

[(1882), *Annals and Magazine of Natural History*, (5), 9, 53: 397 – 399 (Londres) ⁽¹⁾]

ON A CASE OF COMPLETE ABORTION OF THE REPRODUCTIVE ORGANS OF *VITRINA*.

In the month of February 1881 I collected ten specimens of a species of *Vitrina* upon bunches of heather on the mountains of Ladeira do Ledo, near 7 Cidades, in the island of St. Michael's, one of the Azores. These *Vitrinae* were readily distinguished by their more vivid colour from the species which I had previously found in the island, and which are recorded by M. Morelet as occurring there. The shell resembles in its greenish tint, its dimensions, and its generally globular form that of *V. mollis*, which Morelet and Drouët found in Terceira only.

I lost no time in dissecting one of the specimens, being anxious to compare the organs of generation with those of other species; but as soon as I had open the neck of the animal I was greatly surprised to find that the organs which I looked for were altogether absent. My curiosity being excited, I dissected in succession seven specimens; but in none of these could I find the least trace of reproductive organs.

The ten examples agreed in colour, outward appearance, and internal structure. Differences of size were observed; and in some the shells were less inflated than in others. From the size of the shell I infer that the individuals were of about the same age; and as they were all found close together, they probably belonged to one brood.

It seems to me improbable that ten individuals, the offspring of parents belonging to one and the same species, would offer so remarkable and regular an anomaly; and I am therefore inclined to think that these *Vitrinae* are hybrids. Possibly the conditions of life in the Azores may be favourable to hybridity among terrestrial gastropods. M. Morelet mentions a *Bulimus* intermediate between *B. pruninus* and *B. vulgaris*, which was found in St. Michael's; and he adds, «on ne trouve d'autre explication à cette singularité qu'une alliance adultérine entre les deux mollusques» ⁽²⁾. M. Drouët cites the shell of a mollusc, found at Santa Maria, living side by side with *Zonites volutela* and *Z. miguelinus*, which agreed with the former in colour and with the latter in shape ⁽³⁾. I have not been able to procure examples of either of these molluscs for anatomical examination. Probably they were sterile hybrids and have left no descendants.

The mandible and lingual ribbon of the assexual *Vitrina* agree perfectly with those of *V. brumalis*, the only species that I have been able to study. Before describing the shell, I submit a Table of all the Azorean *Vitrinae*, according to shell-characters:

1 – Right margin of peristome reflected.....	<i>finitima</i>
Right margin of peristome not reflected.....	2
2 – Last spire angulated.....	<i>angulosa</i>
Last spire not angulated.....	3
3 – A columella.....	4
No columella.....	5
4 – Shell helicoids, globular.....	<i>pelagica</i>
Shell slightly globular; the last spire elongated.....	<i>laxata</i>
5 – Shell globular, resembling a young <i>Helix</i>	<i>mollis</i>
Shell depressed.....	6

⁽¹⁾ Translated and communicated by Prof. L. C. Miall.

⁽²⁾ *Notice sur l'hist. Nat. des Açores*, pp. 186,187 (1860).

⁽³⁾ *Éléments de faune açoréenne* : p.426 (1801).

- 6 – Three spires in the shell, *ultimus magnus*..... *brumalis*
 Two and a half spires in the shell, *ultimus permagnus*..... *brevispira*

The asexual *Vitinae* belong to sections 5 and 6, and are nearly allied to *mollis*, *brumalis*, and *brevispira*. The three species recorded from St. Michael's are *laxata*, *brumalis*, and *brevispira*; and we should therefore expect that the asexual molluscs, if really hybrids, would be the offspring of *brumalis* and *brevispira*. At first sight, however, they resemble most closely neither of these, but *mollis*, a species hitherto unknown in the island. It is, of course, possible that *mollis* occurs there but has been overlooked. I have not been able to find any sexual *Vitina* in the neighbourhood of Ledo, except *brumalis*.

Quite recently I have revisited the spot expressly to search for more neuters; but the search was unproductive.

Ponta Delgada, July 15, 1881

I have dissected two of the three *Vitinae* sent over by Mr. Furtado, without finding any trace of reproductive organs. The parts are usually very voluminous in snails, and it is not easy to make a mistake as to their presence in a normally developed animal. In order to investigate the point the point more carefully, the third specimen was cut into transparent slices and compared microscopically with similar sections of *Helix aspersa*; but no reproductive organs were found. The multitude of details revealed by the microscope makes it difficult to speak confidently as to the complete absence of any structure which is not recognized; and I really upon the simple dissections more fully than upon the microscopic examination.

Abortion of the reproductive organs has been observed in animals infested by parasites, *e. g.* in stylotized bees, in *Lymnaea stagnalis* when attacked by trematodes, and in female hermit-crabs attacked by *Rhizocephala*. The complete aborting of the parts in the remarkable case described by Mr. Furtado distinguishes it at once from the many cases of real or supposed functional defect met with in hybrids. – L. C. M.