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NEW SPECIES OF NORTH AMERICAN ANCYLIDÆ
AND LANCIDÆ

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I

Ancylus hendersoni, new species

Pl. I, figs. 1-2; pl. II, fig. 1

Shell oval, slightly wider anteriorly, very much depressed, light horn color; anterior and posterior margins regularly rounded, lateral margins about equally curved, the right somewhat more than the left; anterior, posterior and right lateral slopes straight, left lateral slope slightly incurved; apex very acute, almost spine-like, eccentric, turned towards the left side, situated at about $\frac{2}{5}$ of the length from the posterior margin and at about $\frac{1}{3}$ of the width from the left margin, radially striate, the striæ continuing over the surface of the shell from the apex to the margins; surface with fine and regular lines of growth and delicately radially striate.

Length 5, width 3, alt. 1 mm.

Type locality: Eldora Lake, Boulder Co., Colo.

Types, No. 79910, Coll. Walker. Paratypes in the collection of Junius Henderson.

The occurrence of a species of *Ancylus* in a mountain lake in Colorado was wholly unexpected and is really one of the most interesting discoveries in American conchology of recent years. The genus *Ancylus* as now restricted (see Walker, *Ancylidæ* of South Africa, 1923, p. 13) has hitherto consisted of a single species, *A. lacustris* (L.), which is confined to Central and Western Europe. How another species of this peculiar genus should have found its way to a mountain lake in the centre of the North American continent is a problem for which as yet no solution is at hand.

Compared with *A. lacustris*, *hendersoni* is smaller, more oval and with a much more acute apex.

I am indebted to Dr. H. B. Baker, of Philadelphia, Pa., for the examination of the animal and the accompanying figure of the radula. He states that "the animal is dextral as the gill runs along the right side of the posterior end." His note on the radula is as follows: "Radula of specimen in alcohol from Eldora Lake, Boulder Co., Colorado; central, 1st, 2nd, 7th, 12th, 13th and 14th teeth. Formula: 7-13-1-13-7; the hairline at the right gives the shape of the right half of a transverse row with positions of central, 7th and 14th teeth marked; arrangement as in *A. lacustris*."

He has also kindly supplied the figure of the radula of *A. lacustris* (Pl. II, fig. 2) with the following note: "Radula of a specimen in alcohol from Rostock, Germany (Dr. B. Sharp); central, 1st, 7th, 10th and 12th teeth. Formula: (7-8)-12-1-12-(7-8); Ulicny (Verhandl. d. Naturf. Ver. in Brunn, XXVI, 1888, pp. 120-123, pl. I) gives (4-7)-(11-13)-1-(11-13)-(4-7); transverse rows as figured by the same author (*l. c.*; pl. I, fig. B3). The cusped laterals and central form a trough; the 12th tooth (13th in Ulicny's figure) has the cusps reduced, while the outer 7 or 8 elements are vestigial, cusplless plates which lie horizontally, slightly overlap and tend to coalesce so as often to give the appearance of the figure in Walker (*Ancylidæ* of S. Afr., 1923, p. 13, text-fig.

2). Jaw; as figured by Ulicny (*l. c.*, pl. I, figs. B1-2); quite similar to that in *Ferrissinae*."

The similarity of these radulas, except in detail, leaves no doubt as to the systematic position of *A. hendersoni*.

For comparison I also figure a drawing of the radula of *Pseudancylus fluviatilis* (Mull.) also prepared by Dr. Baker and accompanied by the following note: "Radula of a specimen in alcohol from Wurzburg, Germany (Dr. B. Sharp); central, 1st, 7th, 10th, 13th and 15th teeth. Formula: 18-1-18 (figured); Ulicny (*l. c.*) gives (25-32)-1-(25-32). Transverse rows almost straight, but curved slightly anteriorly towards the outer edge, as shown by Ulicny (*l. c.*, pl. I, fig. A3). Jaw, when crushed apart, appears as figured by the same author (pl. I, figs. A1-2)."

This figure brings out an additional detail of the central tooth, the presence of a small cusp on each side of the main cusp, which has apparently been overlooked in all of the published figures. My attention was first called to it by Dr. Hugh Watson, of Cambridge, England, some time ago.

Professor Henderson writes: "We found them only clinging to stones, etc., in very tiny inlets from the lake, where they were well protected from the waves, but in clear lake water, not in swampy ground."

I take great pleasure in naming this remarkable species after its discoverer, Professor Junius Henderson, of Boulder, Colorado.

II

Ferrissia (s. s.) *mcneilli*, new species

Pl. I, figs. 3-4

Shell depressed, oval, slightly wider anteriorly; light horn color; anterior margin regularly rounded; posterior margin obliquely truncate as it passes into the right margin; lateral margins about equally curved, the right slightly more than the left; anterior slope nearly straight, slightly curved as it approaches the apex; posterior slope straight from the base

of the apex to the posterior margin; right lateral slope incurved, the left one slightly convex; apex prominent, subacute, somewhat obtuse, eccentric, situated at about $2/5$ of the length from the posterior margin and $1/3$ of the distance from the median line to the right margin, radially striate; surface with irregular growth-lines and distinctly radially striate on the anterior and lateral slopes, but only obsoletely on the posterior slope.

