

classified as follows: Walter (1970, Ann Rept. Amer. Malac. Union: 47-51) establishes the use of the generic name *Micromenetus*.

***Micromenetus dilatatus avus* (Pilsbry)**

*Planorbis alabamensis avus* Pilsbry, 1905; *The Nautilus* 19:34. (Type locality: Pliocene, Caloosahatchee Formation, near Clewiston, Florida).

*Promenetus (Micromenetus) alabamensis avus* (Pilsbry), Baker, 1945; Molluscan Family Planorbidae, Univ. Illinois Press: 190; pl. 121, figs. 40, 41; pl. 123, fig. 1; pl. 140, fig. 25.

*Promenetus minutus* Taylor, 1954; *Revista Soc. Malac. "Carlos de La Torre"* 9:37-38. (Type locality: Allee Creek, Barro Colorado Island, Panama).

*M. d. avus* is generally distributed throughout

the Florida peninsula and intergrades with *M. d. dilatatus* (Gould) in northern Florida. It is figured and discussed in greater detail in a forthcoming manual on Florida freshwater gastropods. *M. alabamensis* is a different species. West Indian records for *M. d. avus* are: HAITI: Dept. du Sud, creek 14 km N, Cavaillon, 350 m. alt. (UF 32419), irrigation ditch, Les Cayes (UF 34995). JAMAICA: St. Elizabeth Parrish, marshy stream 1.6 mi. SE Snipe (UF 34995). Undoubtedly the species is more widely distributed in the Greater Antilles. It is seldom collected because of its small size (less than 2 mm) and its secretive habit of living under stones and vegetative debris.

A NEW *HUMBOLDTIANA* (PULMONATA: HELMINTHOGLYPTIDAE)  
FROM NORTHWESTERN COAHUILA, MEXICO

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ABSTRACT

*A new species of helminthoglyptid land snail, Humboldtiana malenae, is described from mountains of northwestern Coahuila, Mexico. Its relationships with other members of the genus in the area are discussed.*

Southward from the eastern side of Big Bend National Park, in Texas; extends a complex but generally linear series of mountain ranges into Coahuila, Mexico. These include, north to south, the Sierra del Carmen, the Sierra Jardin and the Sierra Maderas del Carmen. Between this latter range and the Sierra de la Encantada, which extends on to the south and southeast is the lower Mesa de los Fresnos. At the southern end of this mesa is a pass across the mountains called La Cuesta de Malena or La Cuesta de Plomo. Standing at the pass, one can observe the arid basins and ranges of the Chihuahuan Desert to the west and, to the east, the more mesic

mesquite-grassland of Coahuila, where copious rains had fallen in the days before a visit made here in May 1981. The rains had drenched the area of the pass as well and stimulated activity in the *Humboldtiana* reported here. Vegetation comprised grasses and a shrubby matorral. Snails were associated with accumulations of igneous rocks.

I am grateful to Mr. David H. Riskind and Mr. Robert Burleson, who organized and conducted the field excursion during which we visited La Cuesta de Malena, and especially to Mr. Burleson, who provided transportation. Mr. William Murray helped in making collections.

*Humboldtiana malenae* new species

Figs. 1-4

*Diagnosis:* A relatively small *Humboldtiana* with narrow brown bands on shell, the lowermost band poorly developed; younger whorls granulose; most of surface of the first whorl smooth; and with mucus gland ring situated closely above the dart sacs.

*Description of Holotype:* Shell subglobose, 24.9 mm in diameter and 21.1 mm high; spire rising steeply, forming angle of  $105^\circ$ ; 4.2 whorls, with body whorl rounded peripherally and descending; aperture sub-rounded, 13.8 mm wide and 15.0 mm high, inclined at angle of  $25^\circ$  to vertical; columellar peristome reflected and covering most of umbilicus, leaving only a slit; outer lip thin; most of first whorl smooth but with low, fine, slightly sinuous growth lines appearing at 0.9 whorl, these bearing minute granules, widely separated; both growth lines and granules gradually becoming stronger on

younger whorls, the former developing into light yellow growth ridges that alternate irregularly with lower, brownish areas and with granules becoming larger, light yellow in color, and more elongate on dorsal surface, occurring both on and between ridges; granules less developed ventrally; two pale brown bands arise at 1.6-1.8 whorls, one centrally and one peripherally located on the upper surface of the whorl, these becoming darker in color and better defined on younger whorls with both located above the periphery of the body whorl; in some places traces of a third brown band below the periphery of the body whorl are barely discernible. There are several irregularities on the shell surface caused by injury and shell regeneration.

