

NAUTILUS.

to pseudo *Nephronaias* seen by the
cesses an (accessory?) adductor
tion of the cardinal teeth, which
arked in the second assemblage.
t, therefore, proposes to use the
Crosse and Fischer, 1893, type *U.*
of this species has been described
psoronaias embracés, besides the type,
ing Simpson's interpretation of
cher (1893). This group of re-
crocodilarum, *psoricus*, *semigranosus*,
by Simpson as a group of *Elliptio*,
ing, and the deep beak cavities of
a to observe that it was possible
all, be placed in *Quadrula*.
giving generic rank as above to the
psoricus. To this genus we are en-
to undescribed, under the name of
Pl. VII, figs. 1, 2.

rough, brown, biangular. Length
aded before, the extreme frontal
orsum slightly arched, descending
e widely biangular posterior; the
midway the height, the lower angle
hich is nearly straight. The beaks
ximate; and *apparently*, concentri-
rk brown (olivaceous and obsoletely
the lines of growth numerous and
are covered with fine pustulations,
radially linear behind. The post
double, making the shell biangulate
ble in the left valve, single in the
deeply sulcate and stout. Laterals
raight, separated by an interdendum.
rather deep. Dorsal scars numerous,

extending in a row from above the centre of the cavity down
and forward upon the base of the cardinal teeth. Three well
impressed muscle scars in front, two behind, the later almost
confluent. Habitat, Kux Creek, Chama, Guatemala. Collected
by Mr. A. A. Hinkley, Feb. 6, 1917. A few dead specimens
were obtained on the bank of the Isaibha River (Chama) of
which the Kux Creek is a tributary. Type in Academy Natural
Sciences. Cotypes in collection of A. A. Hinkley, the author
and U. S. N. Museum.

I place this species in *Psoronaias* Crosse and Fischer, type *U.*
psoricus, because of its evident relationship to *crocodilarum*, and
distinctus, differing mainly from the latter in size and degree
of inflation, being much inferior in both respects to *distinctus*.

ON THE RATE OF GROWTH OF POND UNIOS.

BY L. S. FRIERSON.

During the latter part of March 1916, the writer, for the pur-
pose of constructing a fish pond, excavated a barrow-pit near
the bank of a small creek, about ten feet wide, and at the time
nearly dry. The barrow-pit was perhaps one hundred feet long,
fifty feet wide and three feet deep. Early in April, 1916, the
pit became full of water, overflowing from the adjacent creek,
and together with two subsequent overflows, supplemented with
seepage from the newly constructed fish pond, the pit remained
more or less full of water, until May 25, 1917, when it was
drained by a ditch into the nearby creek. From the dried
bottom of this pit some thirty Unios were picked up by the
writer. Ten of these were *Unio tetralasmus* Say, and the rest
were *T. texasensis* Lea. All the specimens were of remarkably
uniform size and appearance. The *texasensis* being about one
and a half inches, and the *tetralasmus* two and a half inches
long. Exact dimensions of a *texasensis*: length 43, height 24,
diam. 16 mm.; of *tetralasmus* 75, 40, and 25 mm.

Both of these species had attained puberty. A female *texa-*
sensis has its gills fairly full of young glochidia. A *tetralasmus*
had several (three or four) ovisacs with a few (remaining)

glochidia. In assigning an age to these shells it is quite sure that the *tetralasmus* discharges its glochidia in March and early April, so that when picked up on May 25, these shells were just about fourteen months old, from the date of discharge from their mother's gills.

In the case of the *texasensis* (which spawns somewhat later) it is possible that these were dropped by fish of which, at least six species) obtained access to the pit on May 7, 1916 (on which date an overflow occurred), thus making about thirteen months. At any rate the maximum age of either species is fourteen months from their mother's ovisacs. One of the *U. tetralasmus* is shown of natural size in Pl. VII, fig. 4.

Another observation concerning pond mussels might here prove of interest. A large pond was cut into two by a railroad embankment, a culvert preserving the level and providing communication between the two. In the lower and larger pond a half-bushel of Yonkapin (*Nelumbium luteum*) seed was sown. It was six years before these seed germinated. These plants, during the summer, cover the entire surface of the pond with their broad peltate leaves. In this pond the writer planted a colony of a dozen *Anodonta grandis*. Several years after, taking advantage of extreme low water, the writer made a careful survey of these twin ponds, with the result that hundreds of Anodons could be found in the upper pond, but not a single one was found in the lower pond. Either the shade killed the young shells, or else the glochidia-laden fish avoided the shade of the lotus plants and congregated in the upper pond (there are no *Nelumbii* in the upper pond). Is not this avoidance of shade a reason for the paucity of unios in the tropics?

