testa tenuiore, costulis anfr. mediorum acutioribus, minus undulatis, ultimi vix validioribus. Lam. infera intus minus distincte bifurcata e basi vix callosa ascendens. Alt. 14½-15, lat. 3½-3¾ mm.; alt. apert. 3¼, lat. apert. 2¾ mm.

Hab. Karpatho island (Spratt).

A very characteristic little variety.

5. CLAUSILIA VIRGINEA, Pfr. Symbol. iii. p. 95.

Admiral Spratt found this smooth little species in the Pass of Prevli and a slight variety at Sitia (?), island of Crete.

6. CLAUSILIA SUBVIRGINEA, n. sp. (Plate XXXIII. fig. 1.)

Maxime aff. C. virginæ, sed t. minus ventricosa, apert. multo minore. T. minus solida, albida, maculis punctisque cinereis hic illic adpersa, opaca. Anfr. 10½, apicales 2 læves, infra-apicales 3 distanter, cæteri dense acute striati, ultimus prope aperturam vix validius densestriatus. Apert. parva, minus alta, magis rotundata; lam. supera minus longa, spiralem disjunctam non transgrediens; infera superæ minus approximata, basi magis oblique ascendente nec subhorizontaliter in mediam aperturam prosiliente. Cæterum C. virginæ, P., simillima. Alt. 14, lat. 3½ mm.; alt. apert. 3¼, lat. apert. 2½ mm.

Hab. Island of Crete, without exact indication of habitat (Spratt).

This little species is very closely allied to *C. virginea*, Pfr., but neither so ventricose nor so smooth and polished in the median whorls; its mouth is strikingly smaller, and the base of the inferior lamella ascends in the profile view obliquely in a nearly straight line, whilst in *C. virginea* it shows a concave base and projects more horizontally into the midst of the mouth.

7. CLAUSILIA TROGLODYTES, Ad. Schmidt, Syst. d. europ. Claus. p. 90.

Var. VEXANS, m.

Habitu C. byzantinæ, Chrp., typicæ, sed apparatu claustrali C. troglodytis, Ad. Schm.—Differt a typo punctis cinereis parce adpersa, anfr. mediis glabratis, vix substriatis, apert. minus protracta. Alt. 21, lat. 4 mm.; alt. apert. 4½, lat. apert. 3½ mm.

Hab. Roumili near Tarrha, South Crete (Spratt).

This variety has quite the form and size and the glabrated median whorls of the typical *C. byzantina*, Chrp., from Khandia; but it is a true *C. troglodytes* the costulation of which has been reduced to a very slight or nearly obsolete striature.

8. CLAUSILIA SUBLAMELLOSA, n. sp. (Plate XXXIII. fig. 2.)

Magnitudine, habitu, sculptura, apertura, lamellis persimilis C. lamellosæ, Wagn., Dalmaticæ, sed punctiformi-rimata, anfr. 11 nec 9, ultimo deorsum angustato, basi distincte bicristato, cristis brevibus, parum arcuatis, sulco separatis, crista exteriori validiore, lamellis

costulata, crista interiore umbilicali densius costulato-striata; costulis lamelliformibus anfr. ultimi prope aperturam sursum hic illic bifidis. Lunella exacte dorsalis, magis minusve perspicua, sat valida; clausilium apice acuto instructum. Alt. 12-14, lat. $2\frac{2}{3}$ -3 mm.; alt. apert. 3, lat. $2\frac{1}{4}$ mm.

Hab. Sphakia, west of Crete (*Spratt*).

A wonderful little shell, without attentive examination easily to be confounded with *C. lamellosa*, Wagn., from Ragusa. But the well developed *apparatus claustralis* forbids to range it next to this species, and prohibits also to put it into a series with the Syrian forms *C. prægracilis*, Bttg., and *C. albicosta*, Bttg. The new species seems to be nearly isolated between the Cretan *Clausiliæ*, where it may perhaps have most affinities with the *byzantina* group, and, especially in the neck-form and costulation, with *C. tenuicostata*, Pfr., var. *heteroptyx*, Bttg., in the form and position of the superior and inferior lamellæ with *C. virginea*, Pfr.; but the nearly predorsal lunella is quite peculiar to *C. sublamellosa*.

9. CLAUSILIA TENUICOSTATA, Pfr. P. Z. S. 1864, p. 604.

This species has been known till now from Selino and Lassos and from the Gawdos island in South Crete (*Spratt*). It is also said to occur in the Bay of Mirabello (*Pfeiffer*); but I think it must have been confused with another allied corrugated species.

The specimens from Tripiti, south of Crete (*Spratt*), lying before me, seem to be nearly typical, but are distinguished from Dr. Pfeiffer's diagnosis by the greater size, the more milk-blue colour, and the straighter costulation. This form is moreover endowed with a very deep-lying spiral lamella, whilst in the typical *C. tenuicostata* the lamella spiralis approaches and passes a little the inner end of the lamella supra. Alt. 17-19, lat. $3\frac{1}{2}$ - $3\frac{3}{4}$ mm.; alt. apert. $3\frac{3}{4}$ -4, lat. apert. $2\frac{1}{2}$ - $2\frac{3}{4}$ mm.

Another specimen, from Roumili, is a new variety, which I shall name

Var. HETEROPTYX, mihi.

Typo simillima, sed anfr. $12\frac{1}{2}$ sutura crenulata disjunctis, magis stricte recteque costulatis, ultimo costulis aliquantulum rarioribus, acutioribus, fere lamelliformibus, sed cæteris non latioribus ornato. Lam. inferu supra valde approximata, validior, magis horizontaliter in mediam aperturam prosiliens, e basi intuenti callosa subspiraliter intrans. Alt. 19, lat. $3\frac{1}{2}$ mm.; alt. apert. 4, lat. apert. 3 mm.

Hab. Roumili near Tarrha, south coast of Crete (*Spratt*).

This curious shell seems in its whole exterior appearance to be nothing but a large form of *C. tenuicostata*, P.; but on studying with attention the inner plaits, one finds that the figure and position of the inferior lamella is remarkably different. But I cannot believe that this variety, being in its outer form, size, colour, and costulation identical with *C. tenuicostata*, should represent a really distinct species.

The var. *strictecostata*, Bttg. (Mon. d. Claus.-Sect. *Albinaria*, p. 28, t. i. fig. 6), has been found by Admiral Spratt in Sphakia, south of Crete, in a nearly typical specimen. One did not yet know till now any sure locality for this Cretan form, well distinguished from *C. tenuicostata* typica by the costation of the neck, whose ribs are not at all stronger than in the median whorls, and by the deep-lying spiral lamella, which does not approach the lamella supera. Alt. $17\frac{1}{2}$ – $18\frac{1}{2}$, lat. $3\frac{1}{2}$ –4 mm.; alt. apert. 4, lat. apert. $2\frac{3}{4}$ –3 mm.

10. CLAUSILIA CANDIDA, Pfr. P. Z. S. 1849, p. 135.

This species, specimens of which Admiral Spratt found near Khania, island of Crete, is absolutely identical with *C. straminea*, Ad. Schmidt, System. d. europ. Claus. 1868, p. 91.

