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Gastropod and Sphaeriacean Clam Records for Streams West of the Kentucky River Drainage, Kentucky

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ABSTRACT

One genus and 3 species of sphaeriid clams and 6 families, 12 genera and 23 species of aquatic snails are reported from the Tradewater, Tennessee and Green river systems and from some small tributaries of the Ohio River in Kentucky.

INTRODUCTION

During our work on the rare and endangered species of Kentucky (1), it became obvious that many sections of Kentucky were poorly represented in the literature on aquatic snails and fingernail clams. Because of this, we recently generated a series of papers (2, 3, 4, 5) designed to alleviate the lack of information in those 2 groups of conspicuous aquatic organisms. This contribution, a continuation of that series, treats records gleaned from drainages west of the Kentucky River basin.

COLLECTING SITES

In the annotated list of species, collecting sites are indicated by the numbers listed below; the figures in parentheses indicate the number of specimens collected at each site.

1. Smith Creek at KSR 696, Clinton County, Cumberland River drainage; 13 June 1980.

Green River Drainage

2. Little Barren River at US 68, Green County; 6 May 1977.

3. Fallen Timbers Creek at SR 90, Barren County; 13 March 1974.

4. Small swampy creek at the junction of US 127 and SR 70, Casey County; 27 October 1979.

5. Green River at Butler-Warren county line, SR 195; 30 September 1980.

6. Green River at Mumfordsville, Hart County; 16 July 1968.

7. Pond, 1.4 km east of Maysville, Mason County; 13 October 1980.

8. Rough River at Lock One, Ohio County; 26 August 1980.

9. North Fork of the Rough River at SR 690, Breckinridge County; 15 April 1970.

10. Green River at Greensburg, Green County; 6 May 1967.

11. Wolf Lick Creek, SR 107, Logan County; 19 April 1970.

12. Sinking Creek, SR 79, Breckinridge County; 18 April 1970.

13. Big Slough, SR 54, Grayson County; 29 July 1980.

14. Cave Springs, Edmonson County; 30 July 1981.

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15. Crane Pond, 1.5 km east of Green River Parkway, Daviess County; 22 July 1980.

16. Rockhouse Slough, Ohio County; 25 September 1980.

17. Muddy Creek at US 231, Ohio County; 9 September 1980.

18. Mud River at Muhlenberg-Todd county line; 23 September 1980.

Salt River Drainage

19. Otter Creek at US 60, Meade County; 11 October 1980.

20. Chaplin River at US 68, Boyle County; 6 September 1980.

21. Small creek, 9.4 km south of Shepardsville, SR 480, Bullitt County; 14 April 1966.

22. McCowans Pond, 1.6 km east of US 121, Mercer County; 10 July 1966.

23. Salt River near Shepardsville, Bullitt County; 11 October 1980.

24. Rolling Fork of Salt River at SR 527, Marion County; 13 October 1980.

25. Salt River at SR 208, Marion County; 4 October 1980.

Tradewater Drainage

26. Flat Creek just above mouth, Hopkins County; 6 August 1980.

Tennessee River Drainage

27. Kentucky Lake, Land Between the Lakes, 2.4 km west of Golden Pond, U.S. Route 68, Lyon County; 14 March 1981.

Ohio River Drainage

28. Ohio River opposite Portsmouth, Ohio, in Greenup County, Kentucky; 9 September 1980.

29. Beargrass Creek near mouth, Jefferson County; 11 September 1980.

30. Small unnamed creek, muddy banks, Cherokee Park, Louisville, Jefferson County; 13 November 1980.

31. Small swamp just west of Warden's Slough, Union County; 17 July 1980.

32. Richland Slough, Henderson County; 24 July 1980.

33. Bee Creek at SR 641, 0.7 km north of Murray, Calloway County (Clarks River); 3 December 1965.

ANNOTATED LIST

Voucher specimens of all species reported herein are in the Eastern Kentucky University Museum.

SPHAERIIDAE

Sphaerium fabale Prime

Collecting sites: 9 (1).

This habitat was muddy gravel and sand at the edge of a slow riffle.

Sphaerium similis (Say)

Collecting sites: 9 (2).

