

TYPE LOCALITY OF *UNIO PUMILUS* LEA, 1838 (UNIONIDAE)

Samuel L. H. Fuller
Department of Limnology
Academy of Natural Sciences of Philadelphia
Philadelphia, Pa. 19103

ABSTRACT

A method for verifying the synonymies of Fusconaia masoni (Conrad 1834) and Lexingtonia subplana (Conrad 1837) is discussed. The type locality of Unio pumilus Lea 1838 is corrected from the Neuse River system to the Cape Fear River system (both in North Carolina). U. pumilus is a synonym of F. masoni, newly recorded from the Cape Fear River.

The occurrence of a member of the primitive unionid genus *Fusconaia* Simpson 1900 in the Savannah River system was recorded by Fuller (1971), who identified the species as *masoni* Conrad 1834, originally described as a *Unio* from the same river system. Insofar as *U. masoni* appears to be the earliest available name for this species, there is no problem in accepting the combination *F. masoni* (Conrad, 1834). This species should not be confused

with the conchologically very similar *U. subplanus* Conrad 1837, the type species of the genus *Lexingtonia* Ortmann 1914. The distinctiveness of *subplana* has been verified on anatomical ground. Furthermore, it is apparently limited to the upper James River (Ortmann, 1914).

It will be impossible to construct the correct synonymies of *Fusconaia masoni* and *Lexingtonia subplana* until their ranges are fully understood: the

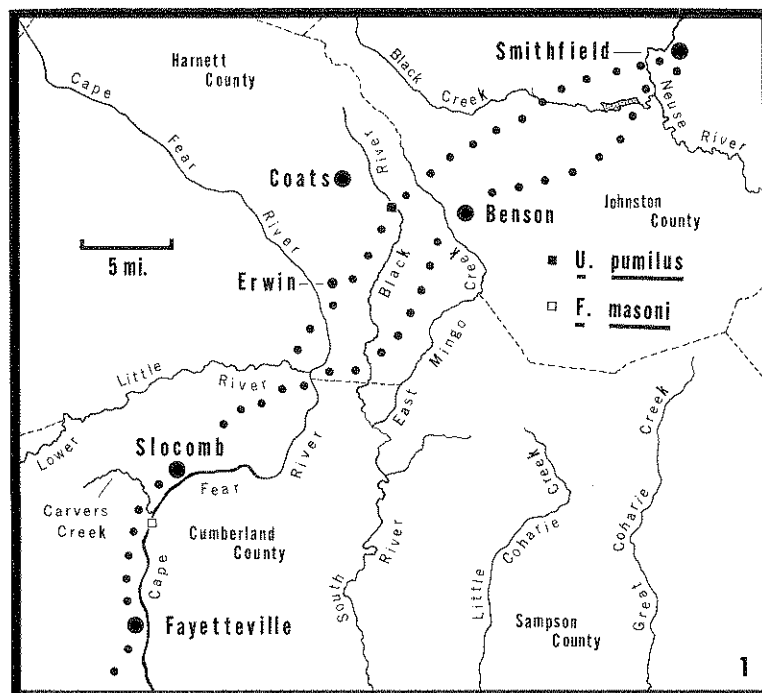


Fig. 1. Known distribution of *Fusconaia masoni* (Conrad 1834) in the Cape Fear River system of North Carolina, with the type locality of *Unio pumilus* Lea 1838. Dotted lines represent routes between Smithfield and Fayetteville available to Isaac Lea in 1827.

type specimens of the several relevant taxa are devoid of beak sculpture and soft parts, which are the only discriminants between these two genera (Ortmann, 1914). Those taxa which were described from areas where only one of these species proves to occur can justifiably be assigned to synonymy; some of those from areas where the two species prove sympatric may have to be considered *nomina dubia*. In order to apply such criteria, one must know the type localities in question.

