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THE PLEUROCERIDAE OF THE ATLANTIC COASTAL
PLAIN*

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THE areas herein embraced under the name of Coastal Plain extend from New England to Texas, but parts of the Alabama and Mississippi basins, though in the plain, are excluded since they have been dealt with in earlier papers. Considered with waters within tidal influence of the ocean are some reaching beyond them into the uplands. The Pleuroceridae of the regions thus defined are of only three genera as compared with seven of the Ohio River system, and one of the three is an intruder or invader out of the St. Lawrence River basin within the years spanned by the Erie Canal of New York. One species of *Goniobasis* which is listed in this paper has been docketed also with trans-Appalachian mollusks, but purely upon conchological grounds. When its anatomy becomes known the species may prove to belong only to one basin, not to two. The distribution of a second species of *Goniobasis* is, as it were, across lots from Georgian streams into creeks of the Alabama River. Otherwise, dispersal is fairly well fixed and demarked.

* This is the fifth paper written in preparation for a molluscan checklist undertaken by the American Malacological Union.

NITOCRIS

Nitocris carinatus (Bruguière), 1792. New York to North Carolina. Credited to Lake Champlain in error by DeKay, 1843.

Synonyms:

<i>Paludina dissimilis</i> Say, 1819	<i>Anculotus dentatus</i> Couthuoy, 1839
<i>Helix subcarinata</i> Wood, 1828	<i>Anculosa variabilis</i> Lea, 1841
<i>Anculotus monodontoïdes</i> Conrad, 1834	<i>Anculotus trivittatus</i> DeKay, 1843
<i>Anculotus nigrescens</i> Conrad, 1834	<i>Anculosa canalifera</i> Anthony, 1860

Nitocris carinatus nickliniatus (Lea), 1841. Hot Springs, Bath County, West Virginia.

Nitocris carinatus corpulentus (Anthony), 1860. Eno River, west of Durham, Durham County, North Carolina; recorded also from South Carolina.

PLEUROCERA

Pleurocera acuta Rafinesque, 1831. Erie Canal and Mohawk River, eastern New York. It was through the canal, seemingly, that the species reached the Coastal Plain waters.

GONIOBASIS

GROUP OF *Goniobasis catenaria*

Goniobasis catenaria (Say), 1822. Springs of eastern South Carolina, possibly in streams southward to the Savannah River. The closely coiled forms are taken as the typical ones.

Synonyms:

‡ <i>Melania subilirata</i> Conrad, 1850
<i>Melania gracillima</i> Anthony, 1860

Goniobasis catenaria dislocata (Ravenel), 1834. Streams of Durham, Burke, Franklin, Madison, and Mecklenburg counties, North Carolina; headstreams in South Carolina; Greenville County, Virginia. The subspecies has several local races; all alike, however, in that the spiral sculpture of *catenaria* typical is absent or nearly so, and the plicate sculpture is much reduced.

Synonyms:

Melania pallescens Lea, 1845 *Goniobasis cinerea* Lea, 1862
Goniobasis abbevillensis Lea, 1862 *Goniobasis spartenburgensis* Lea,
Goniobasis barrettii Lea, 1862 1862 (in part)

Goniobasis catenaria postellii (Lea), 1858. Altamaha, Ogeechee, and Canoochee rivers, and possibly Savannah River, Georgia.

Synonym :

Melania portellii Lea, Reeve, 1861

Goniobasis catenaria inclinans (Lea), 1862. Flint River and tributaries, Georgia.

Goniobasis catenaria cancellata (Say), 1829. Springs and streams of Florida, perhaps in South Georgia.

Synonyms :

Melania Floridensis Reeve, 1860 *Goniobasis Canbyi* Lea, 1862
Melania Etowahensis Lea, Reeve, *Goniobasis Downieana* Lea, 1862
1861 *Goniobasis Couperi* Lea, 1862
Melania papillosa Anthony, Reeve, *Goniobasis posti* Pilsbry and John-
1861 son (Mss ?)

Goniobasis catenaria vanhyningiana (Goodrich), 1921, Lake, Marion, and Orange counties, Florida.

Goniobasis comalensis Pilsbry, 1890. Drainage of Guade-
loupe River, Texas, and if a citation from Bell County, Texas,
is correct, also in the basin of the Brazos River.

Goniobasis comalensis fontinalis Pilsbry and Ferriss, 1906.
Comal Creek and its springs, New Braunfels, Comal County,
Texas.

GROUP OF *Goniobasis boykiniana*

Goniobasis boykiniana (Lea), 1840. Chattahoochee and
Flint rivers, Georgia; Uchee Creek, Alabama. Representative
of a complex which is probably an offshoot of that of *G. cate-
naria*, sculpture and opercula much modified. The species,
subspecies, or forms in a circumscribed area around Columbus,
Georgia, range from highly sculptured phases in the main
Chattahoochee River to nearly unsculptured aspects in tribu-
taries. *G. boykiniana* is both plicate-striate and almost com-

pletely striate. Further, certain individuals have a partially nodulus sculpture of a character unknown elsewhere in the Pleuroceridae.

