

TRIASSIC FRESHWATER GASTROPODS FROM SOUTHERN UTAH.

TENG-CHIEN YEN AND JOHN B. REESIDE, JR.¹

FRESHWATER pelecypods have frequently been reported from North American Triassic formations; on the contrary, no record of fresh-water gastropods is known to the writers, such records, in fact, being very rare in world literature. It is of particular interest, therefore, to record several gastropods contained in a small collection made by Mr. A. A. Baker, of the Geological Survey, in 1931 from the Chinle formation in the south point of the Cove between Colorado and Fremont Rivers, about 8½ miles northeast of their junction, southern Utah (A. A. Baker). The horizon is 272 feet below the base of the Wingate sandstone.

The Chinle formation is widely distributed over southern Utah, northern Arizona, and northwestern New Mexico. It is in general a series of red beds, but with much variation in the composition of the formation from place to place. It may contain shales, siltstones, sandstones, conglomerates, limestones, and particularly "lime-pellet" beds. Individual beds are generally nonpersistent. It has yielded a reptilian fauna particularly rich in phytosaurians, several species of unionid pelecypods, and a small flora of conifers, cycads, and ferns. There seems to be no doubt of its Upper Triassic age and of its fluvial origin.

The present specimens may be differentiated into two species of a new genus in the Family Amnicolidae. Forms belonging to the Amnicolidae have previously been recognized at levels ranging from Jurassic to Recent in different parts of the world, though they have been variably treated by authors in the Family Hydrobiidae (Pilsbry, 1934).

TRIASAMNICOLA Yen and Reeside, n. gen.

Shell *Bithynia*-like, of thick substance, and almost imperforate. Whorls few, rapidly increasing and sculptured on the exposed surface. Aperture ovate or subovate in outline, height

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exceeding width, having continuous peristome with thick margin; outer lip more or less retreating posteriorly and produced anteriorly.

Genotype.—*Triasamnicola pilsbryi* Yen and Reeside.

This genus might possibly have been derived from some *Rissoa*-like shell of marine or brackish-water origin. Members of the family Rissoidae in the living fauna have been demonstrated by Ellis (1932), to occur in brackish as well as fresh water. *Triasamnicola* superficially resembles *Pachydrobia* Crosse and Fischer, *Littoridina* Souleyet, and *Bulimus* Scopoli in the living molluscan fauna, but their relationships cannot be positively established at present. It may also be phylogenetically related to such species as "*Viviparus*" *montanaensis* Stanton, described from Lower Cretaceous beds in the vicinity of Harlowton, Montana.

TRIASAMNICOLA PILSBRYI Yen and Reeside, n. sp.

Plate I, Figs. 9a, b, c, d.

Shell bithynioid in outline, imperforate, of thick substance, having a highly elevated spire and descendingly inflated body whorl. The spire is about equal in height to the body whorl. Whorls gently convex, the last two prominently shouldered; growth lines traceable on better preserved parts of its exposed surfaces, which are occasionally marked by lip margins formed at resting stages. Suture well impressed. Aperture pyriform in outline with peristome continuous; outer lip semicircular, slightly retreating at upper part and produced at lower part; inner lip oblique but rather straight.

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|--------------------|-------|------|------|------|
| Altitude of shell | 11.0+ | 9.0+ | 7.0+ | 7.0+ |
| Width of shell | 7.1 | 7.0 | 5.0 | 4.3 |
| Height of aperture | 6.5 | 5.5 | 4.8 | 3.8 |
| Width of aperture | 4.0 | 3.8 | 3.0 | 2.6 |
| Number of whorls | 4.5+ | 2.3+ | 3.0+ | 4.0+ |

This species is characterized by its *Bithynia*-like outline, thick shell substance, prominently shouldered whorls, and imperforate umbilicus. It resembles, superficially, "*Viviparus*" *montanaensis* Stanton, with which it may be phylogenetically related. However, it differs by its narrower outline, thicker substance, and oblique, straight inner lip.

Holotype: U. S. Nat. Mus. 103833; paratype: 103834.

TRIASAMNICOLA LATISPIRA Yen and Reeside, n. sp.

Plate 1, Figs. 10a, b.

Shell oblong-ovate in outline, imperforate, of moderately thick substance, having a narrowly conical spire and descending and narrowly inflated body whorl. Whorls scarcely convex, larger ones slightly shouldered and bearing strong growth lines, which are clearly shown on better-preserved parts of its exposed surface. Suture well impressed. Aperture reniform in outline, peristome continuous, upper part of outer lip retreating and lower part well-produced, inner lip slightly arched, parietal and columellar margins moderately thick.

| | | |
|--------------------------|-------|------|
| Altitude of shell | 10.2+ | 9.2+ |
| Width of shell | 5.5 | 6.0 |
| Height of aperture | 5.0 | 5.0 |
| Width of aperture | 3.0 | 3.2 |
| Number of whorls | 4.5+ | 2.3+ |

This species differs from the preceding one by its narrower outline, less convex and less prominently shouldered whorls, and well-arched inner lip margin, which produces a reniform aperture.

Holotype: U. S. Nat. Mus. 103835; paratype: 103836.

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U. S. NATIONAL MUSEUM,
 WASHINGTON, D. C.