This heavy shelled species is adapted for life in backwaters and lakes with sandy, vegetated bottoms. It is mostly associated with streams in englacial parts of America (6). However, the Green River was a refugium for northern species during Pleistocene times (7) so it is not surprising to find residual populations of species such as this one.

Sphaerium striatinum (Lamarck)

Collecting sites: 11 (5), 12 (2).

This is the most common stream sphaeriid in Kentucky.

PLEUROCERIDAE

Our collections contained representatives of 3 genera and 10 species of this taxonomically confusing family.

Lithasia verrucosa (Rafinesque)

Collecting sites: 27 (4).

This species is correctly considered as Endangered in Kentucky (1) and is being considered for federal listing (8).

Lithasia obovata (Say)

Collecting sites: 5 (1), 6 (9), 12 (1), 18 (2), 23 (14), 24 (8).

Lithasia obovata is listed as of Special Concern in Kentucky (1). However, in view of the large populations of the species in the Green, Rough, and Salt rivers, it probably should be delisted.

Pleurocera acuta Rafinesque

Collecting sites: 1 (2), 6 (1), 23 (5), 28 (1).

An uncommon species in the Kentucky River drainage (3, 5) and listed as of Special Concern in Kentucky (1), *P. acuta* appears to be thriving in the Green and Salt rivers.

Pleurocera canaliculatum (Say)

Collecting sites: 6 (6), 23 (5), 27 (2).

This species is likewise of Special Concern (1), particularly in the Kentucky River drainage.

Pleurocera alveare (Conrad)

Collecting sites: 3 (2).

There is a thriving community of this species in Fallen Timbers Creek.

Goniobasis semicarinata (Say)

Collecting sites: 21 (92), 24 (21), 25 (30), 29 (5).

This is the most common pleurocerid throughout the Kentucky River drainage (4) and, as indicated above, produces at least some populations in Salt River. It has been recently reported from the Little South Fork of the Cumberland River (5). The population discovered in Beargrass Creek in Jefferson County (Station 29), a tributary of the Ohio River, is an interesting one in relation to 2 sites from the Green River, Kentucky, and the Big Blue River, Indiana (9, 10), emphasizing the importance of the Ohio River and smaller tributaries that possibly functioned in tributary hopping during re-expansion migrations in post-glacial times.

Goniobasis costifera (Haldeman)

Collecting sites: 5 (1), 11 (19), 14 (9), 18 (11).

To our knowledge, this species has heretofore not been reported from Tennessee.

Goniobasis laqueata (Say).

Collecting sites: 2 (3), 3 (3), 9 (26), 12 (57).

This is the characteristic *Goniobasis* of the Middle and Lower Green River and its tributaries (9). It was the dominant species present in the Rough River (stations 9 and 12).

Goniobasis curreyana (Lea)

Collecting sites: 10 (1), 14 (4), 19 (2).

Bickel (11) also reported specimens from Otter Creek (near our Station 19) and suggested that the species would probably be found in other parts of the Green River. Our collections corroborate his prognostications.

VIVIPARIDAE

The principal references to this family were Clench (12), Clench and Fuller (13), and Clench and Turner (14).

Viviparus georgianus Lea

Collecting sites: 8 (8).

These are some of the few records for this large operculate from Kentucky.

HYDROBIIDAE

A very poorly understood family in Kentucky. Our collections contained specimens of one amphibious species.

Pomatiopsis cincinnatiensis (Lea)

Collecting sites: 30 (7).

Our specimens closely resemble those of van der Schalie and Dundee (15). The same authors (16) reported this species from a site in the Upper Cumberland River in Kentucky, and there are few additional known sites in the state.

LYMNAEIDAE

Our generic and species concept in this family follows Hubendick (17, 18). Three species are reported.

Lymnaea humilis Say

Collecting sites: 7 (2).

Lymnaea humilis is a highly variable species that is found in both standing and slowly running water.

Lymnaea palustris (Müller)

Collecting sites: 31 (1).

There are very few records for this species in Kentucky, and the ecology is poorly understood. It is often associated with bodies of water frequented by migratory birds.

