

## A NEW SIERRAN PULMONATE OF THE GENUS *MONADENIA*

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Any new snail belonging to so small and taxonomically isolated a genus as *Monadenia* is bound to be noteworthy and the one now to be described constitutes no exception to the rule. Although the lack of mature living examples has thus far precluded any investigation of the anatomy, the shell characters clearly indicate its generic affinity, while it may be quite as definitely placed in the subgenus *Corynadenia* both by reason of its evident close relationship to species of known systematic position and the geographic area which it occupies.

### ***Monadenia* (*Corynadenia*) *tuolumneana* new species**

(Plate 6, Figs. 1-3)

**DESCRIPTION:** Shell of moderate size, thin, strongly depressed, carinate, the carina moderately acute yet not pinched, and persistent to the groove behind the peristome. Spire barely elevated. Whorls *ca.* 5½, weakly convex above the suture, more tumid and more capacious below than above the periphery at all stages seen, the last whorl very slightly descending at the aperture; suture distinct, almost channeled; base moderately tumid. Umbilicus moderate, open, steep-walled, permeable to apex, its diameter contained about 6.3 to 7 times in the major diameter of the shell. Aperture somewhat flattened, transversely ovate; outer lip simple and rather thin above, thicker below the periphery and strongly everted there; columellar flare short and little emphasized, the umbilical encroachment slight.

Embryonic shell with a close, quite regularly disposed, minute, file-like decurrent papillation of spirally lengthened granules, all this giving way on the later whorls to a similar but rougher and coarser papillation of rounded but on parts of the base sometimes hyphen-shaped granules. Growth-lines irregular and rather coarse, especially on the last whorl, on the base of which they often almost attain the strength of low ribs as they sometimes similarly do on portions of the upper surface as well. Periostracal surface rather lustrous, sometimes almost silky. Spire with an obscure undertone of Avellaneous, heavily shaded Sepia, and

with a rather sharply marked zone of Fawn Color to Wood Brown on the anterior portion of the last whorl, bordered by narrower zones of Avellaneous, the carina marked by a narrow band of Clove Brown; base near Army Brown.

MEASUREMENTS of holotype: alt. 8.3, max. diam. 22.0, min. diam. 18.1, diam. umbilicus 3.2 mm.; of largest paratype: alt. 9.6, max. diam. 23.4, min. diam. 20.0, diam. umbilicus 3.7 mm.

HOLOTYPE: Cat. No. 15,602 Berry Collection. PARATYPES: Cat. No. 15,601 Berry Collection; others to be deposited in the United States National Museum and the private collections of Allyn G. Smith, W. O. Gregg, and E. P. Chace.

