

NEW SPECIES OF MOLLUSKS OF THE GENUS CHILINA.

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Of the species herein described as new, four were received from Mrs. T. S. Oldroyd, of Stanford University. Three of them come from obscure lakes and rivers in the Andes along the border between Chile and Argentina. The fourth comes from Southern Chile, with no more specific locality given. One new species from Lake Nahuel Huapi in the Andes in the Province of Rio Negros, Argentina, and a new subspecies of *Chilina parchappii* Orbigny from Mar del Plata, Argentina, were received from Dr. Florentino Felippone of Montevideo, Uruguay. A new species, from the stomach of a bird on Lake Wafrel, Chile, has lain for many years without identification in the Museum collection.

CHILINA AURANTIA, new species.

Plate 1, fig. 6.

Shell elongate-ovoid, rather solid, smooth and slightly glossy, the sutures obscurely margined. Last whorl very large; aperture very wide. Surface closely spirally striated, the last whorl malleated behind the aperture. Aperture flaring, outer lip simple; columella white, not very wide, flattened and a little twisted, and bearing a white twisted tooth on the inner side of its upper end; parietal wall entirely covered with a white callus, and bearing a linear rudimentary tooth on its middle portion. Color bright orange yellow with four ashy spiral bands which show also within the aperture.

The type, Cat. No. 360163, U.S.N.M., measures: Length, 20 mm.; diameter, 12 mm.; length of aperture, 15 mm. It is from the stomach of a "pejerey bird," taken on Lake Wafrel, Chile, December 31, 1903. Cat. No. 226315, U.S.N.M., includes 14 other specimens taken from the same bird.

This species is very similar to that described in this paper under the name of *Chilina castanea*, but differs in the color, the greater

size, and especially in the numerous spiral striae. The two may, however, be but variations of the same species. It is hardly possible to tell to just what extent the process of digestion in the bird's stomach has affected the color of the shells. That digestion had not progressed very far is indicated by the generally fine condition of the periostracum and the clear, clean, enamel-like appearance of the white columella and callus.

CHILINA CASTANEA, new species.

Plate 1, fig. 5.

Shell ovoid, moderately thin; suture very narrowly channeled; entire surface of the shell obscurely, spirally striated, the striae more pronounced just below the suture; axial growth lines numerous, varying from fine striae to rather coarse riblets; last whorl malleated, especially behind the outer lip. General color a rich, glossy chestnut, with several faint spiral bands made up of arrow-head markings of darker color. The aperture is about three-fourths of the length the shell would have were not a small portion of the apex eroded. Columella not very broad, its edges slightly arcuate, and bearing a moderately strong, transverse tooth on the inner edge of its upper end. Parietal wall covered with a callus and bearing a small transverse tooth at its middle portion. Columella and teeth white. Outer lip simple, slightly sinuous. Interior of aperture whitish with a livid cast and with four fairly distinct spiral bands of purplish color.

The type, Cat. No. 359911, U.S.N.M., measures: Length, 18.5 mm.; diameter, 11.5 mm.; length of aperture, 14 mm. It and two other specimens, Cat. No. 359912, U.S.N.M., come from Rio Corcovado, Province of Chubut, Argentina, and were received from Mrs. T. S. Oldroyd. The label with the specimens states that this river is in the Pacific drainage. Three other specimens from the same locality were returned to Mrs. Oldroyd.

The rich glossy chestnut color serves to distinguish this species.

CHILINA PARCHAPPII MINOR, new subspecies.

Plate 1, fig. 7.

Similar to the typical species except that it is smaller, the tooth is very small, and within the aperture there are four interrupted purplish revolving bands corresponding to similar bands on the exterior.

The type, Cat. No. 360164, U.S.N.M., measures: Length, 18 mm.; diameter, 9 mm.; length of aperture, 12 mm. It comes from the Mar del Plata, Argentina. Cat. No. 348256, U.S.N.M., includes three

other specimens from the same place. All were presented by Dr. Florentino Felippone, of Montevideo, Uruguay. All four specimens are remarkably uniform in all respects.

CHILINA FLAMMULINA, new species.

Plate 1, fig. 4.

Shell thin, elongate, somewhat oliviform; sutures minutely margined and edged with whitish; whorls but slightly rounded, body whorl very long, rather narrow; spiral striae lacking; axial sculpture of regularly spaced growth lines, so fine and close as to resemble striae. Aperture long and narrow, its outer lip simple, slightly advanced at the middle portion. Columella white, narrow, a little flattened obliquely and with a slight twist and bearing a moderate tooth on the inner edge of its upper portion, the tooth almost invisible in a full front view of the shell. Parietal wall covered with a white callus. Color yellowish with an olive tinge, much flamed with vertical waved stripes of reddish chestnut; interior of aperture brownish, the flammulations of the exterior showing through the shell.

