

(*Scalenostoma*) *rangii*, Bartsch, Proc. U. S. N. M., No. 1906, p. 307, 344, 1912.

SCALENOSTOMA BABYLONIA (Bartsch).

Odostomia (*Scalenostoma*) *babylonia* Bartsch, Proc. U. S. N. M., No. 1903, pp. 287-8, Pl. 38, fig. 3, 1912, *Odostomia* (*Scalenostoma*) *babylonia* Bartsch, Proc., U. S. N. M., No. 1906, p. 307, 344, 1912.

The South African species of this genus which I described in the Report on the Turton Collection of South African Marine Mollusks, Bull. 91, U. S. N. M., p. 70, Pl. 19, fig. 6, 1915, as *Subculima magna* must now be called *Scalenostoma magna* (Bartsch).

DESCRIPTION OF A NEW VARIETY OF LAMPSILIS FROM ONEIDA LAKE WITH NOTES ON THE L. LUTEOLA GROUP.

BY FRANK C. BAKER.

LAMPSILIS RADIATA ONEIDENSIS F. C. BAKER. Plate II.

Shell elliptical in outline, rounded at both ends, somewhat compressed; dorsal margin slightly curved, ventral margin rounded, notably so in the male shell; female shell produced postbasally; surface usually roughened by growth lines, rarely smooth; epidermis olive-green, the posterior half usually black or brown, obscuring the markings; a few dark green rays of the *radiata* type are present on some shells; umbones prominent, inflated, but little elevated above the contour of the dorsal margin; unbonal slopes rounded; cardinal teeth of the left valve double, rather heavy, serrated, the anterior cardinal higher than the posterior and pyramidal in shape, the posterior cardinal rectangular somewhat compressed; the pit between the cardinal teeth is deep and wide; there is a small, narrow pit at the base of the anterior cardinal tooth; cardinal teeth of right valve two in number, triangular, the anterior small, compressed, the posterior large, elevated above the anterior, forming a truncated pyramid; the pit between the teeth is narrow and deep; the anterior cardinal of this valve is reduced to a mere remnant in some individuals; the ridge joining the cardinal and lateral

teeth is heavy as in *radiata*; submuscle scar, more than in *radiata*.

All of the specimens

Length	Width	Height
1.5	1.0	0.5
1.8	1.2	0.6
2.0	1.4	0.7
2.2	1.6	0.8
2.5	1.8	0.9

Types in collection at Syracuse University of Natural Sciences, Detroit, Mich.

This race of *Lampsilis* differs from the latter in the outline of the dorsal margin and in the shape of the cardinal teeth. The dorsal margin is not so deeply rounded and in the male is more elevated. The cardinal teeth are of the *radiata* type.

This race is the characteristic *horvathi* but from Oneida Island, Ottawa County, Ohio. Walker, shows a heavier, more rounded cardinal teeth in females of *oneida*.

¹ The Fresh-water Mollusks of the United States, page 7, 1916; The Mollusks of New York, No. 4, New York, fig. 44, 1916. The name was changed to *oneida*.

² Trans. Ottawa

Proc. U. S. N. M., No. 1906, p.

ch).
du Bartsch, Proc. U. S. N. M.,
No. 3, 1912, *Odotomia* (*Scale-*
U. S. N. M., No. 1906, p. 307,

genus which I described in
Journal of South African Marine
Biology, p. 70, Pl. 19, fig. 6, 1915, as
called *Scalenostoma magnificu*

teeth is heavy and bears one or more tubercles; lateral teeth as
in *radiata*; anterior adductor muscle scar, posterior adductor
muscle scar, and dorsal muscle scars more heavily impressed
than in *radiata*; nacre bluish-white, slightly iridescent.

All of the specimens seen have their umbones eroded.

Length	56,	height	36,	breadth	21 mm.	♂.
"	53,	"	35,	"	20 mm.	♀.
"	51,	"	37,	"	20 mm.	♂.
"	60,	"	40,	"	24 mm.	♀.
"	66,	"	41,	"	27 mm.	♂.
"	63,	"	41,	"	27 mm.	♀.

Types in collection of the New York State College of Forestry
at Syracuse University; cotypes in collection of the Academy
of Natural Sciences of Philadelphia and Dr. Bryant Walker,
Detroit, Mich.

This race of *Lampsilis* is related to both *radiata* and *luteola*.
From the latter it differs in the more elliptical sometimes orbic-
ular outline of the male shell, the olive green and brown epi-
dermis and in the cardinal teeth which are heavier and broader,
not so deeply serrated, and of different shape. From *radiata* it
differs in its outline, in its epidermis, which is not as rough,
and in the cardinal teeth, which are not as heavy, and are
more elevated, triangular and pyramidal. The pits at the base
of the cardinal teeth are deeper.

