

Genus PSYTTALIA.

Fœm. Corpus convexum, glabrum, latiusculum. Caput transversum, thorace non latius. Antennæ graciles, filiformes, corpore longiores; articuli breves. Scutum subcarinatum. Abdomen ellipticum, sessile, thorace paulo longius non angustius. Oviductus brevis. Pedes breviusculi.

Male. Body convex, smooth, shining, rather short and broad. Head transverse, as broad as the thorax. Antennæ slender, filiform, longer than the body; joints short, numerous. Scutum with a slight keel. Abdomen elliptical, sessile, as broad as the thorax and rather longer. Ovipositor shorter than the abdomen. Legs rather short. Fore wings rather broad; veins in structure somewhat resembling those of *Pygostolus*, to which genus the following species seems to be nearly allied.

PSYTTALIA TESTACEA. *Fœm.* Testacea, mandibulis apice nigris, antennis piceis, basi testaceis, oviductus vaginis nigris, alis cinereis, venis nigris, stigmatè pallide piceo.

Female. Testaceous. Mandibles with black tips. Antennæ piceous, testaceous at the base. Sheaths of the ovipositor black. Wings cinereous; veins black; stigma pale piceous. Length of the body 2 lines; of the wings 4 lines.

[To be continued.]

XXXVI.—*Reply to Mr. Jeffreys's Remarks on a "Note on the Comparative Size of Marine Mollusca in various Latitudes of the British Seas."* By ROBERT M'ANDREW, F.R.S., F.L.S.

MR. JEFFREYS, in the wish to substantiate his proposition that "in general, the size of specimens (of Mollusca) increases in a ratio inverse to their northern and converse to their southern points of latitude," having thought fit to contradict some of my statements, and endeavoured to throw discredit upon others, I feel called upon, very reluctantly (anything in the shape of controversy being opposed alike to my habit and inclination), to revert once more to the question, in order to show that such a proposition not only has not been proved, but is at variance with fact.

I cannot boast the advantage of having dredged in extreme northern or southern latitudes, my researches having been confined within about forty-two degrees of latitude, or some ten degrees north and twenty degrees south of the extreme limits of the British seas; but trust that my opportunities have been such as to make me competent to form an opinion upon the point at issue,—the conclusion I have come to regarding it being entirely the result of personal observation.

Mr. Jeffreys professes to consider *seriatim* all the instances adduced by me as opposed to his theory, but has omitted to notice the following ten,—*Pecten Islandicus*, *Margarita alabastrium*, *Astarte arctica*, *A. incrassata*, *Fusus antiquus*, *Triton nodosum*, *Lucina spinifera*, *Murex brandaris*, *Cypræa lurida*, and *C. spurca*.

In consequence of Mr. Jeffreys's remarks (some of which surprised me not a little), I have carefully reconsidered the whole of my statement, comparing specimens together where necessary, and now give the result as follows :—

1. *Corbula nucleus*, from North Drontheim. Mr. Jeffreys's remark would be equally applicable to specimens obtained in the Mediterranean or other southern localities. It is just possible that Mr. Jeffreys may not be aware that North Drontheim is an extensive province of Norway, with a very great range of sea-coast, and that he may have supposed my specimens to have been obtained in one particular locality.

2. *Trochus lineatus*. It is probable that Mr. Jeffreys has not seen my specimens from the neighbourhood of Vigo (obtained in 1857 by Mr. Woodward and myself), or he would not have coupled them with those from Mogador. I wish, however, to correct my statement respecting this species, and only to say that the specimens from the neighbourhood mentioned exceed in size the ordinary specimens on the British coasts.

3. *Astarte sulcata* I have not found to vary in size more than most other species of Mollusca,—much less than its congener *A. compressa*. I adhere to my statement that it diminishes in size when traced northward from the Scottish coasts to those of Finmark.

4. *Astarte triangularis*. Mr. Jeffreys believes that he can match, in point of size, specimens from North Britain with any of mine from Gibraltar Bay, which is of course possible; but the fact still remains unimpeached that *all* my specimens from Gibraltar (and they are very few) exceed in size the largest I have obtained in Britain. I have procured it off Scilly, as well as from many localities of Scotland, and at various depths, varying from three to sixty fathoms.

5. *Crenella marmorata*. It is possible that Mr. Jeffreys may have been misinformed respecting the large specimens he saw being from Greenland, as I find no mention of it in Möller's or Mörch's catalogues of the shells of that country; nor was it among the species dredged there by Mr. Barrett. Indeed it has never been met with, to my knowledge, in the Arctic seas.