The type, Cat. No. 359913, U.S.N.M., measures: Length, 14.25 mm.; diameter, 8 mm.; length of aperture, 10 mm. It comes from Rio Fitaleufa, Province of Chubut, Argentina, a stream in the Pacific drainage. Cat. No. 359914, U.S.N.M., includes three other specimens from the same place. All were received from Mrs. T. S. Oldroyd, and five specimens from the same locality were returned to her.

CHILINA FELIPPONEL, new species.

Plate 1, fig. 2.

Shell small, globose, smooth, glossy; sutures slightly channeled, body whorl inflated; surface obscurely spirally striated; back of body whorl somewhat malleated; axial sculpture of a few low growth lines; aperture very large, white within, outer lip simple, nearly circularly rounded; columella white, flattened and slightly excavated and with a moderate, slightly oblique tooth near its upper end; parietal wall with a narrow band of white callus at its lower part; its upper portion like the exterior of the shell. Color brownish olive with zigzag reddish vertical lines, each of which becomes broader at intervals to help form four spiral bands. Apical whorls lost.

The type, Cat. No. 360165, U.S.N.M., measures: Length, 10 mm.; diameter, 7.5 mm.; length of aperture, 9 mm. It comes from Lake Nahuel Huapi in the Andes of Western Rio Negro Province, Argentina. Cat. No. 360166, U.S.N.M., includes another specimen from the same place. Both were received from Dr. Florentino Felippone.

This is one of the smallest species yet recorded for this genus. Its nearest ally is *C. olivacea*, described in this paper.

CHILINA OLDROYDAE, new species.

Plate 1, figs. 1, 3, 8, 10.

Shell elongate, acuminate, thin, translucent, consisting of about seven whorls (apical whorl eroded). Whorls slightly convex, body whorl somewhat constricted behind the outer lip; suture minutely margined; surface with numerous axial striae and slight plicae of growth, and obscurely spirally striated, the striae more prominent at the lower part of the last whorl; a number of fine incised spiral lines and a few broken or continuous incised lines here and there over the whole body whorl. Aperture ear-shaped, occupying about half the length of the shell, its outer lip thin and slightly sinuous. Columella broadly flattened, slightly excavated, its edges somewhat arcuate, and bearing at its upper inner end a prominent oblique fold. Color, pale yellowish olive; body whorl with a band of arrow-head markings of chestnut near the suture, a similar band encircling the base, and two faint broad bands on the middle portion of the whorl. On the penultimate whorl all the bands are concealed by the body whorl, except one band of arrow-head markings near the middle of the whorl. Earlier whorls pale. Columella and parietal callus white, interior of shell whitish tending to livid flesh color.

The type, Cat. No. 359906, U.S.N.M., measures: length, 42 mm.; diameter, 19 mm.; length of aperture, 22.5 mm. It comes from Lake Fetalafquen, in the Andes, in the northwestern part of the Province of Chubut, Argentina, and was received from Mrs. T. S. Oldroyd.

In a general way this shell in form and size recalls the well-known *Lymnaea stagnalis* Linnaeus. Its nearest relatives are *Chilina fulgurata hatcheri* Pilsbry and *C. smithi* Pilsbry. Its size and locality at once separate it from the former, while its thin texture, color, and locality distinguish it from the latter.

Like *C. smithi*, this species varies much in form and size. Its coloration in the eight specimens at hand is fairly uniform except in the varying intensity of the color bands. Five of the specimens are more chunky (for example one has a length of 30 mm. and a diameter of $16\frac{1}{2}$ mm.). All the color bands on these show a more or less strongly marked tendency to have all four of the color bands made up of arrowheads. One specimen, typical in form, has the whole surface covered with zigzag lines of reddish, with accentuated arrow-head spots to form the four color bands. One specimen is so distinctly shouldered that it is turrated.

CHILINA OLIVACEA, new species.

Plate 1, fig. 9.

Shell ovoid, moderately solid, smooth, unctuous, distinctly slopingly shouldered, upper whorls angulated, sutures distinctly margined,

surface obscurely spirally striated, the striae more distinct on and above the shoulder and on the lower portion of the body whorl; axial sculpture consisting of low lines of growth hardly visible to the unaided eye. Apex eroded, whorls apparently about five, the body whorl very large. Aperture slightly flared, wide and high, about three fourths as long as the shell. Outer lip simple, angled at the shoulder. Columella white, flattened, slightly arcuate, with a moderately thick tooth near its upper end resembling the thread of a stout screw. Half the height of the parietal wall covered with a thick white callus, the upper portion of the parietal wall like the outer surface of the shell. Interior of aperture pinkish white with four broad dark bands. Color of shell light olive greenish with numerous zigzag axial stripes of chestnut which, on the body whorl, are emphasized to form four spiral bands.

