Additional Notes on Iowa Mollusca

B. Shimek
Fig. 1. Transection of head through auditory region at time auditory involution is just beginning.

Fig. 2. Similar section of embryo of the age of the one shown in Figs. 3 and 4.

Fig. 5. Similar section of somewhat older embryo.

Fig. 6. Similar section of embryo shown in Fig. 7.

Fig. 8. Similar section of embryo shown in Fig. 9.

Fig. 10. Similar section of embryo shown in Fig. 11.

Figs. 1, 2, 5, 6, 8 and 10 are magnified 50 diameters; Figs. 3 and 4 five and one-third diameters; Figs. 7 and 9 four diameters; Fig. 11 three diameters.

AN INSTANCE OF THE PERSISTENCE OF THE DUCTUS VENOSUS IN THE DOMESTIC CAT.

BY H. W. NORRIS.

After injecting with starch-mass through the right femoral vein it was found that the entire arterial system of the cat was filled with starch. Investigation showed the presence of good sized functional ductus venosus through which the arterial and venous systems communicated. The individual possessing this peculiarity was, in life, troubled with what is vulgarly called "fits," whatever that may have been in this particular case. I should be loth to admit any relation between "fits" and the presence of a functional ductus venosus without more extended data.

ADDITIONAL NOTES ON IOWA MOLLUSCA.

BY B. SHIMEK.

About five years ago the writer published an annotated list of Iowa Mollusca* under the title "The Mollusca of Eastern Iowa." Material has been secured since by which many of the species have been traced across the entire State, and which also throws much additional light on the synonymy of some of the species.

Without an attempt at a thorough and complete revision of the former list a few notes on species heretofore mentioned are presented, and a number of species which have been collected or recognized in the State since the

former publication, are included. These notes are presented in the following annotated list:

**Family Strepomatidæ.**

Genus Goniobasis.

*G. livescens,* Menke.—In the former list *G. cubicoides,* Anth. is reported on the authority of Prof. Witter. Mr. Keyes also reports it. Since the publication of the name about 100 specimens of a *Goniobasis* which was collected in the Des Moines river, at Humboldt, by Mr. L. B. Elliott, were received. Most of them agree exactly with the description of *G. cubicoides,* but a comparison of the entire set with authenticated specimens of *G. livescens,* Mke. from Michigan, Indiana, and New York leaves no doubt that they are the same. The specimens from Humboldt are, therefore, referred to *G. livescens,* Mke.

**Family Rissoïdæ.**

Genus Pyrgulopsis.

*P. scalariformis,* Wolf.—The identity of *P. mississippiensis,* Call and Pilsbry, reported heretofore, and Wolf’s species have already been established by me.†

**Family Viviparidæ.**

Genus Campeloma.

In the former list three species were admitted: *C. decisum,* Say, *C. subsolidum,* Anth., and *C. rufum.* If we accept Call’s revision of the genus† two other specimens (?) should be admitted, namely *C. integrum,* Say, and *C. obesum,* Lewis. I cannot, however, see any valid reason for recognizing all these “species” and feel like exclaiming with Mr. Simpson: “Why name anything that has neither beginning nor end?” These shells form a series of which the narrower, more elongated *C. subsolidum* and *decisum* form one extreme, *C. integrum* is a form usually intermediate and *C. rufum* and *obesum,* proportionately wide forms, represent the other extreme. Extreme, or “type” forms are apparently distinct, it is true, but there is such a gradual transition from one form to the other that the student who would attempt to separate a large number of specimens soon becomes inextricably tangled. In this connection I would speak with the least assurance of *C. decisum* as it is possible that the Iowa forms which have been variously referred to in this species are merely variations of *C. subsolidum.* *C. subsolidum* and *C. obesum* connect closely by intermediate forms, and *C. integrum* cannot be separated from either satisfactorily.

