

also found in Mud Lake, Waukesha Co., Wis. In Miss Winslow's interesting and valuable revision of the *campanulata* group if the name *michiganensis* is used for *rudentis* all of the Michigan varieties will be included, although a new summary will include the true *rudentis* in addition. As the writer has stated elsewhere, the fauna of the small and large lakes of Wisconsin and Michigan appear to have each a facies peculiar to itself. From the limited data at hand on the ecology of *michiganensis* and *davisi* it would appear that the former live in the larger, perhaps clearer small lakes, while the latter live in small, more or less muddy lakes, of shallow depth.

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## NON-MARINE MOLLUSKS OF VOLUSIA COUNTY, FLORIDA

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BY MAXWELL SMITH

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The material which forms the subject of this paper was collected by Sydney B. Holt and the writer in March, 1927. Excursions were made in various directions from DeLand.

No collecting was done in the vicinity of Daytona Beach due to the fact that most of the hammocks have been cleared for real estate development with the result that both fauna and flora are practically destroyed, thru the agency of ax and flame.

### TURTLE MOUND

This is said to be the highest Indian Mound in the state and is composed mostly of oyster shells. It is situated about seven miles south of Coronado Beach on the "island" between the Halifax River and the Atlantic. The approach is first thru a well wooded section and later over a dune region as yet unspoiled by man. The mound is visible some distance away but is most imposing when viewed



from the river. From the placid shore of the river it is only a few minutes' walk to the ocean beach. The top of the mound affords a unique view embracing broad expanses of water, dunes and a fringe of palms. The slopes support a considerable number of plants and bushes with cacti in large groups. Under these live *Polygyra* and other mollusks. At the base of the mound an accumulation of river drift was found to be exceedingly rich in small shells. A quantity of this was brought home and so far has yielded the following species:

*Zonitoides minuscula alachuana* Dall. Named for the county.

*Vitrea dalliana* Pils. Previously reported from Lee, Monroe and Brevard Counties.

*Euconulus fulvus* Drap.

*Helicodiscus parallelus* Say.

*Polygyra septemvolva* Say. Under cacti.

*Gastrocopta pellucida hodeacella* Pils.

*G. contracta* Say.

*Microceramus pontificus* Gld.

*Helicina orbiculata* Say.

*Truncatella bilabiata* Pfr.

#### SHELL PITS NEAR DELAND

Here tons of semi-fossil shells are dug out and used as a top dressing on the minor roads. *Viviparus* and *Ampullaria* are plentiful together with a half dozen or more other genera. Two species are conspicuous by their apparent absence in nearby water:

*Goniobasis catenaria* Say. (*G. papillosa* Anth.) See Pilsbry's notes Naut. 4, 124.

*Physa scalaris* Jay. First noted from the Everglades.

#### STARK GROVE NEAR FATIO

*Euglandina rosea* Fer.

*Polygyra avara* Say. This was described in 1819 from ex-



amples taken in "Fatio's orange grove" on the St. John's River". The name Fatio appears on a tiny freight station on the railroad close to the grove. This habitat, where the type apparently was obtained, is best reached today by motoring to Lake Beresford boat house and then walking down the railroad track to the freight station.

*Polygyra uvulifera* Shutt. Taken alive under half rotted wood close to the St. John's River.

*Drymaeus dormani albidus* Wright. A scarce shell not found elsewhere by us; taken in orange tree cavities close to the ground, also under dead leaves and rubbish in dense shade. It is said to be abundant here in the wet season when it climbs to the tops of the trees.

*Helicodiscus parallelus* Say.

*Zonitoides minuscula* Binney.

NEAR OLD STETSON ESTATE, DELAND

*Succinea floridana* Pils.

*Polygyra uvulifera* Shutt.

LAKE BERESFORD

*Lampsilis vesicularis* Lea.

*Viviparus waltoni* Tryon.

LAKE MONROE AT BENSON SPRINGS (ENTERPRISE)

*Viviparus waltoni* Tryon.

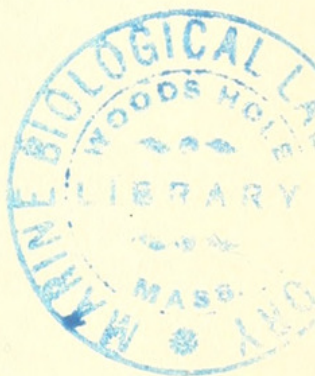
*Ampullaria paludosa* Say.

*Elliptio hinkleyi* Wright.

ST. JOHN'S RIVER NEAR DELAND LANDING

*Planorbis duryi* Weth. Reported from Orange County by C. H. Baker; Rockledge, Brevard County by Nylander.

*P. scalaris* Jay. Young specimens. Known to inhabit Miami River region and Orange County.





## ISLAND IN ST. JOHN'S RIVER NEAR BLUE SPRINGS

*Ampullaria paludosa* Say. Found alive on mud under water hyacinths, mostly young specimens. This was the only colony of living ones that we observed.

*Ferrissia peninsulæ* P. & J. Fresh dead examples abundant in the dry portion of this tiny island.

*Physa cubensis* Pfr. Young.

*Planorbis caribæus* Orb. Young.

*Amnicola* sp. According to Dr. Walker "probably new". This and the *Musculium* will be described later.

*Musculium mearnsi* Sterki. Rather plentiful with the *Ferrissia*, all dead. Description prepared in 1916 from specimens examined by Dr. Sterki at the U. S. National Museum labelled "Head of the St. John's River". The manuscripts will be published shortly. There are two specimens in the Sterki collection from "Gee Creek, Fla." County unknown.

*M.* sp. Apparently a new species detected among the others by Dr. Sterki.

*Eupera singleyi* Pils.

## BLUE SPRINGS

*Succinea effusa* Shutt. Found living on a log, overhanging the crystal stream amidst a scene of indescribable tropic beauty. Here abound mullet, turtles and water moccasins. Alligators are occasionally seen.

*Unio buckleyi* Lea. May have been brought here by fishermen for bait. No doubt lives nearby.

## PONCE DE LEON SPRINGS

*Planorbis glabratus* Say.

*Viviparus waltoni* Tryon.

*Ampullaria paludosa* Say.



Smith, Malcolm A. 1927. "Non-marine mollusks of Volusia County, Florida."  
*The Nautilus* 41, 51–54.

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