Synonyms:

Melania catenaria Lea, 1840

?*Melania modesta* Lea, 1847

Melania catenoides Lea, 1842

Goniobasis Hallenbeckii Lea, 1862

Goniobasis boykiniana viennaensis (Lea), 1862. Flint River and creeks of western Georgia; upper Ogeegee River of eastern Georgia; Uchee Creek, Russell County, Alabama.

Synonyms:

?*Melania suturalis* Haldeman, 1840

Goniobasis Elliottii Lea, 1862 (in

?*Trypanostoma tortum* Lea, 1862

part)

Goniobasis boykiniana albanyensis (Lea), 1862. Flint River, Georgia, and tributaries; Uchee Creek, Russell County, Alabama.

Synonym:

Goniobasis viridistriata Lea, 1864

Goniobasis ucheensis Lea, 1862. Uchee and Little Uchee creeks, Russell County, Alabama.

Synonym:

Goniobasis gesneri Lea, 1868

Goniobasis clenchi Goodrich, 1924. Tributaries of Choctawhatchee and Chipola rivers, Alabama and Florida; branches of Conecuh River, Covington County, Alabama.

GROUP OF *Goniobasis carinocostata*

Goniobasis curvicostata (Anthony, Reeve), 1861. Streams of western Georgia and Florida; rivers and creeks of southeastern Alabama. Conchologically, the relationship of the species appears to be with *G. carinocostata* of the Alabama River system, but its distinct characteristics may have developed from quite another stock.

Synonyms:

‡*Melania tripartita* Reeve, 1860

Goniobasis Doolyensis Lea, 1862

Melania densicostata Reeve, 1861

Goniobasis induta Lea, 1862. Flint River basin, Crisp and Dooly counties, Georgia.

GROUP OF *Goniobasis mutabilis*

Goniobasis mutabilis Lea, 1862. Streams of western Georgia and Florida, and southern Alabama; also a few creeks and springs of Alabama within the Alabama River system.

Goniobasis mutabilis timidus, new subspecies

Shell narrowly conic, shining brown; whorls very convex, loosely coiled and feebly banded. Early whorls carinate, plicate. Aperture small, ovate, slightly produced; columella narrow, its outer edge erect; outer lip a little incurved below the suture. Operculum small, delicate, the nucleus near the left margin.

Type: (1) Altitude, 19.00 mm.; diameter, 8 mm., four and a half whorls remaining.

(2) Altitude, 16.50 mm.; diameter, 6 mm., six whorls remaining.

Type locality: Spring two miles northwest of Hawkinsville, Pulaski County, Georgia, in the basin of the Altamaha River. Collected by Mr. W. J. Clench and Dr. Peter Okkelberg, 1929.

Of the paratypes, one has an altitude of 20.50 mm., a diameter of 6.25 mm., eight whorls uneroded. In a lot of twenty-four, twelve are with dim color bands. Seven have three to four of these revolving stripes, five no more than one.

Goniobasis taitiana (Lea), 1841. Branch of Sepulga River, Conecuh County, Alabama; small streams of Alabama River system, Sumpter, Marengo, Monroe, and Wilcox counties, Alabama.

Synonyms:

Melania laevis Lea, 1842

Melania Leaii Brot, 1862

Melania laevigata Lea, 1842

GROUP OF *Goniobasis virginica*

Goniobasis virginica (Gmelin), 1790. Connecticut River, Massachusetts and Connecticut, to Virginia; also North Caro-

lina if the locality given by Anthony for *M. cingenda* is correct; westward through the Erie Canal to Monroe County, New York, in the Great Lakes basin.

Synonyms:

<i>Melania multilineata</i> Say, 1822	<i>Melania buddii</i> Lea, 1845
<i>Melania auriscalpium</i> Menke, 1830	<i>Melania inempta</i> Anthony, 1850
<i>Melania curta</i> Menke, 1830	<i>Melania cingenda</i> Anthony, 1866
<i>Melania fasciata</i> Menke, 1830	

Goniobasis symmetrica (Haldeman), 1841. Southern Virginia, North Carolina.

Synonym:

Goniobasis Catawboea Haldeman, 1865

Goniobasis proxima (Say), 1825. Highlands of North and South Carolina. Trans-Appalachian forms can be traced to the group of *G. simplex*. It is possible that those within what is here defined as the Coastal Plain are derived out of *G. symmetrica*.

Synonym of eastern *G. proxima*:

Melania carinata Ravenel, 1834

GROUP OF *Goniobasis livescens*

Goniobasis livescens (Menke), 1830. An invader of Coastal Plain waters by way of the Erie Canal. Reported by Letson from the Hudson River.

Pilsbry¹ has established the genus *Lithasiopsis* for two species of fresh-water shells of the Panuco River system, eastern Mexico, which can be considered as within the Atlantic Coastal Plain. He believed them southward extensions of the Pleuroceridae. Examples I have seen bear resemblances to the Central American genus *Pachychilus* and have opercula characteristic of it. The two species are *L. Hinkleyi* and *Mexicanus*.

¹H. A. Pilsbry, "A New Mexican Genus of Pleuroceratidae," *Proc. Malacological Soc. London*, 9 (1910): 47-50.