This race is common in Oneida Lake and is very uniform in
the characteristics noted. It was previously listed¹ as *Lampsilis*
borealis but specimens of *borealis*² from the type locality, Duck
Island, Ottawa River, Ontario, Canada, received from Dr.
Walker, show that it is not that species, true *borealis* having a
heavier, more inflated shell, heavier and differently shaped
cardinal teeth and an epidermis like that of *radiata*. Small
females of *oneidensis* have a superficial resemblance to *Lampsilis*

¹The Fresh-water Mollusca of Oneida Lake, New York. NAUTILUS, xxx,
page 7, 1916; The Relation of Mollusks to Fish in Oneida Lake. Tech. Bull.
No. 4, New York State College of Forestry at Syracuse University, page 257,
fig. 44, 1916. The references to *borealis* in the latter publication should be
changed to *oneidensis*.

²Trans. Ottawa Field Nat. Club, No. 3, page 53, 1882.

LAMPSILIS FROM ONEIDA LAKE
LUTEOLA GROUP.

BAKER.
BAKER. Plate II.

at both ends, somewhat
curved, ventral margin
shell; female shell produced
by growth lines, rarely
posterior half usually black
a few dark green rays of
shells; umbones promi-
the contour of the dorsal
cardinal teeth of the left
the anterior cardinal higher
shape, the posterior cardi-
ed; the pit between the
is a small, narrow pit at
; cardinal teeth of right
anterior small, compressed,
anterior, forming a trun-
ooth is narrow and deep;
duced to a mere remnant
the cardinal and lateral

luteola rosacea but differ in the form of the cardinal teeth as well as in the outline of the shell and in the color and texture of the epidermis.

Oneidensis apparently bears the same relation to *radiata* that *rosacea* does to *luteola*. It is not a depauperate or sporadic form of *radiata*, for it occurs plentifully and is always recognizable at a glance when mixed with *luteola* and *radiata*. A lot of shells from Lower South Bay contained these three mussels in the ratios indicated: *oneidensis*, 28; *radiata*, 15; *luteola*, 16. Individuals occur with a pink shell and nacre like that of the race *rosacea*. How widely distributed this race of *radiata* may be is not known but it should be found in other parts of New York State.

The *luteola* group of *Lampsilis* living in Oneida Lake is of unusual interest from the standpoint of variation. Here the two species have apparently interbred, causing a mixture of the characters of both species. Thus, individuals of *radiata* occur with a normal hinge but with a polished surface like *luteola*. Also, *luteola* individuals occur with a rough surface and the crowded rays of *radiata*. The breadth of shell in both species varies nearly fifty per cent. All specimens of *luteola* are more numerously rayed than are those from the West and also those from Western New York, showing apparently a tendency to vary toward the *radiata* type of surface. A tinge of red is found in individuals of all species, though not as strikingly as in the typical *rosacea* of DeKay.

A form of *luteola* occurs in the lake which is much compressed (resembling in this respect *radiata*) the epidermis is smooth and the bright green rays are widely spaced. These individuals are noteworthy for the marked elliptical outline of the shell and the acute V-shape formed by the ventral half of the shell. Measurements are given below of these specimens together with typical forms of *radiata* and *luteola*. All are males.

Length 80, width 47, breadth 27 mm.	<i>Luteola</i> , compressed.
“ 58, “ 34, “ 19 mm.	<i>Luteola</i> , compressed.
“ 64, “ 40, “ 35.5 mm.	<i>Luteola</i> , typical.
“ 62, “ 38, “ 35.5 mm.	<i>Radiata</i> .
“ 80, “ 25, “ 25 mm.	<i>Radiata</i> , Mohawk river.

The *radiata* of Oneida Lake are not typical being more inflated, quadrate in outline rather than elliptical, the rays are not as even or as numerous and the color of the shell is usually yellowish rather than greenish, in this respect approaching *luteola*. The *radiata* type in the lake shows a decided variance toward the form of the shell herein described as *oneidensis*.

The only safe criterion for separating the Oneida Lake *radiata* from *luteola* is by the form of the cardinal teeth. Many years ago F. R. Latchford¹ tersely characterized these differences as follows: "In *U. radiatus* these are short, erect, and triangular. In *U. luteolus* they are long, curved, compressed, and oblique." The dull, rough epidermis is characteristic of *radiata* but, as noted in Oneida Lake specimens this may not be present or typically developed. It seems evident that in Oneida Lake evolutionary forces have been at work upon this group of the Naiades and that the form herein described as *oneidensis* is the result.

Figures 1 and 3 represent male, 2 and 4 female individuals.

My thanks are due Dr. Bryant Walker for assistance in working out the relationships of this race and also Dr. C. C. Adams, of the New York State College of Forestry, for the loan of the plate upon which the race is figured.

New York State College of Forestry,
Syracuse University.

