

CERTAIN MOLLUSKS OF THE OGEECHEE RIVER, GEORGIA

BY CALVIN GOODRICH

Conrad described and figured *Paludina genicula* in "New Fresh Water Shells of the United States" (1834) from a single shell which he found in Flint River, Georgia. He twice mentioned the angulation of the whorls, and to keep attention upon this fact of angulation he figured the shell from the back, the position in which the feature is most pronounced. On top of this, he chose *genicula* for specific name, one definition of which is "angulated bend."

W. G. Binney, "Land and Fresh-Water Shells of North America" (1865), threw Conrad's species into the synonymy of *Melantho decisa* (Say) on the ground that specimens he had from the type stream "show a gradual series from the rounded whirls of the *decisa* to the angular form of *genicula*, though none of the shells were as well marked as that figured."

Dr. Henry van der Schalie made a molluscan survey of the Ogeechee River of Georgia in 1937. This is a stream paralleling the Savannah River. It is so worn down to such a grade that a part of the upper waters runs through swamps and parts of the middle river expand into areas which locally go by the name of lakes. The tides are felt well up-stream. The commonest gastropod taken is this mollusk that, if a good species, we would know now as *Campeloma geniculum*. Undischarged young are of about two and a quarter whorls in development. They show no more whorl shouldering than do the young of *C. decisum* of the north. But in young that have been discharged this character makes itself manifest toward the end of the second whorl, or at the beginning of the third. The angulation becomes more pronounced with further growth. It is attended with a flattening of the whorls between suture and periphery. Two headwaters lots have indexes of obesity of 71.4 and 73.3 per cent respectively; the two lowermost lots, indexes of 77.3 and 76.3 per cent. The change in relative obesity does not affect the angulation. It is present in all the shells taken from the Ogeechee River, and this is true also of *Campeloma* collected in the tributary Canoochee River. Of about three hundred specimens, only one is sinistral. Some of the shells

contained ova, a few of them juveniles, but apparently the spawning season was nearly over. The month was August.

C. geniculum occurs in the coastal plain from North Carolina to Florida and Louisiana. It appears to be especially common in west Florida and south Alabama, to judge by collections made by H. H. Smith and T. H. Aldrich. Of sixty-six lots at hand, only three are from localities above the Falls Line. These were taken in Abbeville County, S. C., Bartow County, Ga., and Talladega County, Ala. Four lots, aside from the sixty-six, are transitional from *geniculum* to what has been named *C. limum* (Anthony). They are possibly Pilsbry's *C. rufum geniculiforme*. In several Alabama streams, *geniculum* is a headwaters form and *limum* (so named) the down-stream form. We may suppose this to be the case also in Flint River, Ga., whence Conrad obtained his one specimen and Binney his several. That distinctive specific names are warranted where characters come and go, as it were, if of course debatable. Judged on a strictly biological basis, there seems to be excuse enough for Binney's course in throwing *genicula* among synonyms. This is a matter that has probably bedeviled all observers. C. C. Adams solved the problem satisfactorily as regards the genus *Io*. Yet the solution is not everywhere applicable. What is needed is a nomenclatorial term, other than subspecies or form, that can pigeon-hole the varying phases of a mollusk that undergoes changes of character with changes of position in stream.

Other gastropods collected with the *Campeloma* were :

Succinea floridana Pilsbry. A single specimen turned up in dredgings.

Helisoma antrosum (Conrad). A few rather small specimens.

Helisoma trivolvis (Say). Dead specimens, not exceeding seven or eight in number. Probably nowhere plentiful in the basin.

Physa cubensis Pfeiffer. A single specimen appears to be this species.

Physa heterostropha Say. One individual very like shells from Delaware River, the type locality.

Ferrissia rivularis (Say). Two shells among debris of dredgings.

Valvata bicarinata Lea. From two or three to a dozen specimens were taken at virtually all the collecting localities. They are

all alike in having depressed spires and lacking peripheral carinae. Comparison with two subspecies of *bicarinata* of Michigan suggest that the middle western shells are derived out of *tricarinata* rather than *bicarinata*.

Amnicola limosa (Say). Occurs apparently in all parts of the Ogeechee River.

Amnicola olivacea Pilsbry.

Amnicola integra (Say).

Somatogyrus aureus Tryon. This species and the two preceding ones came from one section of the Ogeechee. Bottom was of sand and mud, covered over with twigs and leaves; it was of sufficient stability to permit the growth of patches of water lilies. The locality was above tidal influence. Current speed varied from two to five or six miles per hour.

Goniobasis catenaria postellii (Lea). Found living only in headwaters of the Ogeechee. The shells have the peculiar bullet-like shape of those taken presumably in the lower part of the Altamaha River by James Postell. This tendency toward the cylindrical is not shown in all the specimens or in those collected by Clench and Okkelberg in the Ocmulgee River, a tributary of the Altamaha.

The family Sphaeriidae was represented by:

Sphaerium striatinum (Lamarck). Taken in two places. Seemingly uncommon.

Pisidium compressum Prime. Rare, and occurring with

Pisidium virginicum (Gmelin). Collected in sixteen localities of the Ogeechee and in four places in the Canoochee River. Some of the specimens are very large as compared with examples of the species taken in the Middle West.

Eupera cubensis (Prime). A single, living, well-marked specimen was taken in the lowermost locality of the Ogeechee. The habitat contrasts with Weduska Shoals of Coosa River, Shelby Co., Alabama, where H. H. Smith came upon the species.

The Amnicolidae were kindly identified by Dr. Elmer Berry.



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