11. CLAUSILIA APHRODITE, n. sp. (Plate XXXIII. fig. 3.)

Peraff. *C. arthurianæ*, Blanc, sed sordide brunnea, penitus albidocostulata, spira exserta validiusque concave producta, apice concolori. Anfr. $12\frac{1}{2}$, exceptis duobus primis confertim capillaceo-costulati nec striati, costulis anfr. ultimi antice vix validioribus. Apert. apparatusque claustralis affines, sed peristomate superne magis soluto, faucibus hepaticis; lam. supera minus alta, infera vel stricta vel subconcava nec semicirculari oblique ascendente. Cæterum *C. arthurianæ* simillima, sed plicis lamellisque omnibus, ut videtur, minus validis acutisque. Alt. 19, lat. $4\frac{1}{2}$ mm.; alt. apert. $4\frac{1}{4}$, lat. apert. $3\frac{1}{2}$ mm.

Hab. Pass over Tyllisso near Megalokastrou, island of Crete (Spratt).

This form is easily distinguished from *C. arthuriana*, Blanc, by the brown colour and the white or grey ribs of its shell, whilst *C. arthuriana*, from Spinalunga island, Crete, is quite isabel-coloured and only very finely striated. So the new species has more the appearance of *C. hippolyti*, Bttg., from Mount Ega, Crete; but it is not spotted like that, and has a more complicated apparatus claustralis.

12. CLAUSILIA THIESSEÆ, Bttg. (Plate XXXIII. fig. 4.)

Nachr.-Blatt d. d. Malakozool. Ges. 1880, p. 48.

I give here a drawing of this fine shell, not yet figured, which seems to occur not rarely in Akarnania, Morea (*Dr. Theod. Krueper*) and in the neighbourhood of Patras, Morea (*Thiesse* and *Consul Nik. Konéménos*).

13. CLAUSILIA BIGIBBOSA, Charp. Zeitschr. f. Malak. 1847, p. 143.

I possess in my collection the typical form of this species from Natolia. It measures, alt. $15\frac{1}{2}$ – $20\frac{1}{2}$, lat. 4– $4\frac{1}{2}$ mm.

F. MAJOR, m. *Typo major robustiorque*, anfr. tertio usque ad sextum distantius costulato-striatis, crista cervicis exteriori magis geniculata, minus rugosa. Alt. 22, lat. 5 mm.; alt. apert. 5, lat. apert. 4 mm.

Hab. Arsa, valley near Xanthus, Lycia (Spratt).

Var. EVANIDA, mihi.

Typo multo minor, claviformis, anfr. 10, ultimo minus valide bicristato. Apert. multo minor, peristomate subappresso, vix expanso, haud reflexo. Lamellæ plicæque minus validæ; loco parietalis superioris obsoletæ antice solum tuberculum album adest. Alt. 14 $\frac{3}{4}$, lat. 3 $\frac{1}{2}$ mm.; alt. apert. 3, lat. apert. 2 $\frac{1}{3}$ mm.

Hab. Asia Minor, without exact indication of habitat (my collection).

Quasi a weakling, and easily to be distinguished from the type by the characters mentioned.

14. CLAUSILIA BREVICOLLIS, Pfr. Zeitschr. f. Malak. 1849 p. 107.

Var. CASIA, mihi.

Typo gracilior, albido-grisea, punctis strigisque obscuris adspersa, anfr. paullulum convexioribus, densestriatis nec costulatis. Apert. angustius rhomboideo-oblonga. Alt. 14 $\frac{1}{2}$, lat. 3 $\frac{1}{4}$ mm.; alt. apert. 3, lat. apert. 2 $\frac{1}{4}$ mm.

Hab. Island of Kasso (*Spratt*).

Whilst the typical costulated *C. brevicollis* is till now only known from the island of Rhodes, this striated variety inhabits the island of Kasso. It is very probable that one will find this species also in a connecting form in the intermediate island of Karpatho.

15. CLAUSILIA ASTROPALIA, n. sp. (Plate XXXIII. fig. 5.)

Aff. C. cæruleæ, Fér., pusillæ, sed obscure cæsia vel cinerea nec læte lactea, cristis vel crista cervicis obsoleta.—T. parva, profunde arcuato-rimata, regulariter fusiformis, gracilis, tenera, oleo nitens, obscure cæsia vel cinerea subunicolor, apice nigra. Anfr. 10 $\frac{1}{2}$ –11 convexiusculi, sutura distincta submarginata disjuncti, vix striatuli, fere læves, ultimus antice striato-costulatus, basi obsoletissime bicristatus, cristis brevibus, indistinctis, perapproximatis vel confluentibus, parum validius costulatis. Apert. parva, oblongo-ovata, intus obscure hepatica; perist. solutum. Cæterum C. cæruleæ, Fér., simillima. Alt. 13 $\frac{1}{2}$ –15 $\frac{1}{2}$, lat. 3–3 $\frac{1}{2}$ mm.; alt. apert. 3–3 $\frac{1}{2}$, lat. apert. 2 $\frac{1}{4}$ –2 $\frac{1}{2}$ mm.

Hab. Island of Astropalia (*Spratt*).

A fine new species of the *cærulea* group, but smaller than *C. cærulea*, Fér., and *C. anaphiensis*, Bttg., of an obscure yellowish-grey colour, and with nearly obliterated neck-crests, which are still more feeble than in *C. maculata*, Rsm.

16. CLAUSILIA MILLERI, Pfr. P. Z. S. 1849, p. 136.

Island of Rhodes (*Spratt*), in the typical form and in a second form with more glabrate median whorls; but still more allied to *C. milleri*, P., than to *C. cærulea*, Fér. One only knew this species (or subspecies) till now from the island of Paros (*Miller*).

17. CLAUSILIA CÆRULEA, Fér. Prodr. 520.

Now I know this interesting and variable shell with absolute certainty

from the following Greek islands:—Tino, Syra (here in a greater and in a smaller form), Mykono (*Thiesse*), Nikaria (*Thiesse*), Antiparo, Paro (*Thiesse*), Naxia (*Thiesse*, here also in a greater and in a smaller form), Nio, Amurgo, and Santorin. Not quite sure as to the island of Eubœa (f. *eubœica*, Mousson); still dubious as to the islands of Sipheno and Chios, and very uncertain as to Cyprus.

I can, however, now add to these localities the island of Crete as another habitat, where it is said to occur in the following characteristic variety.

Var. CRETENSIS, Pfr. Mon. Hel. ii. 1848, p. 115 (species; non *Claus. cretensis*, Rossm.).

T. aff. var. minori, P., *cristis basalibus sulco levissimo separatis, superiore fere obsoleta. Lam. supera subnulla, spiralis, recedens, infera, ut videtur, minus valida. Alt. 16, lat. 3½ mm.*

Hab. Island of Crete (*Spratt*), but without exact indication of habitat.

18. CLAUSILIA KREGLINGERI, P. Malak. Blätter, xiii. 1866, p. 148.

This species does not inhabit the island of Santa Maura, as Dr. Pfeiffer says, but the north of the island of Eubœa (*Thiesse*).