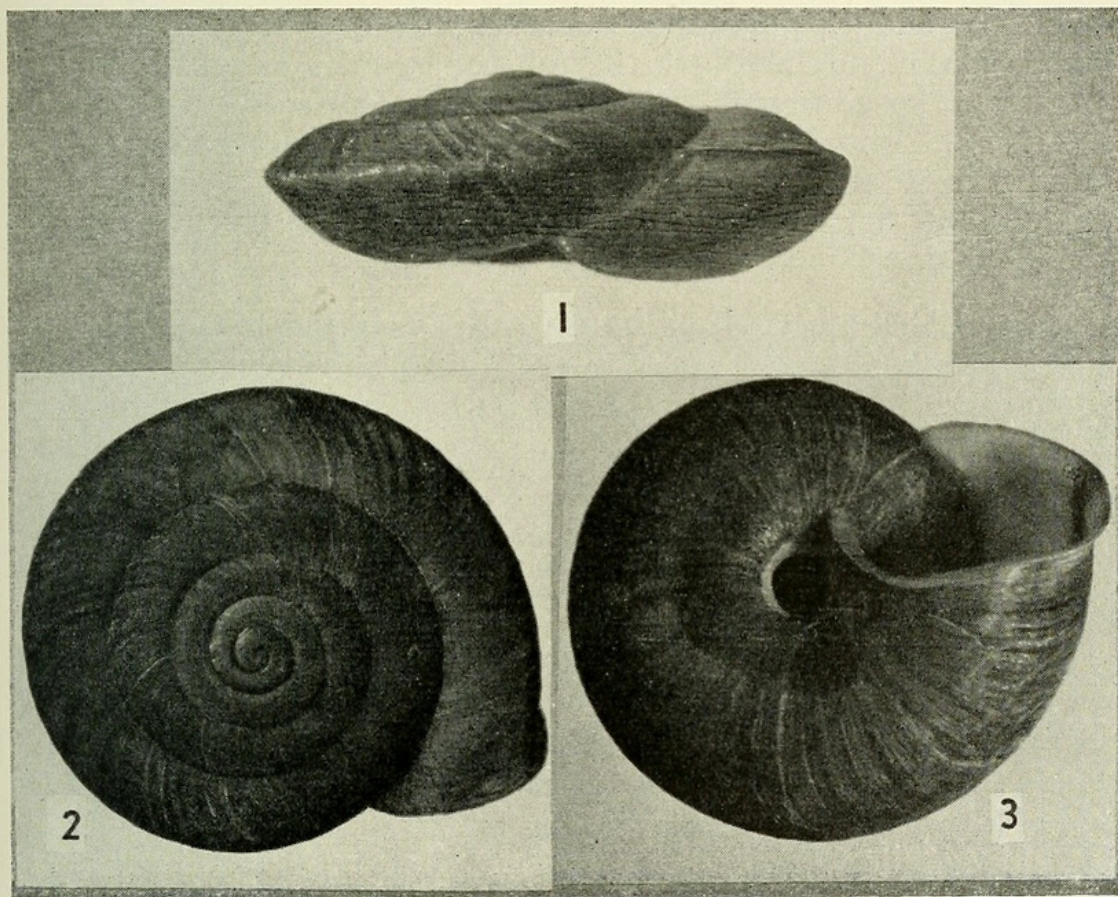


PLATE 6

Figs. 1-3. *Monadenia* (*Corynadenia*) *tuolumneana* n.sp. Front, upper, and basal views of holotype from near Crystal Cave, Tuolumne Co., California; x ca. 2½.

TYPE-LOCALITY: Among limestone rocks at top of cliff above Crystal Cave, Baker Ranch, near Tuolumne City, Tuolumne County, California; Mary E. Long *et al.*, 10 May 1949.<sup>1</sup>

COMMENTARY: Although no mature living examples have yet been obtained, several of the shells are sufficiently fresh to show that the species they represent is a member of the *hillebrandi-circumcarinata* group of the genus. The shells are more depressed, more finely and closely granulose, and much more strongly carinate than those of *M. hillebrandi*. A closer relative may well be the still incompletely known *M. yosemitensis* Lowe, which has somewhat similar periostracal ornamentation, but here again the present species differs in its greater compression and carination as well as in its tighter trimmer coiling, narrower, more well-like umbilicus, and the much finer embryonic sculpture. In its extreme lenticulation and incipient ribbing the species suggests an approach to the aberrant *M. circumcarinata* (Stearns), which only recently, after 10, these many years, has been rediscovered in the same general area (Hanna & Smith, 1954); but it is only an approach, and the two in these as well as other respects are sufficiently distinct.

I am indebted to Mr. Ellis Rich of the Department of Visual Education, College of Medical Evangelists, Loma Linda, Calif., for the accompanying photographs.

#### REFERENCES

Hanna, G. D., and Smith, A. G.

1954. Rediscovery of two Californian land snails. *Nautilus*, 67 (3): 69-76, pl. 8, figs. 5-7, Jan. (Feb.) 1954.

Stearns, R. E. C.

1879. Description of a new species or variety of land snail from California. *Annals New York Academy Sciences*, 1: 316-317, 3 figs., Nov. 1879.

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<sup>1</sup> Miss Long writes that the shells were "collected by overturning and prying up limestone rocks . . . generally in the near horizontal ledges and crevices . . . with dirt or roots of ferns, etc. on the lower side."



1955. "A new Sierran pulmonate of the genus *Monadenia*." *Bulletin of the Southern California Academy of Sciences* 54, 14–16.

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