*C. rufum,* in its extreme development, seems to be very distinct, but in a large series of the form obtained at Cedar Rapids, where I have collected it in the Cedar river during almost every one of the past eleven years, the pink color of the apex and interior of the aperture and the sculpturing of the surface are by no means the reliable characters which they are represented to be, and the form grades insensibly into *C. obesum.* It seems that Mr. Binney’s disposition of these forms‡ is still the best, and that all should

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§Land and Fr. Water Shells of N. Am., part III.
be grouped under *C. decisum*, Say, if that form is a part of the series, or under *C. integrum*, Say, if the former is distinct. Reversed specimens of *C. rufum*, *subsolidum* and *obesum* have been collected.

**Family Zonitidæ.**

**Genus Zonites.**

The Læss fossil which was reported in the former list under the name *Z. limatulus*, Ward with the suggestion that it is probably distinct has since been described by Mr. H. A. Pilsbry, under the name *Z. shimekil*. A large series collected in the Læss of Iowa and Nebraska shows this to be very constant in its characters.

**Family Helicidæ.**

**Genus Vallonia.**

In the former list two forms were reported: *V. pulchella*, Muell, and *V. pulchella costata*, Muell. Dr. Victor Sterki, who has recently published an extensive monograph of the genus recognizes four species among the forms occurring in Iowa. They are:

- *V. Pulchella*, Muell—The large, smooth (ecostate) form with nucleus smooth.

- *V. gracilicosta*, Reinhard—Equally large or larger, but with distinct costæ and nucleus spirally marked with faint ribs or lines.

- *V. parvula*, Sterki—Small; ribs prominent; nucleus with fine revolving lines; body-whorl not descending to aperture above. Lip reflexed.

- *V. perspectiva*, Sterki—Small; ribs prominent; nucleus without lines; body-whorl descending to aperture; lip none, or only slightly expanded.

Of these *V. pulchella* is the form formerly recognized by that name, while the last three were collectively included under the *var costata*, specimens of *gracilicosta* being also mingled with *V. pulchella*.

I have specimens of *V. pulchella* as here restricted from Iowa City and Muscatine.

- *V. gracilicosta*, Reinhard, was collected by me at Eastport, in Fremont county.

- *V. parvula*, Sterki, is the form which was most commonly sent out as *var. costata*. It is very common at Davenport, Muscatine, Iowa City and Eastport. This is clearly a distinct species, not like *var. costata*, as comparisons with European specimens of the latter clearly show. It is not at all difficult to distinguish between this and *V. pulchella*, and the only wonder is that they were ever united.

- *V. perspectiva*, Sterki—Four specimens of this species were sent to Dr. Sterki from Eastport. A microscopic examination of a large number of shells shows that the markings of the nucleus and the deflection of the body-whorl are not always satisfactory characters and it may be necessary to consider *V. perspectiva* a variety of *V. parvula* and perhaps *V. gracilicosta* a variety of *V. pulchella*, unless other characters than those enumerated should determine otherwise.

**Family Pupide.**

Of the species heretofore reported, the following have been found at Eastport, Fremont county: *Pupa armifera*, *contracta*, *pentodon*, *fullox* and *milium*, and *Vertigo ovata*. *Vertigo milium* should have been *Pupa milium*.

and *V. simplex* is *Pupa edentula alticola*, Fugersoll. The following are additional species:

- *Pupa curvidens*, Gld.—Found at Iowa City and Eastport. Rare.
- *Pupa edentula*, Gld.—Two living specimens of this species were found at Iowa City.
- *Pupa procera*, Gld.—This species, which is usually distributed under the name *P. rupicola*, Say, is common in Fremont county at Eastport, and one specimen was found at Iowa City.
- *Pupa holsingeri*, Sterki.—Very common at Iowa City, Davenport (Prof. Sheldon) and Eastport. One specimen from Eastport is reversed.
- *Vertigo tridentata*, Wolf. Rare at Eastport. Not rare at Iowa City. This was reported as *V. gouldi*, Binn.
- *Vertigo bollesiana*, Morse. Iowa City and Eastport. Rare.