*Variation in shells of paratypes:* The sub-peripheral brown band, which is almost indiscernible on the shell of the holotype, is moderately well developed on some paratypes. The relationship of width to height of shell is vari-



FIGS. 1-3. 1 and 2, Apertural and dorsal views of holotype of *Humboldtiana malenae* new species (24.9 mm diameter). 3, Genitalia of a paratype of *H. malenae* (dimensions listed first, of four, in text under heading "Genitalia").

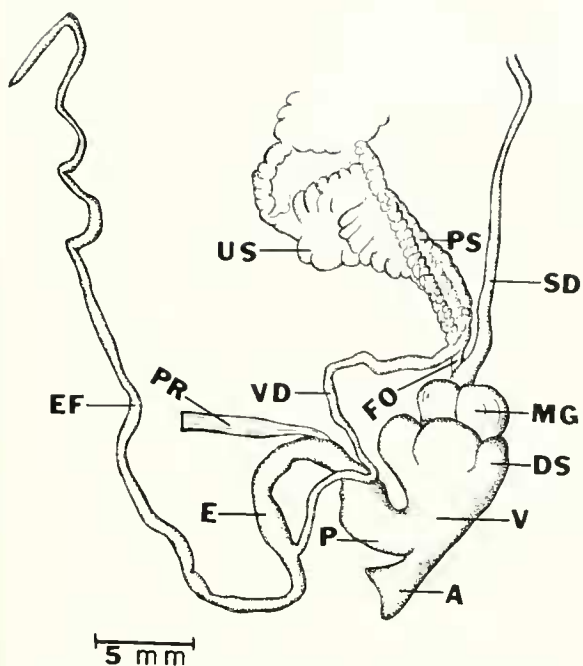


FIG. 4. Lower region of genitalia of same specimen of *Humboldtiana malenae* new species as in Fig. 3. A-atrium, DS-dart sac, E-epiphallus, EF-epiphallic flagellum, FO-free oviduct, MG-mucus gland ring, P-penis, PR-penial retractor muscle, PS-prostatic part of spermoviduct, SD-spermathecal duct, US-uterine part of spermoviduct, V-unaltered part of vagina, VD-vas deferens.

able. Thus, the ratio diameter/height for 10 paratypes ranges from 0.99 to 1.19 with mean of 1.08 and standard deviation of 0.059. For these paratypes, the following dimensions (in mm) and counts were obtained (mean is before, range within, and standard deviation after parenthesis): shell diameter, 23.9 (21.5–27.5) 1.81; shell height, 22.3 (20.1–24.1) 1.3; apertural width, 13.8 (12.5–15.8) 1.04; apertural height, 15.5 (14.0–16.7) 0.81; number of whorls, 4.21 (3.8–4.45) 0.19.

**Genitalia:** (See Figs. 3 and 4). The penis is relatively short for the genus (Solem, 1974: Table 1). Internally, a verge occupies 0.4 to 0.65 of the length of the penis in four specimens dissected. Internally, the verge is much like that reported by Solem (1974:361) for *Humboldtiana fullingtoni* Cheatum, 1972, with an accessory, inner membrane, covering four pilasters that continue downward from the epiphallus. These

