

separate from the rest and put six of them (those which I could see seemed to have embryonic shells within) in separate vials and numbered the animals and their shells to correspond. The rest I preserved en masse.

Unfortunately I did not keep the animals of the banded *P. dubia*, so I cannot send you any of them. It might be well to note here that the *A. l. meinecke* seemed to be much darker, even to a purplish appearance in some cases, when alive and after drowning, but appeared very much lighter immediately after the animal was pulled, due no doubt to the color of the animal, as the shells are very thin.

NOTES ON CRASPEDOPOMA LUCIDUM, LOWE AND OTHER MADEIRA
SNAILS.

BY T. D. A. COCKERELL.

In the Madeira Islands there is only one genus of Cyclostomoid shells, *Craspedopoma*. It is represented by four species, all described by Lowe, living to-day only on the main island of Madeira. One of them, *C. lucidum* Lowe, is common to the fossil beds east of Canical, Madeira, and is said to occur fossil on the Southern Desert Island and on Porto Santo. Wollaston is very explicit about the Porto Santo records, citing three localities, and remarking that the specimens are rather small. I could not find any trace of it there, and Mr. A. C. de Noronha and the Rev. Drummond Paterson, who have collected much more extensively, have also failed to find it. Near Canical, in Madeira, it occurs in the well-known beds along with *Plebecula bowditchiana* (Fér.), *Geomitra delphinula* (Lowe) and many other shells. These shells are cited by Wollaston as "subfossil", but they are properly regarded as fossils, and by all available criteria should be Pleistocene, perhaps Lower Pleistocene. Several of the forms are extinct, and the representatives of some of the living species are appreciably different from their descendants. Thus the common *Leptaxis undata* (Lowe), found in quantity fossil, mixed with *P. bowditchiana*, is larger than ordinary living specimens. It may be regarded as a distinct

race (*grandior*, n. var.), max. diam. 29–30.5 mm. In this peculiarity the fossil *L. undata* falls in line with other species, thus *P. bowditchiana* is a sort of large edition of the common living *P. punctulata* (Sby.) of Porto Santo.

At the Mount Church, above Funchal, I found *C. lucidum* alive, and made notes on the animal. The tentacles are dark grey, with black basal collar; eyes prominent, black; head and foot pale reddish ochreous, suffused with dusky; front of head, below tentacles, with about six transverse dusky lines; an elongate dark patch on each side above mouth; a large suffused rosy area behind each eye, visible when the light shines through the animal; sole pale ochreous, not divided, but foot emarginate posteriorly. The Mount is about 1900 ft. above sea level. At higher altitudes in Madeira snails seem to be very scarce. Thus around the Pico do Serrado, at about 3000 ft., the only snail I could find was *Geomitra calva* (Lowe), though I obtained three species of slugs. These slugs were *Milax gagates*, the typical jet black form, *Arion hortensis* (new to Madeira) and *Limax maximus*. At lower altitudes the *M. gagates* are plumbeous. (var. *plumbea* Moquin-Tandon). Many years ago I described *M. gagates* var. *maderensis*, a dark brown variety from Madeira. It is now clear that it is only a color-variation, not in any sense a local race. Everything indicates that all the Madeira slugs have been introduced, though some of them have been in the island a long while. I found *Arion hortensis* also at Madeira, and on the Portella Pass another addition to the fauna, *Agriolimax laevis*.

NEW PLEISTOCENE MOLLUSKS FROM CALIFORNIA.

BY T. S. OLDROYD.

ANACHIS MINUTA, n. sp.

Shell small, thick, nuclear whorls smooth; preceding whorls four in number are cancellated by strong straight longitudinal ribs and nearly equally strong revolving ridges, three on each whorl. Whorls slightly convex, sutures broad and sunken; cancellations equally strong, on the whole length of the shell.



Cockerell, Theodore D. A. 1921. "Notes on Craspedopoma lucidum, Lowe and other Madeira snails." *The Nautilus* 34, 113–114.

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