DESCRIPTIONS OF NEW SPECIES FROM THE CRETACEOUS AND
TERTIARY OF THE TESLA, PLEASANTON, SAN JOSE, AND
MT. HAMILTON QUADRANGLES, CALIFORNIA.

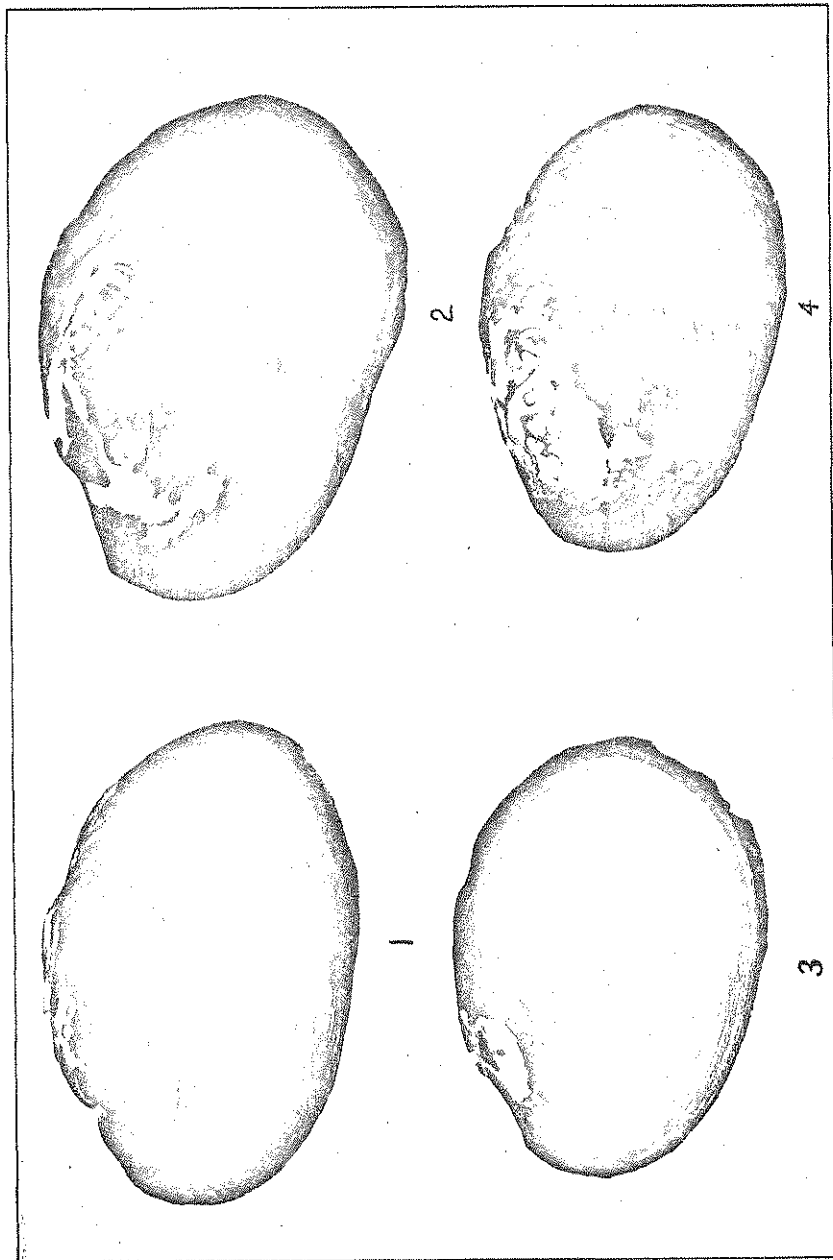
BY E. B. HALL AND A. W. AMBROSE.

(Concluded from page 71)

PHOLADOMYA HARRIGANI, n. s. Hall and Ambrose.

Description. Shell, right angle, thick; beaks low, anterior, in-curved, nearly touching. Buccal end abruptly truncated at

¹Notes on the Ottawa Unionidae. Trans. Ottawa Field Nat. Club, No. 3, page 61, 1882.



UNIO RADIATUS ONEIDENSIS BAKER.

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ON THE GI

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Additional material rec Museum makes it necessa Pyramidellids typified by and Bartsch (Bull. 68, U. S must be referred to the fan

There is a wonderful re *Scalenostoma* as far as tax cerned, and it was this re sentatives of the genus *Sco* this a Pyramidellid in the that *Odostomia* (*Eulimasto* obliquely tilted, deeply character, while *Scalenosto* non-sinistral tip.

The following synonymy sho

Scalenostoma Deshayes, 1 60, Pl. vii, figs. 26-8, 186 hayes=*Subeulima* Souverb 1875. Type *Subeulima lus*

The west American mer

SCALENOSTOMA RANGII (de

Chemnitzia rangii de Fo fig. 1, 1867. *Odostomia* (Bull. 68, U. S. N. M., p.