6. *Crenella rhombea*. The ordinary run of specimens from the Canary Islands is considerably larger than any I have seen obtained in Britain or the Channel Islands. The comparison

has not yet been made between the largest in Mr. Jeffreys's possession and in mine.

7. *Nucula nucleus*. My specimens from Norway are of the ordinary British form, and are no more a small variety than are those from Spain and Portugal.

8. *Nucula decussata*. I cannot but think that Mr. Jeffreys must be labouring under a mistake; otherwise his specimen from Oban must be very extraordinary, and quite exceptional in its dimensions. Of the few specimens I obtained off Malaga, the largest measures about seven-eighths of an inch in its greatest diameter; the largest of many specimens obtained off Oban at various times is smaller by about an eighth of an inch.

9. *Cardium rusticum*. All the British specimens I have seen of this species are from South Devon. Upon one occasion, after an equinoctial spring-tide and gale of wind, I saw such quantities of this species, in company with *C. aculeatum*, thrown upon the shore of Torbay in a living state, that they might have been collected by the bushel. The specimens of both species, but more particularly *C. rusticum*, are much smaller there than at Gibraltar and in the West Mediterranean.

10. *Cardium papillosum* I have not met with north of Vigo, where the specimens are smaller than in the Mediterranean: size of latter five-eighths of an inch, or rather more. I should like to know the exact dimension of Dr. Lukis's specimen—if, indeed, the species is identical; though, in any case, a single specimen could not give much weight to an argument.

11. *Cardium pygmæum* I have taken in the south of Ireland (Cork Harbour), as well as various British localities, but in none so large as the average of those in Vigo Bay. It should be borne in mind that the question is regarding the size generally attained by species in the different latitudes.

12. *Venus verrucosa*. Mr. Jeffreys would appear to have seen only small specimens from southern localities. My British specimens were from Pwllheli, where, as the most northern limit of the species, according to Mr. Jeffreys's theory, the largest specimens ought to have been found. The Rev. Mr. Norman, with a view to improve my specimens, very kindly sent me others, which I may presume to be at least equal to the average in size; but these, as well as all the other British specimens I have seen, are decidedly smaller than the average of adult specimens from Gibraltar, and of those which are taken abundantly from Minorca to be sold as food in the market of Algiers.

13. *Mactra stultorum*. It is very possible that Mr. Jeffreys may be correct in his suspicion that the specimens alluded to by me may belong to *M. inflata* of Bronn, though I much doubt their being specifically distinct.

14. *Littorina rudis*. I do not question the correctness of Mr. Jeffreys's remarks, but do not see that they in any way affect my statement.

15. *Scalaria communis*. Notwithstanding that Mr. Jeffreys has not seen large Mediterranean specimens, it is nevertheless a fact that they attain a greater size in Gibraltar than in England. The largest of my Gibraltar specimens exceeds in size the largest of my English, and the average of my Gibraltar the average of my English specimens.

16. *Bulla hydatis*. I refer to the shell so called by Forbes and Hanley (whether correctly or incorrectly named is not to the purpose), which is both abundant and large at Vigo Bay.

17. *Murex erinaceus*. I may have given small specimens to the British Museum. I repeat that the species attains larger dimensions upon the coasts of Spain than on those of Britain, both as regards extreme and average magnitude.

18. *Cerithium reticulatum*. I will not enter upon the question of varieties. I wish, however, to amend my remark upon this species, and to substitute—that the Spanish specimens are fully equal in size to the British, and larger than those of North Drontheim.

19. *Triforis perversa*. I do not see how Mr. Jeffreys's remark upon the last species applies to this. I repeat that the specimens of it attain much greater size in the Mediterranean than on the British coasts.

20. *Aclis supranitida*. I acknowledge that I was mistaken in my remark regarding this species. Upon comparing my only Madeiran specimen with British, I find it to be about equal, but not superior, in size.

Mr. Jeffreys's information respecting *Tellina balaustina* is only important with reference to the distribution of the species. The result of my observation is limited to the fact that specimens diminish in size but increase in frequency from the Atlantic eastward in the Mediterranean.

Of *Teredo*, I am unacquainted with the species. Montagu, who probably confounded more than one species under the name of *Teredo navalis*, speaking of it, says, "This part (the tube) is rarely above three-quarters of an inch in diameter at the larger end, and a foot in length in our climate, but exceeds that in the more southern parts, from whence it was brought into our harbours, to the great destruction of our ships—as Linnæus justly observes, *calamitas navium*." It is certain that ships are much more exposed to the ravages of these animals when in southern latitudes; and it is evident that before the custom prevailed of protecting the bottoms of ships with copper, the transportation of species from their original habitat to the remotest regions was inevitable.

