

columella *very heavy* and *twisted*, generally white; parietal callus dark brown.

Holotype: Height 63.5 mm., diam. 29 mm., whorls 7. ANSP. No. 173342.

Paratype: Height 57 mm., diam. 27 mm., whorls $6\frac{1}{2}$. ANSP. No. 173343.

Paratypes in the Bales and McGinty collections.

(*To be continued*)

A SNAIL "TAXI"

BY GORDON K. MACMILLAN

Carnegie Museum

The larvae of certain Neuropterous insects of the family *Hemeroptidae* have the peculiar habit of covering themselves with a protective mat of empty insect skins, bits of bark, fibers of plant and animal origin, pieces of lichens, and spiders' webs. The larvae are furnished at the sides with projections, which serve as pedicles to elongate divergent hairs, and these help to keep the mass in place on the back of the insect. Some fine threads are distributed through this curious mantle and serve to keep it from disintegrating. These threads may be fragments of spiders' webs or threads spun by the insect themselves. The larvae either place small bits of these materials upon their backs with the jaws, or they crawl under them and then shift them in place by body movements assisted by the jaws.

During my four months' collecting trip this past summer throughout West Virginia I came upon six of these snail "taxis" under layers of leaves or between piles of fallen bark. Not only were the mantles constructed of the materials mentioned above but they also had numerous of the smaller snails attached to them. At first it appeared that the shells were just massed together but when I went to pick them up the shell mass began to move.

The snails found on the mantles of these Neuropterous larvae were as follows:—

Helicodiscus parallelus (Say)

Gastrocopta pentodon (Say)

Vertigo gouldii (A. Binney)

Punctum pygmaeum minutissimum (Lea)

Paravitrea multidentata (A. Binney)
Striatura milium (Morse)
Striatura ferrea (Morse)
Hawaiiia minuscula (A. Binney)
Zonitoides arboreus (Say)
Zonitoides nitidus (Mueller)
Retinella burringtoni (Pilsbry)
Retinella rhoadsi (Pilsbry)

These shells and larvae were found in woods near Weston, Lewis Co.; French Creek, Upshur Co.; and Parsons, Tucker Co., West Virginia. (See also, Archer, NAUTILUS 51: 105 Ed.)

GARDEN MOLLUSCA IN EASTERN NORTH AMERICA

BY A. F. ARCHER

In the paper entitled "The Habitats of Land Mollusca in Britain," A. E. Boycott, 1934 (Journal of Ecology, Vol. 22, p. 22) mentions the lack of evidence in the literature that there are mollusks in gardens in the United States outside of imported slugs and snails. He points out that the 100 to 300 years that have elapsed since the area was settled by European man might conceivably have been too short a time for any of the native species to have adapted themselves to gardens and houses. The same situation is said to hold true likewise for Australia, New Zealand, and South Africa, where only imported species are recorded as occurring in gardens.

My own field notes and observations indicate that in the case of eastern North America, at least, there is a fairly considerable number of species occurring in gardens, and that they are by no means all imported species. A number of the native species are as abundant in gardens and around houses as they are in any type of habitat that they occupy. This is as true of the areas that have been settled less than 100 years as it is of those of longer occupation. American gardens vary in nature and quality. Vegetable gardens are frequently disturbed by the plow from year to year; when fallow they may harbor a considerable mollusk population. Flower gardens may be frequently and intensely disturbed by weeding and hoeing, or they may be left more or less to them-



Macmillan, G. K. 1939. "A snail □taxi□" *The Nautilus* 52, 94–95.

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