19. CLAUSILIA SCULPTICOLLIS, n. sp. (Plate XXXIII. fig. 6.)

Intermedia inter C. moreletianam, Blanc, et C. corrugata. Drap., var. draparnaudi, Beck, sed apice subconcolori sculpturaque cervicis valde diversa.—Differt a C. corrugata, draparnaudi, Beck., minore, minus ventriosa, apice clarius corneo, anfr. 12, præsertim junioribus, magis convexis ibidemque sutura crenulata disjunctis, ultimo conico, a latere valde compresso, distincte bicristato, cristis longis, arcuatis, exteriori altiore, plicis validissimis exasperata. Apert. multo angustior, magis oblonga; lam. infera subbifurcata; perist. minus late expansum. Cæterum forma, sculptura, colore simillima. Alt. 19, lat. 4½ mm.; alt. apert. 4¾, lat. apert. 3½ mm.

Hab. Sofrana Islands, north of East Crete (*Spratt*).

This fine shell connects the group of *C. corrugata*, *Drap.*, with which it agrees in all parts, save the form and the sculpture of the neck, with that of *C. cærulea*, Fér.,—wherein *C. anaphiensis*, Bttg., shows a remarkable analogy in the figure and position of the two crests on the neck. I regard as a good local variety the following,

Var. UNIA, mihi. (Plate XXXIII. fig. 7.)

Differt a typo t. multo graciliore, clavato-fusiforimi, cæsia vel sordide alba, punctis strigisque fuscis adpersa, nec cæruleo-alba unicolori; spira valde attenuata; apice submamillato, omnino testæ concolori. Anfr. infraapicales, præterea ultimus sæpeque penultimus distinctius costulati, costis cervicis uti in typo sursum alternantibus vel bifidis, tum multifidis usque ad suturam ascendentibus. Apert. apparatusque claustralis

typo simillima, sed lam. supera brevissima, perist. minus expanso discrepans. Alt. $17\frac{1}{2}$ –18, lat. $3\frac{1}{2}$ – $3\frac{3}{4}$ mm. : alt. apert. 4, lat. apert. 3 mm.

Hab. Unia Islands, north of East Crete (Spratt).

The form of the neck and the apparatus claustralis being nearly identical, this shell must be considered a local variety of *C. sculpticollis*, though its colour and habitus are indeed very different from those of the shell inhabiting the neighbouring Sofrana Islands.

20. CLAUSILIA HERACLEENSIS, n. sp. (Plate XXXIII. fig. 8.)

B.M

T. breviter rimata, fusiformis vel turrito-fusiformis, tenera, nitida, lactea, hic illic griseo-strigata; spira magis minusve elongata; apex corneus. Anfr. $11\frac{1}{2}$ –12 convexiusculi, sutura simplici disjuncti, fere læves, sed striis spiralibus necnon transversis obliquis obsoletissimis quasi malleolati; ultimus deorsum angustatus, a latere compressus, bicristatus, cristis longissimis sed parum validis, parallelis, exteriore distinctiore, ante aperturam paucirugatus, rugis solum 4–6 distantibus, parum validis, sursum evanidis, sed acutiusculis. Apert. parva, ovato-oblonga, faucibus fuscis, perist. parum expanso, albo; lamellæ subæquales, supera spiralem fere attingens, infera semilunaris oblique ascendens, intus subfurcata, subcolumellaris et oblique intuenti non conspicua; lunella valde arcuata, subdorsalis. Alt. 18– $20\frac{1}{2}$, lat. 4 mm.; alt. apert. $3\frac{3}{4}$, lat. apert. $2\frac{3}{4}$ mm.

Hab. Near Kandia (town), island of Crete (Spratt).

One of the Admiral's most interesting species, and without close relation to any other known *Albinaria*. The neck-crests being analogous in form to those of *C. sculpticollis*, I think best to rank it here next to that species. But the habit also approaches somewhat that of *C. olivieri*, Roth; and so the new shell seems to connect the *olivieri* with the *cærulea* group. Accordingly I prefer to place it in a group by itself in the vicinity of the *cærulea* group.

21. CLAUSILIA MANSELLI, n. sp. (Plate XXXIII. fig. 9.)

Statura magnitudineque C. extensæ, P., et C. distantis, P., colore, sculptura spiræ, forma apertura C. claræ, Bttg., sculptura cervicis C. extensæ, P. Valde aff. C. claræ, Bttg., sed turrito-fusiformis; anfr. 12–13, sutura haud marginata, sed costis transgredientibus distincte crenata disjuncti, costis æquidistantibus, subalternantibus, 11–12 in singulis anfractibus ornati; ultimus æque costatus ac penultimus, costis 11–12 non validioribus, sursum prope aperturam bifidis. Forma apertura late ovalis apparatusque claustralis C. claræ, Bttg. Alt. ca. $22\frac{1}{2}$, lat. $4\frac{1}{2}$ mm.; alt. apert. $4\frac{1}{2}$, lat. apert. $3\frac{1}{3}$ mm.

Hab. Kavallos Islands, east of Crete (Spratt).

This species, which I name in honour of Rear-Admiral Arthur Lucis Mansell, who for many years served in the Levant under Vice-Admiral Spratt (see Spratt's 'Travels and Researches in Crete') and now resides at Chalkis, is nearly allied to *C. clara*, Bttg., from the Bay of Mirabello; but the ribs of its shell are nearly equidistant and

alternating, whilst in *C. clara*, of which the habitus is shorter and more ventricose, the intervals between the ribs enlarge steadily from apex to aperture. The same character as in the new species is to be seen in *C. distans*, P., from Soudsouro Bay; but here the costulation is finer (17 ribs on each whorl), and the inferior lamella is distinctly bifurcate.

22. *CLAUSILIA CLARA*, Bttg. Mon. Claus.-Sect. *Albinaria*, p. 70, t. 3. fig. 1.

Var. *MULTICOSTA*, mihi.

Differt a typo t. majore, ventricosiore, spira magis concave producta; anfr. 12-12½, costis spiræ minus validis duploque pluribus (23-26 in anfr. penultimo), minus spatiosis ornati. Apert. latior, rotundato-ovata, perist. magis expanso. Cæterum et præcipue costis cervicis simillima. Alt. 18½-20, lat. 4½-4¾ mm.; alt. apert. 4½, lat. apert. 3¾ mm.

Hab. Mirabello, N.E. of Crete (*Spratt*).

A larger variety, with one whorl more, well characterized by the more finely costulated upper whorls.

Var. *PAUCICOSTA*, mihi.

Colore sculpturaque fere intermedia inter C. præclaram, P., et C. claram, Bttg., sed huic multo magis affinis. Differt a typo t. fere subfusco-grisea, costis anfr. omnium minus numerosis (in anfr. ultimo 7, in penultimo 10, in antepenultimo 9 etc.). Lam. supera minor, fere punctiformis. Alt. ca. 18½, lat. 4¼ mm.; alt. apert. 4, lat. apert. 3 mm.

Hab. St. Nikolo Island, Gulf of Mirabella, Crete (*Spratt*).

Whilst var. *multicosta* has a much denser costulation in the median whorls, this variety is nearly as widely costulated as *C. præclara*, P. But the latter species shows 6 ribs in the last whorl, ours 7; and 6 and 6, ours 10 and 9, ribs in the penultimate and antepenultimate whorls.