Lymnaea (Pseudosuccinea) columella (Say)

Collecting sites: 4 (2), 7 (2), 16 (2).

Found mostly in stagnate ponds and backwaters, this snail is often heavily laden with fluke larvae.

PHYSIDAE

One of the most confusing and variable groups of aquatic snails in North America, the Physidae is represented in Kentucky by the genus *Physa*. Until the family is thoroughly studied and revised, any

specific identification is tentative, as are the 4 species reported here, based entirely upon shell features.

Physa integra Haldeman

Collecting sites: 13 (4), 15 (3), 22 (8), 23 (1), 32 (7), 33 (35).

Typically with long spires and inflated body whorls, *Physa integra* is often found in flowing waters, although it also occupies backwaters and lentic waters.

Physa virgata Gould

Collecting sites: 31 (18).

The shell is usually slender with a long spire and a short, narrow aperture. The habitat is usually well-vegetated standing waters over mud bottoms.

Physa heterostropha (Say)

Collecting sites: 20 (1).

Physa heterostropha is a rather squat species with an inflated body whorl, a short spire, and a capacious, elongated aperture.

Physa gyrina Say

Collecting sites: 4 (5), 7 (1), 15 (2), 31 (1).

ANCYLOPLANORBIDAE

We follow Hubendick (17) in combining the Planorbidae and Ancyliidae. Five genera and 6 species are reported here.

Ferrissia rivularis (Say)

Collecting sites: 24 (1), 25 (1).

Because of the clandestine habitat on stones, pelecypod valves, snail shells, and other objects in lotic situations, this and other members of the Tribe Physastrini are often overlooked in general collecting. Hence, published records for the Kentucky fauna are few.

Laevapex fuscus (C. B. Adams)

Collecting sites: 5 (2), 16 (5).

Mostly a lentic species, this snail is often found in backwaters on submerged limbs and rocks.

Gyraulus parvus (Say)

Collecting sites: 26 (2).

The scanty published Kentucky records for this and other minute Planorbinae reflect inadequate collecting rather than scarcity.

Planorbula (Menetus) sampsoni (Ancey)

Collecting sites: 17 (3).

This is one of three reported sites for this species in Kentucky. We follow Hubendick (17) in utilizing *Planorbula* rather than *Menetus*.

Helisoma trivolvis (Say)

Collecting sites: 4 (25), 11 (1), 31 (17).

Found in both lentic and lotic waters, *H. trivolvis* occurs statewide, as does the next species.

Helisoma anceps (Menke)

Collecting sites: 12 (2).

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Freshwater Naiads (Mussels) (Pelecypoda: Bivalvia) of Slate Creek, A Tributary of the Licking River, Kentucky

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ABSTRACT

During the summer and fall of 1981, collections of freshwater naiads (mussels) were made from 6 sites along Slate Creek, a tributary of the Licking River. Nineteen species of naiads were found. Two species, *Fusconaia maculata* and *Epioblasma triquetra*, are currently considered endangered, threatened, or rare in Kentucky. *Fusconaia maculata* is a rather rare shell in Slate Creek, but *Epioblasma triquetra* was extremely abundant throughout the stream. All other species reported are commonly found throughout Kentucky.

Slate Creek, a tributary of the South Fork of Licking River, is a rather short (approximate length 40 km) eastcentral Kentucky stream, but one which has a rich and diverse naiad fauna. The stream originates in the rolling hill region of Montgomery County, Kentucky approximately 12.8 km SE of Mount Sterling and meanders through Bath County to its confluence with the South Fork of the Licking River ca. 9.6 km E of Owingsville. Slate Creek rarely exceeds 2 m in depth and 10 m in width. The substrate is sand and cobble with an occasional stretch of ex-

posed bedrock. The water quality is quite good as no industries or urban centers are located within the drainage.

During the summer and fall of 1981, collections of freshwater naiads (mussels) were made at irregular intervals from 6 stream sites, mostly by picking in shallow waters (Table 1). Other records were derived from bank shell debris. No live specimens were taken when fresh dead material of equivalent species could be found and used as voucher specimens. Reference specimens are housed in the Marshall University Malacological Col-



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