Length 5, width 3.3, alt. 1 mm.

Type locality: Mandeville Co., Alabama.

Type, No. 40133, Coll. Walker.

This species is more closely related to *F. arkansasensis*, herein described, than to any other of the described species. It differs in its smaller size, more oval shape, more prominent and more eccentric apex, which is more strongly striate, and in its distinct radial striæ on the anterior and lateral slopes.

It is named after its discoverer, the late L. H. McNeill, of Mobile, Alabama, whose premature death was such a great loss to southern conchology.

III

Ferrissia (s. s.) *browni*, new species

Pl. I, figs. 5-6

Shell oval, somewhat elevated; light greenish horn color; regularly and equally rounded at both ends; lateral margins about equally curved, the left somewhat more than the right; anterior slope slightly convex; the lateral and posterior slopes straight; apex (uneroded) prominent, obtuse, strongly radially striate, situated on the median line at about $2/5$ of the length from the posterior margin, scarcely, if at all, eccentric; surface with the lines of growth strong and regular and occasionally, especially towards the margins, with faint, nearly obsolete, indications of radial striation.

Length 5.25, width 3.5, alt. 1.75 mm.

Type locality: White River, south of Elkins, Arkansas.

Type, No. 47432, Coll. Walker. Cotypes in the collection of A. J. Brown, Sulphur City, Arkansas.

The apex of the type being eroded, the apical characters are described from an immature specimen.

This species resembles *F. tarda* (Say) in the non-eccentric apex, but differs in being more depressed, with a less convex anterior slope and greater width than is characteristic of the typical western form of that species, the apex is more central and its striæ coarser. It is a well marked local race and distinctly different from the usual manifestation of *tarda*. Named after the collector, Mr. A. J. Brown.

IV

Ferrissia (s. s.) *arkansasensis*, new species

Pl. I, figs. 7-8

Shell very broadly oval, almost subcircular, depressed; light greenish horn color; anterior and posterior margins regularly and equally rounded; lateral margins about equally curved, the left slightly more than the right; anterior, posterior and lateral slopes straight, the left lateral slope more oblique than the right; apex very obtuse, scarcely raised above the lines of the lateral slopes, situated at about 1/3 of the length from the posterior margin and only slightly eccentric, with very fine radial striæ; surface with fine lines of growth and delicately radially striate throughout, striæ somewhat stronger towards the margins.

Length 6, width 4.5, alt. 1.75 mm.

Type locality: Main Fork of White River, south of Elkins, Arkansas.

Type, No. 82444, Coll. Walker. Paratypes in the collection of A. J. Brown.

This very distinct species was collected by Mr. A. J. Brown, of Sulphur City, Arkansas. It differs from all of the described species of *Ferrissia* s. s. by its depressed, almost subcircular form and radially striate surface.

V

Lanx hannai, new species

Pl. III, figs. 1-4

Shell large, very broad oval, almost obovate, being somewhat narrowed anteriorly and the greatest width being at about the posterior third; depressed except in the centre which is obtusely elevated, the elevated portion occupies a little more than one-half of the superficial area, outside of this the shell surface is flat and even slightly concave; dark brown, opaque; anterior and posterior margins regularly rounded; lateral margins about equally curved, the left slightly more than the right; anterior slope oblique and nearly straight, except as it curves towards the apex, to the base of the elevated portion of the shell, thence nearly flat to the margin; posterior slope very oblique and incurved from the apex to the base of the elevated part of the shell, thence nearly flat, though somewhat incurved, to the margin; right lateral slope oblique and nearly straight to the base of the central elevation, thence flat to the margin; left lateral slope slightly more oblique on the central part, otherwise the same as the right slope; apex prominent, elevated, very obtuse, situated on the median line and posterior to the centre and not at all eccentric, eroded in all specimens seen; surface with strong, regular growth-lines and without any appearance of radial striation, but, especially in mature shells and towards the margin, the peritreme is somewhat irregularly, radially folded or "crimped"; interior of the shell covered with a thick, chestnut-brown enamel, darker in the apical region.

Length 12.5, width 11.25, alt. 2.75 mm.

Type locality: McCloud River, Baird, California.

Type in the collection of Stanford University, California.

Paratypes in the collection of Bryant Walker.

Another specimen is somewhat larger than the type, being 13.5 x 11.5 mm., but as it was somewhat deformed on the anterior margin it was not taken as the type. All of the spec-

imens were greatly eroded on the elevated portion of the shell.

This peculiar species is characterized by its central elevated portion surrounded by a broad flat margin and dark brown interior. It seems to be entirely distinct and to have no special affinities with any of the described west coast species.

The jaw (fig. 2) and radula (fig. 4) are of the typical Lanicid character as recently described by Pilsbry (*Naut.*, XXXVIII, p. 74).