23. *CLAUSILIA PRÆCLARA*, Pfr. Zeitschr. f. Malakoz. 1853, p. 150.

F. MAJOR, m. *T. typo major, clarius isabellino-albida, costis in anfr. ultimo 7, in anfr. penultimo 9, in anfr. antepenultimo 8 ornata. Apert. multo major, lam. supera longa. Alt. ca. 21½, lat. 6 mm.; alt. apert. 5, lat. apert. 4 mm.*

Hab. The south-east of Crete (*Spratt*).

The type, of smaller size and aperture and showing fewer ribs on the whorls, lives near the shores of the Gulf of Mirabella. *C. præclara*, P., the crown of the palæartic *Clausiliæ*, is easily distinguished from *C. clara*, Bttg., by its fewer and constantly curved and convex ribs.

24. *CLAUSILIA VERMICULATA*, n. sp. (Plate XXXIII. fig. 10.)

Habitu sculpturaque spiræ C. vesti, mihi, similis, sed sculptura cervicis, forma aperturæ, apparatu claustrali C. retusæ, Oliv.,

propior.—*T. vix rimata, subclavato-fusifformis, opaca, calcareo-alba, in interstitiis costularum hic illic cinerea, apice nigra. Anfr. ca. 12 vix convexiusculi, sutura laevi crenata disjuncti, dense valideque undulato-costulati, costulis saepe sursum bifidis, interstitiis verticaliter substriatis; ultimus parum attenuatus, vix validius et aequae ac caeteri costulatus, costulis ad suturam plerumque bifidis, basi distincte anguste sulcatus, obsolete bicristatus, crista inferiore distinctiore striis densis ornata. Apert. ampla, late oblonga, basi valde recedens, intus fusco-castanea, perist. albo. Apparatus claustralis lamellæque valde aff. C. tereti, Oliv., lunella obsoleta, apice clausilii corrotundato. Alt. ca. 21, lat. $4\frac{1}{4}$ mm.; alt. apert. $4\frac{1}{2}$, lat. apert. $3\frac{1}{4}$ mm.*

Hab. Zakro?, east of Crete (Spratt).

One of the most difficult forms of the island of Crete. It looks nearly like certain forms of *C. corrugata*, Drap., var. *inflata*, Oliv., from Caudia; but the shape of the neck, the receding base of the mouth, and the deep brown colour of its interior shows that we must search for its allies amongst *C. teres*, Oliv., and *C. retusa*, Oliv. The form of the neck and also the mouth and the apparatus claustralis being very analogous to those of *C. retusa*, I think it best to place it between this species and *C. vesti* of the *olivieri-teres* group.

25. CLAUSILIA VESTI, n. sp. (Plate XXXIV. fig. 11.)

Quasi intermedia inter C. corrugatum, Drap., f. epimenides, Blanc, et C. teretem, Oliv., sed huic magis affinis.—*Differt a C. tereti, Oliv., t. tota valide costulata. Anfr. 15 planissimi, sutura submarginata disjuncti, exceptis apicalibus costulati, costulis validis, rectis, strictis (30 in anfr. penultimo), interstitiis spiraliter substriatis; ultimus distantius validiusque costulatus, costulis pp. 20, ante aperturam altioribus, undulatis, sursum hic illic dichotomis, basi parum distincte breviter subbicristatus, crista umbilicali pliculis sat validis crenata. Apert. C. teretis, Oliv., sed lam. supera longa nec punctiformis, infera minus distincte bifurcata. Caeterum huic speciei simillima. Alt. $27\frac{1}{2}$, lat. $4\frac{1}{2}$ mm.; alt. apert. $5\frac{1}{2}$, lat. apert. $3\frac{2}{3}$ mm.*

Hab. Sitia Bay, N.E. of Crete (Spratt).

This fine form, which I name in honour of Herr von Vest of Hermannstadt, Transylvania, author of an important and very interesting paper on the classification of this genus, is perhaps only a variety of *C. teres*, Oliv.; but because intermediate stages of sculpture are wanting between these two shells, and differences also exist in the form of the neck and of the lamellæ, I have thought it better to create a new species for it. *C. corrugata*, Drap., var. *inflata*, Oliv., in its beautiful large local form *epimenides*, Blanc, which inhabits the Spinalunga peninsula, is, on the other hand, a nearly allied shell; but its ventricose form, the different costulation of the neck, the largeness and different position of the inferior lamella, and the absence of the small superior palatal plait will easily distinguish the two species.

Var. SUTURALIS, m.

Differt a typo t. minore, magis ventriosa, gilvo-alba, anfr. 13½, sutura distincte marginata disjunctis, costulis spiræ densioribus (40 in anfr. penultimo), magis undulatis et hic illic sursum dichotomis, lam. infera majore distinctiusque bifurcata, faucibus clarioribus, fusciscentibus nec læte castaneis. Alt. 24, lat. 4½ mm.; alt. apert. 5¼, lat. apert. 3¾ mm.

Hab. Sitia peninsula, N.E. of Crete (*Spratt*).

This variety agrees more nearly with *C. corrugata* f. *epimenides*, Blanc, than the type, but is easily distinguished from it by the denser and more acute costulation, the yellowish-white colour, the form of the neck, and the distinctly bifurcate inferior lamella.

26. CLAUSILIA TERES (Olivier), Voyage, i. p. 417, tab. 17. fig. 6.

The type of this fine species was found by Admiral Spratt near Cape Sidaro, and at Yani Khan in the N.E. of Crete.

F. PHALANGA, mihi. Differt a typo t. majore, multo magis cylindrata, anfr. 16, mediis 8 fere lævibus, vix substriatis, sed obsolete spiraliter lineatis. Alt. 28, lat. 4¼ mm.; alt. apert. 5, lat. apert. 3¼ mm.

Hab. The north-east of Crete (*Spratt*), without distinct indication of locality.

Var. INSULARIS, m.

A C. tereti (Oliv.) typica discrepans t. minore, ventrioso-fusiformi, spira multo minus elongata. Anfr. 13-14, medii obsolete ruguloso-costulati; ultimus costulis validioribus, sursum plerumque multifidis exasperatus, lamellis aperturæ validioribus, supera longiore, infera magis protracta, sigmoidea ascendente, intus vix bifurcata. Alt. 20½, lat. 4½ mm.; alt. apert. 4½, lat. apert. 3 mm.

Hab. Island of Kophino, E. of Crete (*Spratt*).

This form seems to be a local variety of *C. teres* (Oliv.), but is remarkably shorter, more ventricose, with stronger and more oblique ribs on the neck, and with distinctly more developed lamellæ. The neck and the form and position of the lamellæ are also quite similar to those of *C. olivieri*, Roth; but the white and not at all brown peristome, and the milk-white, not spotted, colour of the shell, are foreign to the Rhodian species and agree better with *C. teres* (Oliv.).