One of these taxa is *Unio pumilus* Lea, 1838, whose type locality was cited by Johnson (1970: 301) as in the Neuse River system of North Carolina, whereas the adjacent Cape Fear River system is correct. The point is of some importance because I have *Fusconaia masoni* from the Cape Fear River: thus *Unio pumilus* falls within that species' range.

In describing *Unio pumilus*, Isaac Lea (1838: 23) wrote: "A single individual of this species was found by me in 1827, in crossing the Black River, on the road to Fayetteville from Smithfield." Contemporary maps of North Carolina show that in 1808 there was a single road connecting these towns and that a second had been constructed by 1833 (Cumming, 1966: pls. 9-10). The earlier road crossed the Black River at a point in the modern Harnett County about five miles northeast of Erwin and about four miles east-southeast of Coats (Fig. 1). The crossing of the later route was about three miles southeast of Erwin, some 10 river miles downstream of the original crossing.

These points cannot be fixed with precision because modern roads do not necessarily follow their original courses and because of the difficulty in reconciling early and modern cartography. Nonetheless, the type locality of *Unio pumilus* definitely is somewhere between these two points as approximately defined. It is doubtless at or near the upstream point because the later, more circuitous route (Fig. 1) was less likely to be used in public transportation; because Cumming's (1966) post-1833 maps do not show this road (which suggests its relative unimportance), and because Lea mentioned only "the" road from Smithfield to Fayetteville.

On both early and modern maps is shown a Black Creek in the Neuse River system, which flows subparallel to Black River immediately to the southwest of Smithfield. Lea had to cross both streams on his 1827 journey (Fig. 1). Their nominal similarity misled Johnson (1970: 301), who thus amended the type

locality of *Unio pumilus*: "Black River [a tributary of the Neuse River] on the road to Fayetteville from Smithfield [=about 10 mi. W of Benson, Johnston Co.], North Carolina." The type locality is (about five miles) west of Benson, but this point is now in Harnett County, and Black River is in the Cape Fear River system.

This somewhat confusing situation is complicated by the existence in this general area of another Black River, also a tributary of the Cape Fear. This stream is created by the confluence of Six Run and Great Coharie Creeks, whose headwaters rise a few miles south of Smithfield, but can be traversed on only the most devious route to Fayetteville (Fig. 1). Moreover, even Cumming's (1966) earlier maps clearly distinguish between this Black River and the streams "Six Runs" and "Great Cohera" or "Big Cohary." Thus no stream in this drainage could have been nominally or geographically confused by Lea with the Black River he crossed in 1827.

In view of all these considerations, it seems best to restrict the type locality of *Unio pumilus* to: Black River [Cape Fear River system: South River drainage], on the road to Fayetteville from Smithfield [=about 5 mi. NE Erwin and about 4 mi. ESE Coats, Harnett Co.], North Carolina.

Thanks are due J. B. Post (Free Library, Philadelphia) and W. F. Caddell, Jr. (North Carolina State Highway Commission) for aid in locating early and modern maps of portions of North Carolina and to R. T. Abbott for a critical reading of the manuscript.

LITERATURE CITED

- Cumming, W. P. 1966. North Carolina in Maps. State Department of Archives and History, Raleigh. Pp. viii + 1-36, pls. 1-15.
- Fuller, S. L. H. 1971. A Brief Field Guide to the Fresh-Water Mussels (Mollusca: Bivalvia: Unionacea) of the Savannah River System. *ASB Bulletin* 18(4): 137-146, text figs. 1-14, 1 pl.
- Johnson, R. I. 1970. The Systematics and Zoogeography of the Unionidae (Mollusca: Bivalvia) of the Southern Atlantic Slope Region. *Bulletin of the Museum of Comparative Zoology* 140(6): 263-450, tables 1-4, text figs. 1-5, pls. 1-22.
- Lea, I. 1838. Descriptions of New Freshwater and Land Shells. *Transactions of the American Philosophical Society (N. S.)*, 6(1): 1-154, pls. 1-24.
- Ortmann, A. E. 1914. Studies in Naiades [Part 3.]. *The Nautilus* 28 (3): 28-34.