Mr. Jeffreys, choosing his own ground, and taking the British Mollusca as a standard of comparison, names certain species "in particular" as appearing to attain a larger size in our own seas than in the south of Europe. I must say that he has not been fortunate in the selection. *Donax politus* may possibly acquire larger dimensions in Britain than in the Mediterranean, though, upon comparing my specimens, I find but little difference between them. *Rissoa striatula* is very rare: I have never obtained an adult specimen in the south, and have no reason to believe that it does not attain as large size in Cadiz as in England. *Avicula Tarentina* I have never myself obtained in the British seas, and rarely in the Mediterranean. Forbes and Hanley mention that the largest specimen they have seen measures nearly four inches in length; my largest of very few specimens from Malaga measures barely three and a half inches. *Galeomma Turtoni* is a rare species, of which I have taken but very few specimens, principally in the north of Spain; but it so happens that the individual I have found furthest to the south (in the Great Harbour of Syracuse) is larger than any I have seen from the Channel Islands or elsewhere. Of *Murex corallinus* I have twice received specimens from the Channel Islands, through the favour of Mr. Jeffreys; but they are inferior in size to the average of those from the Bay of Gibraltar. *Trochus striatus* attains something like double the size in the Mediterranean than it does in the British seas; and my specimens of *Lachesis minima*, both from the north of Spain and the Mediterranean, are about five times as large as the British—more than double the length, and thick in proportion. Forbes and Hanley state the ordinary length to be one-fifth of an inch, which exceeds the size of my British specimens; while the Spanish are seven-sixteenths of an inch in length.

It would be foreign to my object to argue in favour of the geographical zones into which that part of the ocean which washes the shores of Europe has been divided by naturalists; but it strikes me that he must be a bold man who would assert, for instance, that the Arctic Sea has no existence in fact or in nature, or that there are not species of Mollusca to which it affords the natural habitat, and which degenerate or cease to exist in warmer regions. The Temperate zone, occupying so much greater range of latitude in our hemisphere than either the Arctic or the Torrid zones, it has been found convenient to divide upon the coasts of Europe into north-temperate or Boreal, mid-temperate or Celtic, and south-temperate or Lusitanian; and I conceive it would not be difficult to show that each of these affords the climate and conditions best adapted to peculiar forms and species of Mollusca.

Though I do not pretend to compete with Mr. Jeffreys as a collector of British shells, I have possessed greater opportunities of collecting native species than of the shells of foreign countries. Having devoted more time and labour to our native species, my cabinet is proportionately better furnished with them; consequently I cannot agree with Mr. Jeffreys as to the cause of the difference between us, and the error into which one of us has fallen, but concur with him in the hope that further experience will show which of our conclusions is correct.

Having now gone over Mr. Jeffreys's remarks, paragraph by paragraph, it remains for me to add that I have stated nothing as fact which I am not prepared to prove by reference to specimens in my own cabinet. I mentioned in my last communication, and I repeat it now, that nothing could be easier to me than to multiply instances in support of my views, but conceive that my doing so now would be a waste of time, as I have cited sufficient for the purpose.

In conclusion, I beg to remark that, in order to sustain the theory propounded and advocated by Mr. Jeffreys, it should be proved to hold good both within and without the Mediterranean: it should be shown that the Mollusca of the coasts of Piedmont (situated only six or seven degrees south of the southernmost shores of England, and one or two degrees north of Vigo) are larger in size than the Mollusca of the Mediterranean generally; they should be as much larger than the specimens of Gibraltar and Malta as they are smaller than the British. I would also suggest that the British seas extend through above ten degrees of latitude, and have been more thoroughly explored than any other part of the world of similar extent; and if Mr. Jeffreys's proposition held good within their area, it could hardly have escaped the notice of the numerous collectors and naturalists who have made our coasts the scene of their labours.

BIBLIOGRAPHICAL NOTICES.

Handbook of the British Flora. By G. BENTHAM, F.L.S.
London: Lovell Reeve. 1858.

A FEW years since, the *Flora* by Hooker and Arnott was the textbook and rallying point of that "school" of English botanists who professed to remain satisfied with a moderate subdivision of species, and were disposed to defer accepting, until tested by cultivation, the so-called "sub-species," which have been generally adopted as species upon the European continent, and which had to some extent been recommended to the British student in Babington's Manual.

The followers of Hooker and Arnott let us call by way of illus-