27. CLAUSILIA CARPATHIA, n. sp. (Plate XXXIV. fig. 12.)

Aff. C. olivieri, Roth, sed calcureo-alba, anfr. 12½, sutura profundiore disjunctis, acute costulatis, perist. albo.—T. fusiformi-turriti, opaca, calcarea, hic illic leviter griseo adpersa; spira elongata turrita; apex corneus. Anfr. convexiusculi, sutura sat profunda, subcrenulata disjuncti, valide costulati, costulis (30 in anfr. penultimo) acutis, substrictis, in anfr. ultimo parum validioribus nec crebrioribus. Apert. ovato-oblonga, lam. spirali

inferaque magis recedentibus, faucibus fuscescentibus, perist. albo, sublabiato. Cæterum C. olivieri, Roth, simillima. Alt. 21, lat. 4 mm.; alt. apert. 4 $\frac{1}{4}$, lat. apert. 3 mm.

Hab. Island of Karpatho (*Spratt*).

Next to *C. olivieri*, Roth, from the island of Rhodes, with nearly the same form and costulation of neck, but with acuter and stronger ribs on the shell than even in *C. turrita*, P.

28. CLAUSILIA PRIVIGNA, n. sp. (Plate XXXIV. fig. 13.)

Peraff. C. carpathiæ, mihi, sed minor, clavato-fusiformis, subventriosa, fusco-isabellina, albido-costulata, apice concolori. Anfr. 12 perconvexi, humiles, lentius accrescentes, costis crebrioribus (38 in anfr. penultimo), rudioribus, fere lamelliformibus, valde arcuatis, sursum sæpe dichotomis ornati, ultimus multo humilior, basi rotundatus. Apert. minor, rotundato-ovata, lam. infera minus recedente, faucibus obscure castaneis, perist. parum expanso, vix reflexo. Cæterum C. carpathiæ simillima. Alt. 17 $\frac{1}{2}$, lat. 4 mm.; alt. apert. 3 $\frac{2}{3}$, lat. apert. 2 $\frac{3}{4}$ mm.

Hab. Sofrana Islands (*Spratt*).

This species is indeed closely allied to the preceding and surely related by blood; but its habitus is always quite different, and it would be unscientific to place both in the same species. The shell from the Sofrana Islands has constantly a more round, *C. carpathia* a more oblong cross section of their whorls. Also *C. saxatilis*, P., from Cyprus is an allied shell, but distinctly to be distinguished by its less convex whorls and much deeper-lying apparatus claustralis.

29. CLAUSILIA TURRITA, Pfr. P. Z. S. 1849, p. 135.

Admiral *Spratt* found this species, which was till now only known from the islands of Milo, Sipheno, and Amorgo, also in the island of Andro. Here it is more slender than my var. *sypheia*, from Sipheno, but in other respects there seems to exist no difference.

30. CLAUSILIA UNICOLOR, Btbg. Mon. Claus.-Sect. *Albinaria*, p. 80, tab. 3. fig. 3.

This interesting species, of which the native country was not known, has been discovered by Admiral *Spratt* in the islands of Karpatho and Saria (N. of Karpatho). Specimens from Karpatho measure—alt. 16–17 $\frac{1}{2}$, lat. 3 $\frac{1}{2}$ –4 mm., alt. apert. 3 $\frac{1}{2}$ –3 $\frac{3}{4}$, lat. apert. 2 $\frac{3}{4}$ –3 mm.; those from Saria—alt. 17–19, lat. 3 $\frac{3}{4}$ mm., alt. apert. 3 $\frac{1}{2}$, lat. apert. 3 mm.

31. CLAUSILIA EBURNEA, Pfr. P. Z. S. 1854, p. 296.

The type of this species, inhabiting the White Mountains, island of Crete (*Spratt*), though in its exterior very similar to *C. glabricollis*, P., from Akarnania, seems to be more allied to *C. ungeri*, Zel., and *C. virgo*, Mouss., both from Cyprus and both belonging to the *munda*, than to the *scopulosa* group, inhabiting exclusively Morea and the adjacent islands.

32. *CLAUSILIA GLABRICOLLIS*, Pfr. Malakoz. Blätter, xiii. 1866, p. 147.

Of this species, whose type inhabits Akarnania, Consul A. Letourneux has recently found a smaller variety near Kerassovo in Ætolia (Consul Nik. Konéménos). Alt. $15\frac{1}{2}$, lat. $3\frac{1}{2}$ mm.; alt. apert. $3\frac{1}{2}$, lat. apert. $2\frac{3}{4}$ mm.

33. *CLAUSILIA CONEMENOSI*, n. sp. (Plate XXXIV. fig. 14.)

T. intermedia inter C. cyclothyram, Bttg., et C. hiantem, Bttg., sed fere perforato-rimata, calcareo-alba, anfr. non lævibus sed valide et distantius costulatis quam iis C. hiantis, costulis per-obliquis, valde arcuatis, in anfr. ultimo non validioribus, imo fere densioribus, crista basali validiore, compressa, arcuata, sursum sulco tenui circumscripta. Apert. rotundato-ovata, faucibus albidis concoloribus vel flavescens, palatali supera distincta. Alt. $12-14\frac{1}{2}$, lat. $2\frac{3}{4}-3$ mm.; alt. apert. $2\frac{3}{4}$, lat. apert. $2\frac{1}{4}$ mm.

Hab. Perivola, Bezaïti and Mount Amblo near Patras, Morea (Konéménos).

This little species, to which I give the name of its discoverer, my friend the Turkish Consul Nikolaus Konéménos at Patras, is easily distinguished from *C. cyclothyra*, Bttg., by its calcareous and not milk-blue colour, by the light yellowish, and not bright brown, interior of the mouth, and by its costulated median whorls. From *C. hians*, Bttg., it may be discerned by the less grey colour, by the more costulated and not striated shell, by the longer spiral lamella, the longer and very distinct principal plait, and by the presence of a distinct superior palatal plait.

34. *CLAUSILIA HIANS*, Bttg. Mon. Claus.-Sect. *Albinaria*, p. 87, tab. 3. fig. 5.

Var. *SUBLACTEA*, m.

Differt a typo t. fere lactea, striis vel costulis spiræ vel minus acutis vel subobsoletis, palatali supera interdum punctiformi.

Alt. $14\frac{1}{2}$, lat. 3 mm.; alt. apert. 3, lat. apert. $2\frac{1}{2}$ mm.

Hab. Ætolia (Konéménos).

This variety cannot be confounded with *C. conemenosi*, mihi, because it shows the fine striation and the incomplete apparatus claustralis of the true *C. hians*, Bttg., from Akarnania.

35. *CLAUSILIA DISCOLOR*, Pfr. Symbol. iii. p. 93.

Has been sent to me by Miss Joséphine Thiesse, of Chalkis, in the var. *inæqualis*, Blanc, also from the Gythion Mountains next Marathonisi in Lakonia.

36. *CLAUSILIA GRAYANA*, Pfr. Symbol. iii. p. 94.

This shell has been discovered at the island of Servi (Elaphonisi) by Admiral Spratt in a f. *gracilior*, mihi, which has a more finely striated shell, the interior of the aperture yellowish and not brown, and only alt. $14\frac{1}{2}$, lat. $3\frac{1}{4}$ mm.; alt. apert. $3\frac{1}{4}$, lat. apert. $2\frac{1}{4}$ mm.

37. *CLAUSILIA GOLDFUSSI*, n. sp. (Plate XXXIV. fig. 15.)