A NEW SOUTH AFRICAN NESOPUPA.

BY H. A. PILSBRY.

NESOPUPA FARQUHARI, n. sp.

Among Pupillidae sent by Mr. J. Farquhar there is a new species from Grahamstown which may be defined by comparison

with *Nesopupa griqualandica* is ovate, of about the same in sculpture and in sculpture and in sculpture. The two palatal plicae, the upper edge of the peristome, the base of the columella is short and very deep, the small basal plica with the upper plica. In *griqualandica* the upper palatal plica, the lower palatal; but in *farquhari* except quite close to the base. Length 1.65, diam. 0.8.

Mr. Burnup's figure may perhaps represent the same paper as *farquhari*, though the figures 8 and 10 represent in honor of one of the figures. It will be figured in the next issue.

A NEW G

GUNDLACHIA HINKLEY

Shell subovate, beak at the margin rather shortly, but somewhat dilated, expanded and broadly, more curved than the upper and decidedly turned inward, smooth except for a narrow, corneous, nearly pure

¹ *Pupa griqualandica* M. Pretoria.

² Ann. Mag. N. H. (8),

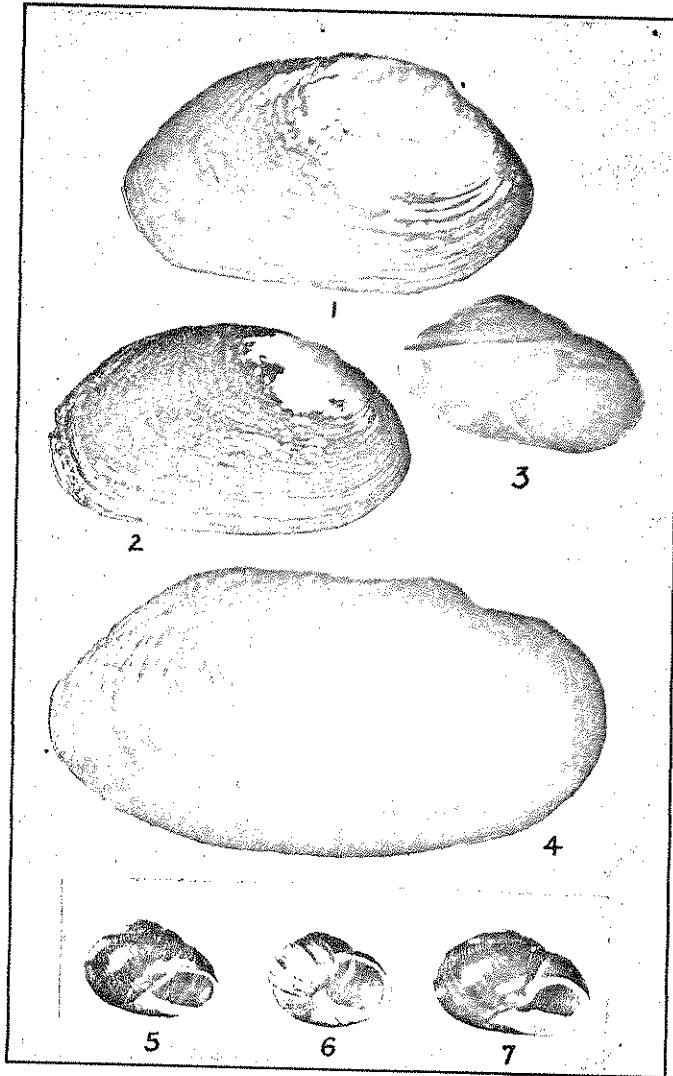
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 to call my atten-
 used by O. Boettger
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 necessary to bestow a
 known as *Cerithiop-*

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Iansa de Joinville,
 lth, and is engaged
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 l with mollusks.—



1. 2. PSORONAIAS KUXENSIS FRIERSON.
3. EPIPHRAGMOPHORA CALLISTODERMA PILS. & FERR.
4. UNIO TETRALASMUS SAY.
5. 6. ZACHRYZIA RAMSDENI PILS.
7. Z. EMARGINATA PFR.