breakwater, I found numerous bright, perfect (dead) specimens of *Calliostoma gemmulatum* Cpr., *Modiola recta* Conr., *Scala hindsii* Cpr., *Siliqua patula* Dixon (small specimens), *Solen rosaceus* Cpr. and *Fissurella volcano* Rve., while the occasional finding of a pretty *Calliostoma gloriosum* Dall, *Erato vitellina* Hds., *Mitromorpha filosa* Cpr. or *Actæon* (*Rictaxis*) *punctocælatus* has marked the day.

During the low tides of the last month (November), alive upon the rocks at White's Point we found a few fine specimens of *Mitra maura* Swains., and *Gadinia reticulata* Sby. The under side of some of the large stones there were covered with *Astyris gausapata* Gld. var. *carinata,* which little animals would move off at such rapid pace that it required lively movements to capture them. With the *Astyris* were a few *Scala Hindsii.*

In the vicinity of Laguna near Three Arches, among *Mytilus californicus* Conr., *Purpura lima* Mart. var. *emarginata* Desh. were very plentiful, some of them larger than I had seen before. There was also one nice living *Cypræa spadicea* Gray. Upon the beach sand were several bright, large specimens of *Trivia solandri* Gray. These were dead, as were all but one of *Muricidea incisa* Brod., which were quite plentiful. *Macron lividus* A. Ad. was there, too, living upon the under side of large stones.

At Catalina on the Main, upon the beach, were several specimens of *Chrysodomus* (*Kellettia*) *Kelletti* Fbs., which had been brought in by fishermen. But the "find" which I appreciated most was that of a "baker's dozen" of living *Semele rupium* Sby., upon the rocks above extreme low tide, at a place about one mile and a half west of Laguna.

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## NOTES ON THE PARVUS GROUP OF UNIONIDÆ AND ITS ALLIES.

BY CHAS. T. SIMPSON.

Mr. R. Ellsworth Call, so well known as an able student of the American *Unionidæ,* has recently published a revision and synonomy of the *Parvus* group of *Unionidæ,*[1] and I wish to call attention to certain points in the paper.

The *Parvus* group is, in general, well characterized, consisting of small Unios, with brownish to blackish epidermis, rayless or feebly-

[1] Proc. Indiana Acad. Science for 1895, pp. 109–119, plates I–VI.

rayed posteriorly, usually somewhat pointed behind, the females distinguished from the males by a well-developed basal swelling, and the beak sculpture consisting of parallel, curved ridges, which are drawn in towards the hinge-line posteriorly, and are more open anteriorly. The cardinals are usually compressed, often torn and reflected upwards, and the nacre is generally brilliant bluish-silvery, becoming richly iridescent behind, but it is sometimes purple. The peculiar beak sculpture, much like that of the *Tetralasmus* group, is one of the best characters when not eroded away.

Mr. Call is right in his criticism on my paper on the *Unionidæ* of Florida, in which I placed *Unio trossulus* Lea and *U. lepidus* Gould in the *Parvus* group. At the time of writing that paper I had carefully examined all of Lea's material, all the general collection of the National Museum, much of B. H. Wright's, Mrs. George Andrews', Wm. A. Marsh's, Rev. A. Dean's and my own collection of Florida and Georgia Unios of this general type, but had not found a specimen old or young that showed the beak sculpture. Recently, in examining some specimens of *U. amygdalum* in Mr. A. G. Wetherby's collection, from Clear Lake, Florida, I noticed that the beak sculpture was perfect, and consisted of a *double loop*, hence they cannot be placed in the *Parvus* group. I may remark, in passing, that having seen Gould's type of *U. lepidus*, I should unhesitatingly pronounce it the same as Lea's *amygdalum*.

Unfortunately, Mr. Barnes' description of *Unio parvus*[2] is very brief and imperfect, and the only figure he gave of it is an outline. Much confusion exists concerning this species, and it is often confounded with *Unio texasensis;* in fact, Mr. Lea himself has placed a lot of specimens of the latter species from northern localities among the *parvus* in his own collection. *Unio texasensis* certainly extends into southern Indiana and Illinois, and well north into Missouri and Kansas. In general, *U. parvus* is smaller than *U. texasensis*, is more inflated and cylindrical, rather more elongated, and has a much more evenly rounded posterior region. The latter is almost always distinctly pointed behind.

I cannot agree with all of Mr. Call's synonomy. I have all of Lea's types of this and related groups before me. *U. marginus* Lea, and *U. cromwelli* Lea, are probably the same, and are, no doubt, members of the *Parvus* group, but are widely different from *U. parvus*, in which he places the former, as they are shorter, less inflated,

[2] Am. Jl. Science and Arts, VI, 1823, p. 174, pl. XIII, fig. 18.

and have a copper-tinted nacre. *U. paulus* Lea and *N. corvinus* Lea are very likely the same species, but I should not place them in the synonomy of *U. parvus* as Mr. Call does.

*U. visicularis* Lea, of which I have before me the two original specimens on which the species was founded, is certainly not *U. parvus*. Both these specimens are dead shells, very badly eroded and in poor condition, but they are nearer to *U. amygdalum* than any of the *Parvus* group, and probably are merely a somewhat heavy, light-brown variety of that species. *Unio singleyanus* is a smooth, shining, yellowish or waxy-brown shell, sometimes tinted and rayed with green, and very different from *U. parvus*. And *U. minor* seems to me to be more nearly related to *U. vesicularis* than to *U. parvus*, under which Mr. Call places it.

*Unio haleianus* Lea is not noticed in this revision of the *Parvus* group, although it should undoubtedly be placed with that assemblage. It is the largest of the species, one of Lea's specimens before me being $2\frac{3}{4}$ inches long by $1\frac{1}{2}$ high, and is nearest to *U. texasensis*, but is a less heavy species.

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## NOTES AND NEWS.

Mexican Land Shells.—Professor T. D. A. Cockerell has sent to me a few land shells collected at San Rafael, Jicaltepec, Vera Cruz, by Professor C. H. T. Townsend. The species are:

*Helicina flavida* Mke. Wonderfully variable in color. Some are uniform yellow with red apex; others uniform reddish; others whitish with the spire red, or whitish below, red above, while some specimens are girt with a reddish band above the periphery, on a whitish ground. The size also varies considerably.

*Glandina?* A species of the *decussatus* group, not adult.

*Volutaxis similaris* Strebel. Somewhat larger than the type, alt. 7 mm.

*Praticolella griseola* Pfr.

*Praticolella ampla* Pfr. This Helix looks a good deal like *similaris* Fér.

*Bulimulus sulphureus* Pfr. Besides the ordinary unicolored form, there is one example with five reddish bands, the umbilical and basal continuous, those above interrupted into squarish spots at irregular intervals. This color-form has not before been noticed.—*H. A. P.*