The type, Cat. No. 359908, U.S.N.M., measures: Length, 20 mm.; diameter, 12.5 mm.; length of aperture, 15 mm. It comes from Southern Chile and was received from Mrs. T. S. Oldroyd. Cat. No. 359909, U.S.N.M., includes two other specimens from the same lot, and three others were returned to Mrs. Oldroyd.

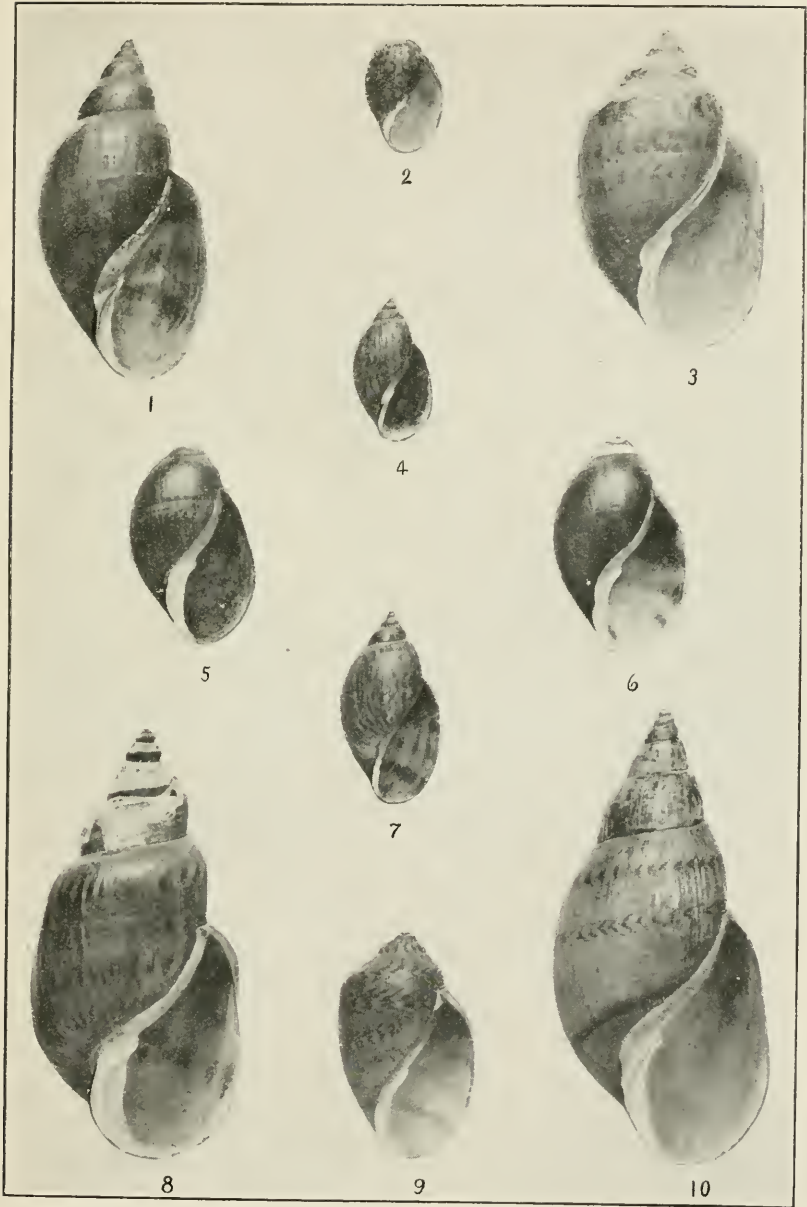
This species is characterized by the smooth, olivaceous periostracum and the beautiful zigzag coloration emphasized into four bands on the body whorl. Its nearest relative is *Chilina fluctuosa* Gray.

EXPLANATION OF PLATE.

All figures $\times 1\frac{1}{2}$,

- FIG. 1. *Chilina oldroydae*, new species.
2. *Chilina felipponei*, new species, type.
3. *Chilina oldroydae*, new species,
4. *Chilina flammulina*, new species, type.
5. *Chilina castanea*, new species, type.
6. *Chilina aurantia*, new species, type.
7. *Chilina parchappii minor*, new subspecies, type.
8. *Chilina oldroydae*, new species.
9. *Chilina olivacea*, new species, type.
10. *Chilina oldroydae*, new species, type.





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