T. magna, fere perforato-rimata, clavato-fusifformis, ventriosa, lactea, hic illic cinereo-punctata, nitida; spira turrita; apex corneus. Anfr. 11½–12 convexiusculi, sutura distincta disjuncti, læves, ultimus penultimo vix altior, basi bene rotundatus, sulco levissimo obsolete bigibbus, prope aperturam dense costulato-striatus. Apert. parva, rotundato-ovata, faucibus luteis; perist. continuum, brevissime solutum, fere non expansum, simplex. Lam. supra fere deficiens, in nodulis 2 continuis parum validis constituta, spiralis, recedens; infera profunda, alta, semilunaris, subbifurcata, ascendens; subcolumellaris valida, oblique intuenti conspicua; plica principalis brevissima, altissima, remota a sutura; lunella dorsalis, valde arcuata. Clausilium angustum, apice acutissimo instructum. Alt. 22½–23, lat. 5¼–6 mm.; alt. apert. 4½–5, lat. apert. 3¾–4 mm.

Hab. Mountains of Taygetos, Sparta (*Dr. Theod. Krueper*).

This great and remarkable shell, which my friend Herr O. Goldfuss, at Halle-Saale, has presented to me, seems to be isolated amongst all the other known *Albinariæ* of the Morea. It unites the habit and colour of the little *C. incrustata*, mihi, with the mouth of *C. arcadica*, mihi, and the inferior lamella of *C. messenica*, v. Mts., with the form and sculpture of the neck of *C. contaminata*, Rossm. It forms, as I believe, a special group intermediate between the *voithi* and the *maculosa* groups, and is especially characterized by its not quite perfect apparatus claustralis.

38. *CLAUSILIA KRUEPERI*, Pfr. Malakoz. Blätter. xiii. 1866, p. 152.

This species, to which I now attach as a variety my *C. dissipata* (Mon. Claus.-Sect. *Albinaria*, 1878, p. 99, tab. 3. fig. 6) = *C. fureilla*, Westerlund (Aperçu s. l. Faune Malac. d. l. Grèce, Naples 1879, p. 113), has a much wider geographical distribution than one could anticipate a few years ago. We now know this var. *dissipata*, Bttg., from Mesolongi, Mount Varassova and Epakto in Roumelia, and from Mount Elias and Gerakomio, near Patras, in the Morea. The following new variety seems to inhabit more the south of the Nomen (province) of Ilia.

Var. *HOLOSTOMA*, m.

A typo discrepans t. magis albida, spira hic illic distinctius corneo vel griseo strigata, anfr. mediis plerumque densius distinctiusque striatis, perist. continuo, paullulum soluto. Alt. 12½–13½, lat. 3½ mm.; alt. apert. 3½, lat. apert. fere 3 mm.

Hab. Cape Katakolo, S. of Ilia, Morea (*Thiesse*).

This distinct variety may easily be distinguished both from the type and from the var. *dissipata*, Bttg., by its whitish colour and by a peristome not only continuous but often even distinctly protracted.

39. CLAUSILIA ARCADICA, Bttg., Mon. Claus.-Sect. *Albinaria*, p. 101, tab. 3. fig. 7 (*maculosa*, subsp. *arcadica*, Bttg., olim).

For this fine-coloured shell I can now add the localities Mamoussá near Vostitsa (*Consul Nik. Konéménos*), Megaspiléo near Kalavryta (*Konéménos*), both localities in the north of the Morea, and Mount Cylline, Sparta (*Thiesse*). Having in my hands more copious material than during the publication of my dissertation on the section *Albinaria*, I can now with more certainty give my opinion on the specific value of this form. The diagnosis of this species may be:—

Discrepans a C. maculosa, Desh., typica t. majore, graciliore, tenuiore, strigis corneo-fuscis distinctioribus variegata, spira longe attenuata. Anfr. 11–12½, planiores, ultimus basi distinctius gibbosa, obsolete sulcatus, ante aperturam validius costulato-striatus. Apert. minor, regulariter ovata; perist. parum expansum, vix aut non labiatum. Lam. supera vel parva vel obsoleta, recedens; subcolumellaris oblique intuenti aut vix aut non conspicua; lunella deorsum sæpe obsoleta. Alt. 16½–20½, lat. 3½–5 mm.; alt. apert. 3½–4½, lat. apert. 2¾–3¼ mm.

Hab. Interior of North and Central Morea.

40. CLAUSILIA SCHUCHI, Rssm., see Boettger, Mon. Claus.-Sect. *Albinaria*, p. 102.

Var. OSCARII, Thiesse, MS. (Plate XXXIV. fig. 16.)

Differt a typo t. maxima, valde ventriosa, lactea unicolor, vel raro-strigillata vel punctata, anfr. 11–12, mediis fere semper lævibus, perist. magis expanso. Alt. 19–19½, lat. 4¾–5½ mm.; alt. apert. 4½, lat. apert. 4 mm.

Hab. Vitylo and Mount Cylline, Sparta (*Thiesse*).

This curious form cannot be separated from the little brown-striped typical *C. schuchi*, Rssm., of Navarino, although it has a very peculiar aspect by its great size, uniform colour, and ventricosity; but the plaits and lamellæ of the mouth and the apparatus claustralis are absolutely identical in both forms.

41. CLAUSILIA INCRUSTATA, n. sp. (Plate XXXIV. fig. 17.)

Peraff. C. contaminatæ, Rssm., var. solutæ, Mouss., sed sub epidermide lactea fusca; anfr. ultimus gibbere umbilicali distinctiore, magis compresso instructus, prope aperturam subconstrictus; apert. minor, angustior, sub sinulo magis compressa; perist. breviter expansum, acutum, calloso-labiatum; lam. supera longissima, acuta; infera multo altior, semilunaris, subcolumellaris, oblique intuenti non conspicua. Alt. 15½–16, lat. 4–5 mm.; alt. apert. 3¾, lat. apert. 3–3¼ mm.

Hab. Island of Servi or Elaphonisi (*Spratt*).

This very peculiar shell is distinguished from *C. contaminata*, Rssm., by its high and long lamella supera, by its very strong lamella infera, and by the totally concealed lamella subcolumellaris.

Sect. *Papillifera*, ex rec. Bttg.42. *CLAUSILIA ABYSSOCLISTA*, n. sp. (Plate XXXIV. fig. 18.)

Aff. *C. bathyclista*, *Blanc*, *sed gracilior, anfr. 11 dense striatis nec fere lævibus, plica principali suturæ valde approximata, longissima, ventrali, lunellam rectam strictamque brevem, latam, I-formem, subventralem intus valde transgrediente. Pl. palatales nullæ. Perist. albo-nec fuscuro-labiatum. Alt. 15½–17, lat. 3½–4 mm.; alt. apert. 4, lat. apert. 3¼ mm.*

Hab. Epidaurus, Morea (*Spratt*), together with *C. maculosa*, *Desh.*

A very distinct species of the *bathyclista* group (*Jahrb. d. deutsch. malak. Gesellsch.* 1879, p. 122, tab. 3. fig. 14), easily to be distinguished by the deep ventral lunella and by the absence of the two long palatal plaits.

43. *CLAUSILIA CAMPYLAUCHEN*, n. sp. (Plate XXXIV. fig. 19.)