pilasters are deeply corrugated transversely and continue to the lower end of the verge where they terminate in four finger-like projections. As in *H. fullingtoni* also, a circular pilaster surrounds the lower part of the verge on the inner wall of the penis in two specimens. Below this circular pilaster arise 5 or 6 longitudinal pilasters, which extend on to the atrium. The epiphallus bears a well developed flagellum. The lowermost, unaltered vagina is short. The mucus gland ring is very close to the dart sacs and both are large features. In some specimens (as in Fig. 4) there is no externally discernible separation between mucus glands and dart sacs, while in others a separation not exceeding 0.5 mm is observed. The free oviduct above the mucus glands is short. The spermathecal duct bears a relatively long appendix shortly below its terminal bulb. Measurements (in mm) of genitalia for four specimens dissected (from shells with diameters, respectively, of 26.3, 23.8, 22.5 and 22.5 mm) are: length of penis from penial retractor insertion to atrium, 6.5, 7.0, 5.5, 7.9; length of vas deferens, 19.0, 18.5, 11.5, 16.3; length of epiphallic flagellum, 49.3, 53.7, 42.4, 48.4; length of unaltered vagina below dart sacs, 2.2, 2.2, 1.4, 2.4; height of largest dart sac, 3.0, 2.8, 2.2, 2.4; height of smallest dart sac, 2.3, 2.1, 1.4, 1.5; height of mucus glands, 2.7, 2.1, 2.0, 2.1; length of spermathecal duct plus terminal bulb, 63.5, 59.8, 47.5, 68.6; length of spermathecal appendix, 9.8, 9.7, 7.9, 8.6; length of free oviduct, 2.7, 3.5, 1.3, 3.2. Clearly the relationship between shell size and size of genitalia is not always closely correlated. Thus, the two shells with diameter of 22.5 mm vary considerably in dimensions of the genitalia.

**Types:** Holotype: National Museum of Natural History, USNM 784,768. Paratypes: USNM 784,769; Dallas Museum of Natural History 5,366; University of Arizona 19,045; University of Texas at El Paso 4647 and 8786.

**Type and only known locality:** MEXICO, Coahuila; 28°43'55"N, 102°30'39"W; in boundary area between municipios of Ocampo and Muzquiz; on Coahuila state highway 53, 6.2 km slightly N of E from Tres Caminos (village); above head of north branch of Canada la Virgen

(draining west); at summit of pass (about 1,625 m in elevation) variously termed La Cuesta, La Cuesta de Malena and La Cuesta de Plomo, where unimproved road diverges northerly from Highway 53 towards the Mesa de los Fresnos and 0.2 km NW of junction with road leading to mining area to south. The above based on the CETENAL 1:50,000 topographic quadrangle for Sierra la Encantada, which, however, shows La Cuesta de Malena 2.5 km east of the type locality. Holotype and paratypes were collected by the author on 7 May 1981 and additional paratypes by David H. Riskind on 25 May 1975.

*Etymology:* (*malenae*=of Malena) The place name Malena used in the area derives from the given name (contraction of Maria Elena) of a restaurateur, who formerly maintained a cafe in the area (David H. Riskind, pers. comm.).

*Comparisons:* Geographically, *Humboldtiana malenae* occurs between the ranges of *Humboldtiana taylori* Drake, 1951, to the north in the Sierra Maderas del Carmen, and of *Humboldtiana plana* Metcalf and Riskind, 1976, to the southeast in the Sierra Santa Rosa (Metcalf and Riskind, 1976, 1979). Shells of all 3 species are granulose but those of *H. malenae* are less so than in the other 2 species. The subglobose, elevated shells of *H. malenae* differ trenchantly from the low, depressed shells of *H. plana*. The internal anatomy of *H. plana* is not known. Mature shells of *H. taylori* reach well over 30 mm in both diameter and height, whereas specimens of *H. malenae* observed do not reach 30 mm in either dimension. Although variable, the shells of *H. taylori* are consistently much darker than those of *H. malenae*. Distinct, close-set, minute granules occur already on whorls 0.5–1.5 in *H. taylori*. In *H. malenae*, fine growth lines

(which bear only widely separated tiny granules) first appear at about 0.9 whorl.

A distinctive difference between *H. taylori* and *H. malenae* involves the female genitalia, with the mucus gland ring and dart sacs of the latter being exceptionally widely separated, for the genus. In *H. malenae*, on the other hand, these structures are barely separated. In this respect, the situation with *H. malenae* is like that in the "first" group of Burch and Thompson (1957:2) or the group of *Humboldtiana buffoniana* (Pfeiffer, 1845).

In Big Bend National Park 3 species of *Humboldtiana* have been reported (Pratt, 1971:433, 434). A similar diversity of species probably prevails in the complex of mountains south of the park, which are dealt with here. In addition to *H. taylori* and *H. malenae*, shells of small Humboldtianas, possibly allied with *H. malenae*, have been collected from 2 localities in or north of the Sierra Jardin. Shells from one locality are similar to those of *H. malenae*. A single shell from a second locality is distinctive in lacking any indication of brown bands.

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