

Hanna, G.D.
1934

HEINZ A. LOWENSTAL

Reprinted from JOURNAL OF THE WASHINGTON ACADEMY OF SCIENCES
Vol. 24, No. 12, December 15, 1934

Invertebrate Paleontology
Earth Sciences Division
Natural History Museum

PALEONTOLOGY.—*Land shells from the Upper Eocene Sespe deposits, California.*¹ G. DALLAS HANNA, California Academy of Sciences. (Communicated by JOHN B. REESIDE, JR.)

Fossil land shells have been found so seldom in the older Tertiary sedimentary rocks of California that the small collection of specimens, submitted to me by Dr. Chester Stock, seems well worthy of record. The shells were found in the course of quarrying operations for fossil vertebrates in the Sespe deposits and are preserved in a dark red and green matrix, so characteristic of the Sespe in general. All of the specimens are more or less imperfect. An association with fossil mammalian remains in the stratum in which they occurred, places their age as upper Eocene.² This type may be described as follows:

Helminthoglypta? stocki Hanna, n. sp.

Figures 1 to 3a

Shell large, globose, narrowly umbilicate; whorls about $6\frac{1}{2}$ to 7, sutures moderately impressed; aperture and peristome not preserved, but apparently these are not expanded; shell extremely thin and sculptured only with delicate evenly developed growth lines.

MEASUREMENTS

	Altitude	Diameter
Holotype	32 mm.	38.5 (Slightly immature)
Paratype	27.5	41 (Crushed)
Paratype	26.5	36.5 (Immature)

Holotype, No. 3244, and two paratypes, Nos. 3245, 3246, from the upper Eocene Sespe deposits, north of the Simi Valley, Ventura County, California. Field Locality 180 Calif. Inst. Tech. Vert. Pal. Shells in the invertebrate collections of the California Institute.

The essential characters for diagnosis of the species in *Helminthoglypta* are apparent. The moderately elevated spire and generally globose shape are features found in no other west American species. In these characters the Sespe shells resemble "*Helix*" *leidyi* Hall and Meek³ from the Oligocene White River Group of the eastern slope of the Rocky Mountains. That species, however, is usually smaller and somewhat more globose, according

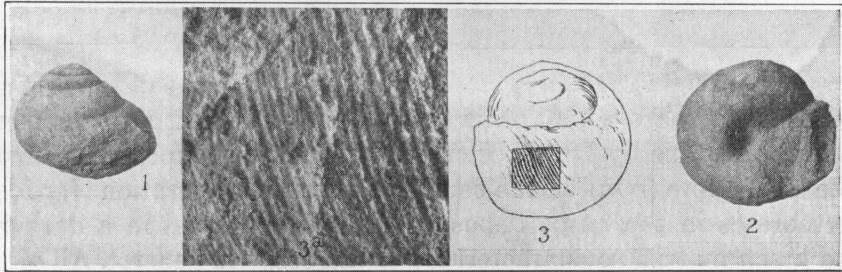
¹ Received November 8, 1934.

² Stock, C. Proc. Nat. Acad. Sci. 20: 150-154; 349-354. 1934.

³ HALL, J. and MEEK, F. B. Mem. Amer. Acad. Arts and Sci., n.s. 5: 394, pl. 3, fig. 12. 1854. This species was placed in the new genus *Pseudolisinoe* by Wenz (Foss. Cat. pt. 18, no. 2: 365. 1923), the type being *Helix veterna* Meek and Hayden.

to published figures and measurements⁴ and specimens in the California Academy of Sciences.

The only living species in California comparable to this in shape is a large form belonging to the *H. tudiculata* group collected in 1933 by C. C. Church in Tulare County. In a set of nine shells collected by Mr. Church, the largest is 42 mm. in diameter and 29 mm. in altitude; the smallest is



Figs. 1-3a.—*Helminthoglypta? stocki* Hanna. Fig. 1.—Holotype, no. 3244, anterior view. Fig. 2-3a.—Paratype, no. 3246. Fig. 2.—Basal view. Fig. 3a.—Enlargement of sculpture lines whose position is shown by rectangle in fig. 3.

36 mm. and 26 mm., respectively. Thus the shell is less globose than the Sespe fossil; also the surface of the living form is heavily malleate. Messrs. Church and A. G. Smith have the Tulare County shell under consideration for description.

The Tejon form, *H. obtusa* Anderson and Hanna⁵ is much smaller (diam. 16 mm.), less depressed, and altogether a different shell. *Micrarionta dallasi* Hanna,⁶ from the Eocene of the San Diego region, is likewise smaller (diam. 10.5 mm.) and less globose. No other described fossil forms appear to be sufficiently close to need comparison. Several small collections of land shells have been obtained by various parties during recent years in the southeast corner of Kern County, in a Tertiary formation which has been called "Walker." Preservation is usually rather poor and critical study has been postponed in expectation that better material might be discovered. It is possible that the present species may be there represented. The age of the formation is somewhat uncertain, but it lies below the Temblor (middle Miocene) and rests upon granite. The best specimen available was collected by William Barbat, 1,000 feet west of Pyramid Hill, Kern County, in sediments that were thought to belong to the lower Temblor. This shell has a dome-shaped spire, closed umbilicus, and is considerably larger than any of the Sespe specimens.

⁴ COCKERELL, T. D. A. and HENDERSON, JUNIUS, Bull. Amer. Mus. Nat. Hist. 31: 232, pl. 22, figs. 1-3. 1912.

⁵ ANDERSON, F. M. and HANNA, G. D. Occ. Papers Calif. Acad. Sci. 11: 142, pl. 3, figs. 12, 13. 1925.

⁶ HANNA, M. A., Univ. Calif. Publ. Geol. 16: 330, pl. 57, figs. 8, 11. 1927.

The problem of allocation of fossil land shells to the proper genera has been difficult for paleontologists to solve. The temptation is strong to create new group names without tangible morphological characters and solely on the basis of geologic or geographic position of the specimens. However, it seems best in this regard, when no pronounced structural differences can be found, to follow the work of such authors as Pilsbry,⁷ Cockerell and Henderson and refer the species to the genus which lives in the region today.

⁷ PILSBRY, H. A., *Manual of Conchology*, ser. 2, vol. 9, p. XLIV. 1894.