I am indebted to Miss Mina L. Winslow, of the Museum of Zoology of the University of Michigan, for the figures of the shell; to Mr. W. F. Clapp for mounting the jaw and radula and to Mr. J. H. Blake for figuring them.

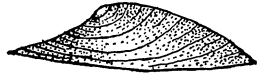
I am under obligation to Mrs. Ida S. Oldroyd, of Stanford University, California, for the opportunity of describing this species and very gladly accede to her request that it should be named after its discoverer, Dr. G. Dallas Hanna.

PLATE I

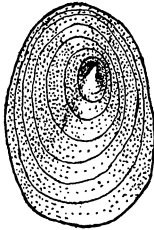
- FIGS. 1-2. *Ancylus hendersoni*, new species. Type.
FIGS. 3-4. *Ferrissia mcneilli*, new species. Type.
FIGS. 5-6. *Ferrissia browni*, new species. Type.
FIGS. 7-8. *Ferrissia arkansasensis*, new species. Type.



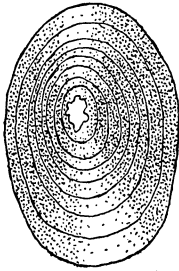
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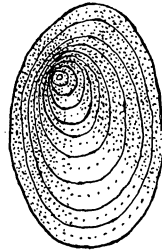
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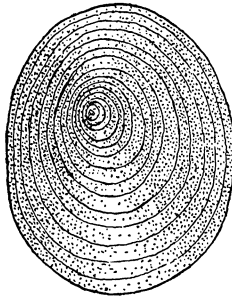
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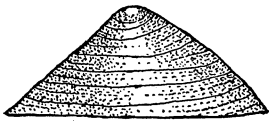
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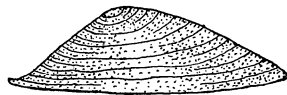
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7



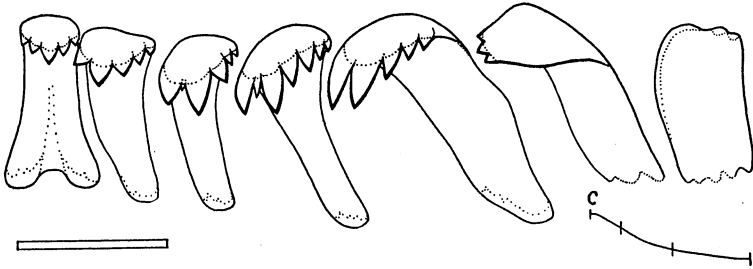
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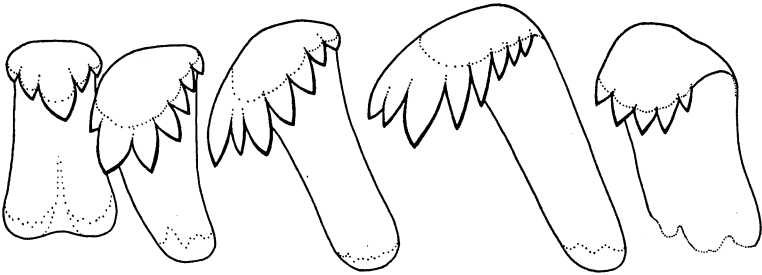
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PLATE II

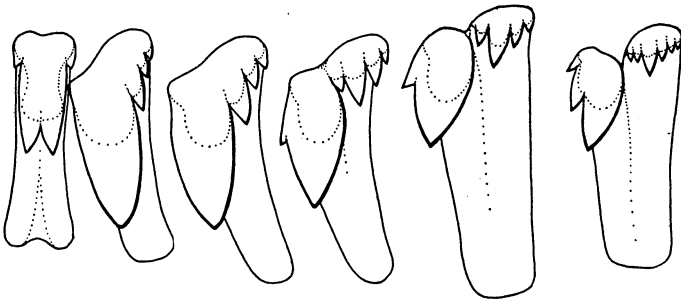
- FIG. 1. *Ancylus hendersoni*, new species. Radula.
FIG. 2. *Ancylus lacustris* (L.). Radula.
FIG. 3. *Pseudancylus fluviatilis* (Mull.). Radula.



1



2



3

PLATE III

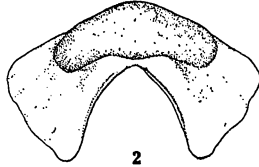
FIGS. 1 and 3. *Lana hannai*, new species. Type.

FIG. 2. *Lana hannai*, new species. Jaw.

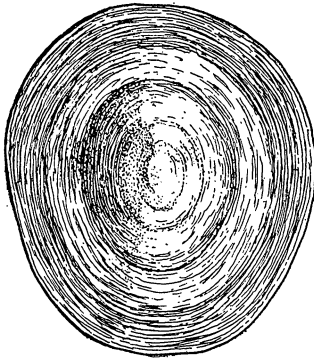
FIG. 4. *Lana hannai*, new species. Radula.



1



2



3



4