Aff. *C. osculanti*, v. *Mts.*, *nec non C. blanci*, var. *thebanæ*, v. *Mts.*, *sed albida, undique corneo strigata, apice obscura. Habitu C. thebanæ; anfr. 8½–9, sutura marginata disjuncti, medii obsoletius densiusque striati, ultimus a latere valde compressus, cristis validioribus suleo brevi profundo separatis armatus, crista exterior valde elevata geniculatimque erecta. Apert. rotunda, ad sinulum parum acutata; perist. protractum, satis expansum, sed subsimplex, non autem via labiatum. Apparatus claustralis similis *C. thebanæ*, sed lam. parallela distinctissima, intus altissima; supera brevior; infera altior, semiovata; pliculis suturalibus in callum album unicum punctiformem confusis; principali ante lunellam distincta, antice in callum noduliformem duplicem desinente. Alt. 13–15, lat. 3½–3¾ mm.; alt. apert. 3½, lat. apert. 3¼ mm.*

Hab. Monembasia, Lakonia (*Thiesse*).

This very interesting shell accords in colour with *C. maculosa*, *Desh.*, and in its apparatus claustralis with *C. blanci*, var. *thebana*, v. *Mts.* The absence of the little sutural plaits is a highly characteristic difference from all its allies; and the higher lamella infera and the two white nodules in the palate are also good characters for this species.

C. campylauchen is the first form of the little group of *C. isabellina*, *osculans*, *coarctata*, and *blanci*, which has been found in the proper peninsula of Morea.

44. *CLAUSILIA BLANCI*, v. *Mts.* *Jahrb. d. deutsch. mal. Ges.* 1876, p. 340, tab. 12. fig. 4.

Found by Admiral *Spratt* on Mount *Stylida*, N.W. extremity of *Eubœa*, at 1000 feet alt., and on Mount *Ktypa* in *Bœotia*.

45. *CLAUSILIA CONFUSA*, *Bttg.* *Jahrb. d. deutsch. mal. Ges.* 1878, p. 304, tab. 10. fig. 8.

This species, till now known only from the island of *Cerigo*, has also been found by Admiral *Spratt* in *Servi Bay*, *Morea*.

Sect. *Alinda*, ex rec. Bttg.

46. *CLAUSILIA DENTICULATA* (Olivier), Voyage, i. p. 297, tab. 17. fig. 19.

Var. *SPRATTI*, m.

Differt a typo t. magis turrita, isabellina, anfr. 14-15, apert. magis protracta, sinulo distinctiore, elevato, labio sinistro peristomatis denticulis omnino carente. Alt. 18½, lat. 3½ mm.; alt. apert. 3½, lat. apert. 2½ mm.

Hab. Island of Kos (*Spratt*).

This fine variety differs peculiarly from the type of the islands Andro and Tino by the complete absence of denticulation of the outer lip.

Sect. *Idyla*, v. Vest.

47. *CLAUSILIA THESSALONICA*, K., var. *euboica*, Bttg. Nachr.-Blatt. d. deutsch. malakozool. Ges. 1880, p. 50.

Admiral Spratt collected this variety, which was till now only noted from Hagia Anna in the north of Eubœa, on Mount Stoura, South Eubœa, in 2000 feet alt. Here the form has a more greenish-brown colour, an interrupted peristome, and alt. 14, lat. 3½ mm.

Now, in studying again my rich material of this group, I find that also *C. spreta*, K., from the Prinkipo Islands and from Brussa in Natolia, must be regarded as only a variety of *C. thessalonica*, K.

Sect. *Oligoptychia*, Bttg.

48. *CLAUSILIA SOWERBYANA*, Pfr. P. Z. S. 1849, p. 141.

This rare, always decollated species must be ranked in the section *Oligoptychia*, where it represents a peculiar little group (*Sprattia*) connecting the subsections *Armeniaca*, Bttg., with *Scrobifera*, Bttg., and being well characterized by the truncature of the apex and by the acutely striated shell. Admiral Spratt found this magnificent shell in Evder Khan near Adalia, Pamphylia.

49. *CLAUSILIA EUSTROPHA*, Bttg., 22. u. 23. Bericht d. Offenbacher Vereins f. Naturkunde, 1883, p. 210.

This species, only known till now from the island of Skyatho and from North Eubœa, has been collected in small but typical specimens by Admiral Spratt at the akropolis of Opus, Phthiotis. Alt. 13¼-14½, lat. 3 mm.

50. *CLAUSILIA BICRISTATA*, Rssm. Iconogr. ii. fig. 619.

Var. *TETRAGONOSTOMA*, P., Boettger in 22. u. 23. Ber. d. Offenb. Ver. p. 213.

Has been collected by Admiral Spratt on Mount Oktonia, south of Koumi, Eubœa, at 2000 feet alt., in a form of alt. 17½, lat. 3½ mm., alt. apert. 3⅔, lat. apert. 3 mm., which agrees well with f. *kumensis*, Bttg., but differs in having the same smooth median whorls as the typical form of *tetragonostoma*, P., from Mount Delphi.

A nearly typical f. *kumensis* has been sent me by Herr O. Goldfuss from Steni, Eubœa, which I think may be "Stoura" in south Eubœa. But it is a little smaller, pruinose, the shell thicker, the peristome less expanded. Alt. 15–17, lat. $3\frac{1}{2}$ – $3\frac{3}{4}$ mm.; alt. apert. $3\frac{1}{2}$, lat. apert. 3 mm.

Closely allied to this is a second form of *kumensis* from the south extremity of Eubœa (*Spratt*). Its neck-crests form a clear transition from *C. bicristata* to *C. kephissia*, Roth; but I do not venture to unite these two species from only a single specimen.

Var. CANALICULATA, P., Boettger, *l. c.* p. 187.

Admiral Spratt collected this variety on Mount Dagri, north extremity of the Delphi mountains, at 2000 feet alt., which agrees very well with my f. *major* from Mount Delphi. Alt. $16\frac{1}{2}$, lat. 4 mm.; alt. apert. $3\frac{3}{4}$, lat. apert. $3\frac{1}{4}$ mm.

The little specimens from Mount Soukaro, north of Koumi, obtained by the Admiral at 2000–3000 alt., are almost smaller than the type from Mount Delphi; and the costulation of the neck seems to be more distant. Alt. 12–13, lat. $2\frac{3}{4}$ –3 mm.; alt. apert. $2\frac{3}{4}$, lat. apert. $2\frac{1}{2}$ mm.

51. CLAUSILIA KEPHISSIÆ, Roth, Mal. Blätter, ii. p. 45, tab. 1. figs. 15–17.

Var. DEBILITATA, mihi.

Differt a C. kephissia, Roth, *typica t. multo minore, anfr. solum 10, periomphalo angustiore, cristis basalibus aliquantulum minus validioribus, interlamellari eplicata.* Alt. $14\frac{1}{2}$ –15, lat. $3\frac{1}{4}$ – $3\frac{1}{2}$ mm.; alt. apert. 3, lat. apert. $2\frac{3}{4}$ mm.

Hab. Mount Ktypa, Bœotia (*Spratt*).

This remarkable little variety forms by its feebler neck-crests a quasi passage to *C. bicolor*, P., from Andro island, but resembles *C. kephissia*, Roth, in colour, sculpture, and habitat. In my opinion, however, it is doubtless nearer to the species of the continent.