**Family Succinidae.**

The form reported as *Succinea higginsi*, Bld. cannot be considered as distinct from *S. ovalis* and should be dropped from the list. The very large form heretofore referred to *S. avara*, which is common in low lands and as a fossil in the Loess, and which sometimes approaches *S. obtliqua* in size, is probably entirely distinct from *S. avara* and all described species. A thorough study of the shells and anatomy of this form will be made as soon as possible in order that this point may be settled.

*Succinea lineata*, W. G. B. should be added to the list. It is common in the Loess westward, and a few bleached though probably recent specimens were found near Hamburg, Fremont county.

**Family Auriculidae.**

*Genus Carychium.*

*C. exiguum* var. exile, H. C. Lea. This slender form is common at Iowa City and Eastport, and probably in all other portions of the State in which *C. exiguum* occurs.

**Family Limnidae.**

*Physa lordi*, reported on the authority of Call, should be dropped from the list. The specimen proved to be a deformed *P. heterostropha*, Say.

*Planorbis albus*, Muell., reported as rare and only in the northern part of the State; is common in “Cedar Lake” at Cedar Rapids.

**Family Cyrenidae.**

*Genus Sphärium.*

Twelve species were reported in the former list, but this number must be cut down. *S. solidulum*, Pr. is without doubt *S. sulcatum*. Extreme forms differ, but a great number of immediate links can easily be found. *S. stamineum*, Con. as reported, were old *S. rhomboideum*. The specimens were named by Call, and included in the list on his authority. Comparison with a series of *S. rhomboideum*, since dredged in the same pond, shows that the shells were old, heavy *S. rhomboideum*.

The true *S. stamineum*, Con. is common at Iowa City, but after an examination of several quarts of specimens I cannot distinguish this from *S. striatum*, and more than that the *S. sulcatum* and *S. striatum* series often approach so close together that it is almost impossible to satisfactorily place some species.

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S. fabulis, as reported, is an extreme form of S. solidum. It should be dropped from the list.

S. partumeium, S. jayanum, and S. sphaericum, as identified by Prof. Witter, also from one series, and are the same species, S. sphaericum being intermediate. Our specimens are not typical S. partumeium, but resemble typical S. jayanum more nearly. If S. partumeium should prove to be a valid species, which is doubtful, then all of our specimens (including S. sphaericum as identified by Prof. Witter) must be referred to S. jayanum, Prime.

This leaves seven species of Sphaericum in the State: S. sulcatum, Lam., S. striaturn, Lam., S. rhomboidum, Say, S. jayanum, Prime, S. transversum, Say, S. secure, Prime, and S. truncatum, Liu.

Mr. Charles R. Keyes, in the list already referred to, also reports the following additional species:

Tridopsis palliata, Say.
Ancylus tardus, Say.
Ammicola orbiculata, Lea.

VARIATION IN THE SUCCINIDÆ OF THE LOESS.

BY B. SHIMEK

The recent species of the genus Succinea are certainly puzzling, but those which are found as fossils in the loess deposits of the Missouri and Mississippi valleys are positively bewildering. The fossil forms belong principally to the avara and obliqua groups, but few specimens belonging to the ovalis group occurring. Without entering into a detailed discussion of the various forms it may be briefly stated that an examination of the specimens, both recent and fossil, which are herewith submitted, will show the following facts:

The three forms which are commonly found in the loess are S. obliqua, Say, S. avara, Say S. lineata, Binn. A careful weighing of the variation in the recent specimens of these species, supplemented by the almost unbroken series of fossil forms, shows that typical S. avara varied through the larger form of the same species to S. obliqua in one direction, with a smaller branch running into S. lineata in another. In other words, I am convinced that however different these species may appear now, they were once the same, the original stock occurring perhaps just before the loess.

The variation in these forms, or in the original form, was not the result of climatic conditions, for all forms often occur in the same deposit.

It is expected that a more complete report on this variation, with proper plates, will be elaborated in the near future.

It may be of interest to note that our small typical fossil, S. avara, is identical with S. oblonga, Drap., from the loess of Germany.