

## RECENT MOLLUSCA OF ELLSWORTH COUNTY, KANSAS\*

BARRY B. MILLER\*\* AND CLAUDE W. HIBBARD\*\*\*

## ABSTRACT

Thirty-nine species of Mollusca were identified from collections made during 1970 and 1971. Twenty-three of these species represent new records for Ellsworth County. Our material from Ellsworth County and west-central Kansas suggests that a fairly diverse unionid fauna extends farther westward into the state than was previously suspected.

## INTRODUCTION

One important aspect of Pleistocene malacological studies involves the reconstruction of paleoclimates. These investigations require accurate data on Recent molluscan distributions to serve as a basis for interpretation of fossil assemblages. To obtain these data the paleontologist must frequently make collections of the Recent fauna in conjunction with the acquisition of fossil materials. During the summer months of 1970 and 1971 23

localities were sampled (Figure 1; Table 1) to provide data for interpreting the fossil Mollusca recovered from the White Construction Company, Sand and Gravel Pit at Kanopolis, Ellsworth County, Kansas. The object of this report is to provide information on the natural living molluscan fauna of this area based on these 1970-71 collections. These materials are housed in the collections of the Department of Geology, Kent State University, and University of Michigan Museum of Zoology.

## DISCUSSION

Thirty-nine different kinds of molluscs were identified from these collections (Table 2), and include 13 species of unionid mussels, four species of sphaeriids, 17 species of terrestrial snails, and five species of aquatic snails. Although some of these species have been reported from

\* Department of Geology, Kent State University, Contribution number 76.

\*\* Department of Geology, Kent State University.

\*\*\* Museum of Paleontology, University of Michigan, Ann Arbor, Michigan 48104

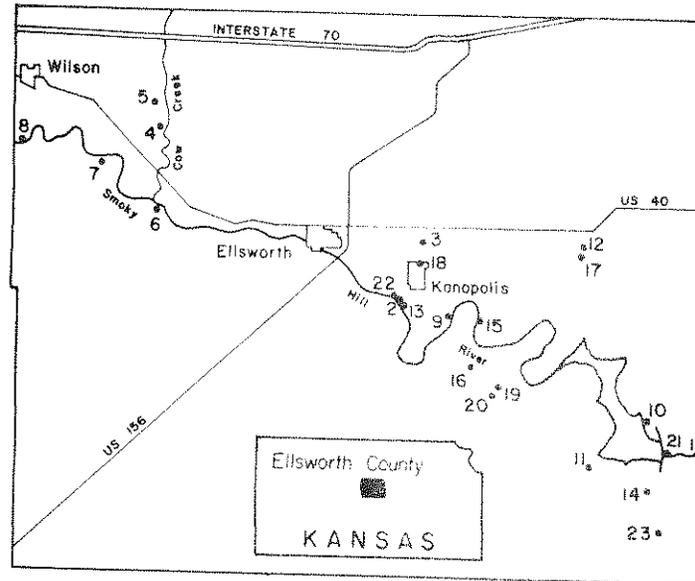


FIGURE 1. Map showing distribution of Recent mollusc collection localities in Ellsworth County, Kansas.

counties farther to the west (cf. Leonard, 1959; Murray and Leonard, 1962), 23 of these species represent new records for Ellsworth County. As far as we can determine, the Ellsworth County records of *Eucnulus chersinus*, *Fusconaia flava*, *Gastrocopta corticaria*, *Lampsilis siliquoidea*, *Nesovitrea indentata*, *Quadrula pustulosa*, and *Tritogonia verrucosa* now represent the westernmost limits for these species in the state. *Gastrocopta armifera* and *G. contracta* are the two most commonly encountered species both in occurrence at different localities and in terms of absolute numbers within our collections. In contrast, *E. chersinus*, *Fossaria* cf. *dalli* and *S. verrucosa* are represented in our collections by single specimens.