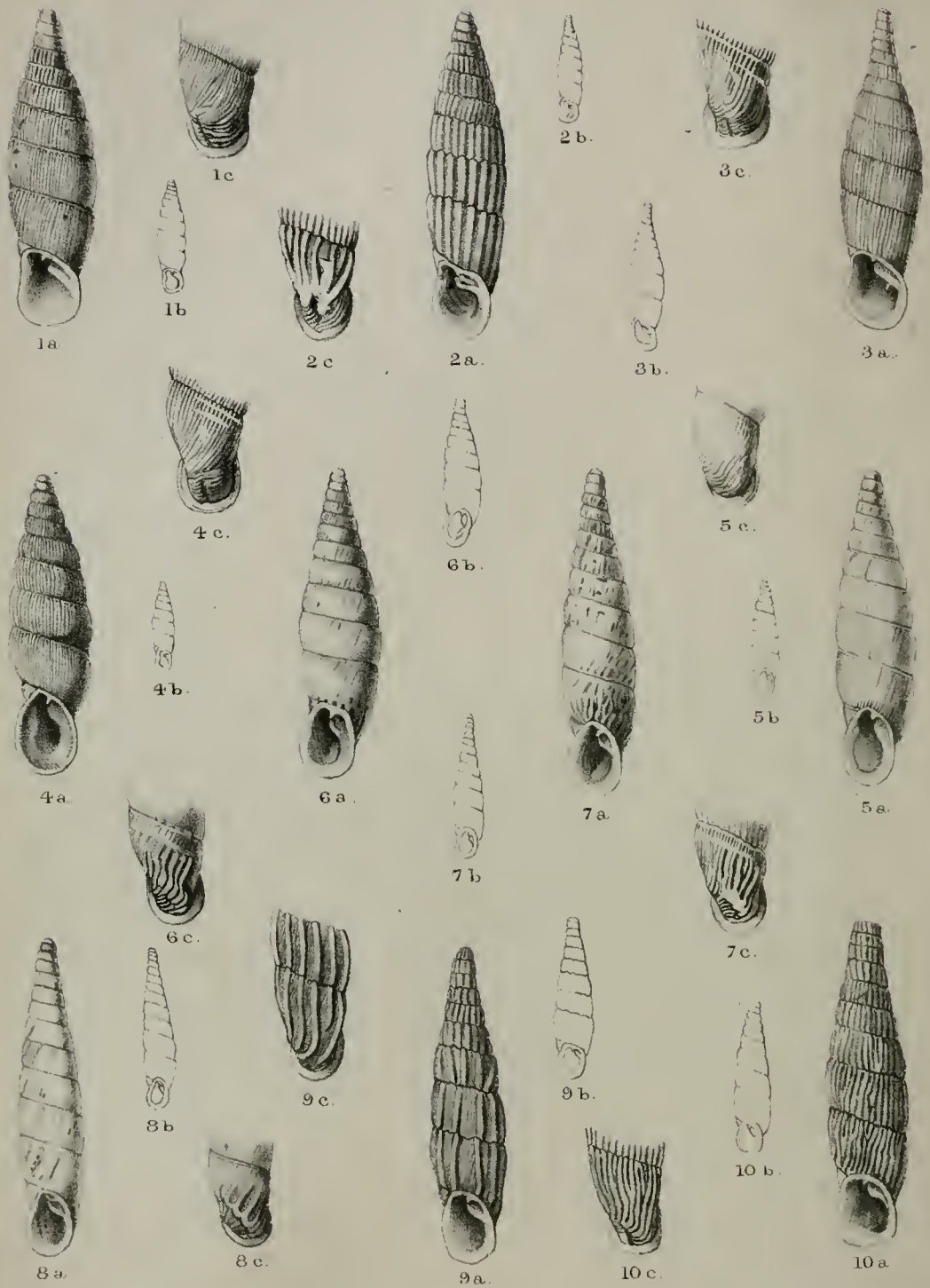
Var. PIKERMIANA, Roth, Boettger, *l. c.* p. 199.

It is curious to find this variety, only known till now from continental Attica, among the inhabitants of the island of Zea (Tzia), where Admiral Spratt picked it up. It is certainly identical with typical specimens of this variety from Pikermi, and also scarcely to be distinguished from specimens from Pan's Grotto near Marathon (*O. Goldfuss*). Alt. $16\frac{1}{2}$, lat. 4 mm.; alt. apert. $3\frac{1}{2}$, lat. apert. $2\frac{3}{4}$ mm.

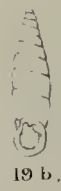
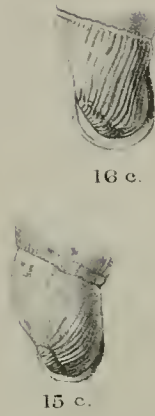
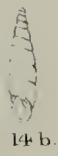
52. CLAUSILIA ROTHII, P., Boettger, *l. c.* p. 204.

This species has been collected by Admiral Spratt in "typical" specimens on the island of Thermia; and now I believe that *C. rothii* does not inhabit Syra—a habitat I always considered doubtful (*l. c.* p. 206).









EXPLANATION OF THE PLATES.

PLATE XXXIII.

- Fig. 1. *Clausilia subvirginica*, p. 327.
 2. — *sublamellosa*, p. 327.
 3. — *aphrodite*, p. 329.
 4. — *thiessæ*, p. 329.
 5. — *astropatia*, p. 330.
 6. — *sculpticollis*, p. 331.
 7. — —, var. *unia*, p. 331.
 8. — *heracleensis*, p. 332.
 9. — *manselli*, p. 332.
 10. — *vermiculata*, p. 333.

PLATE XXXIV.

- Fig. 11. *Clausilia vesti*, p. 334.
 12. — *carpathia*, p. 335.
 13. — *privigna*, p. 336.
 14. — *conemenosi*, p. 337.
 15. — *goldfussi*, p. 338.
 16. — *schuchi*, var. *oscarii*, p. 339.
 17. — *incrustata*, p. 339.
 18. — *abyssoclista*, p. 340.
 19. — *campylauchen*, p. 340.

3. Report on a small Collection of Hymenoptera and Diptera from the Timor Laut Islands, formed by Mr. H. O. Forbes. By W. F. KIRBY, Assistant in the Zoological Department, British Museum.

[Received April 16, 1883.]

The Timor Laut or Tenimber Islands are a small archipelago situated to the north of Australia, about halfway between the island of Timor and the Aru Islands. The largest island is Timor Laut; but the small collection before me, consisting of only five species of Hymenoptera (all new) and three of Diptera, was formed in two of the smaller islands, viz. Larat and Maroe. I will now proceed to describe the Hymenoptera and to notice the Diptera, merely remarking that they exhibit strong affinities to those of the surrounding groups of islands, as would naturally be anticipated beforehand. The specimens are numbered; and I have noted these numbers throughout.

HYMENOPTERA ACULEATA.

APIDÆ.

CROCISA CÆRULEIFRONS, sp. n.

Long. corp. 5 lin.

Female. Black, face and orbits (very broadly above) blue; prothorax with a short stripe behind on each side above, and a very large spot on the sides; mesothorax with seven blue spots—two small