The Ellsworth County collections, together with other materials on hand from west-central Kansas, suggest that much about the unionid fauna of the state remains almost unknown in spite of the studies by Scammon (1906) and Murray and Leonard (1962) on this group. Our collections contain specimens of *Anodontoides ferussacianus* from the Smoky Hill River in both Ellsworth and Ellis counties, as well as

*Quadrula quadrula*, *Leptodea fragilis*, and *L. laevissima* from the Smoky Hill River in Ellsworth County, and the Arkansas River, near Great Bend, in Barton County.

*Gastrocopta corticaria* showed a rather erratic distribution pattern within the county. The species was only collected at locality 20 (Table 1), during June of 1971. These specimens were alive and constituted the most abundant species (43 individuals) from this locality. Collections made from this same general area in October, 1970 and July, 1971 produced no individuals of this species.

We are aware of no fossil records of the species from within the state which indicate that it was at one time more widespread. *G. corticaria* may actually be in the process of spreading westward in Kansas. Franzen and Leonard (1947) only record the species in Cherokee, Wyandotte, and Douglas counties. Leonard (1959: 178) places it in these counties and extends it westward to Marshall County. Our collection from locality 20 indicates that the species now occurs about 130 miles southwest of the nearest previous reported occurrence in Marshall County. We are not

certain if this apparent extension of range into the Great Plains of Kansas is real or simply the result of more intensive collecting in this area.

#### CONCLUSIONS

1. Our collections record 39 living species of Mollusca in Ellsworth County, 23 of which represent new records for the county.

2. Thirteen species of unionid mussels were collected from the Smoky Hill River and its tributaries, within the county. The fauna is the same as that found in the Kansas River drainage further to the east in the Central Lowlands, but the diversity is reduced.

3. After almost 100 years of collecting and study, knowledge of the distribution of living molluscs in Kansas must still be considered inadequate. Our unionid material from west-central Kansas indicates that the absence of records from this area is probably due in large part to the lack of any serious effort to collect.

#### ACKNOWLEDGMENTS

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TABLE 1. REGISTER OF LOCALITIES. The species collected from a locality are indicated by the numerals within parentheses. These numbers correspond to those preceding the species names in Table 2. The four and/or six digit numbers following parentheses are respectively, Kent State University and the University of Michigan Museum of Zoology catalog numbers.

1. NE $\frac{1}{4}$  SE $\frac{1}{4}$  section 1, T. 17 S., R. 6 W.; sand and gravel bars along Smoky Hill River. (2) 231521; (7) 231534; (22) 231530; (23) 231531; (24) 231535; (30) 231533; (31) 231532.
2. SE $\frac{1}{4}$  SE $\frac{1}{4}$  section 35, T. 15 S., R. 8 W.; Smoky Hill River, southwest of Kanopolis, near old Fort Ellsworth. (23) 231529.
3. NE $\frac{1}{4}$  section 24, T. 15 S., R. 8 W.; north of Kanopolis in tributary to Spring Creek. (37) 231528.
4. SE $\frac{1}{4}$  section 31, T. 14 S., R. 9 W.; Cow Creek. (3) 231525; (6) 2263; (15) 2264; (18) 2265; (19) 2266; (21) 231523; (24) 231526; (26) 2267; (27) 2268; (28) 2269; (29) 2322; (32) 2270; (33) 2271; (35) 2272; (37) 231524, 231527.
5. S $\frac{1}{4}$  section 30, T. 14 S., R. 9 W.; tributary to Cow Creek. (15) 2313; (26) 2314; (27) 2315; (35) 2316; (37) 231522.
6. Section 7, T. 15 S., R. 9 W.; just south of Black Wolf, from sandbars in Smoky Hill River. (1) 231513; (2) 231515; (7) 231519; (20) 231518; (23) 231516; (24) 231512; (31) 231514; (32) 231508; (36) 231520; (37) 231517.
7. NW $\frac{1}{4}$  section 2 and NE $\frac{1}{4}$  section 3, T. 15 S., R. 10 W.; from gravel bars in Smoky Hill River. (1) 231505; (2) 231506; (22) 231510; (23) 231511; (24) 231507; (31) 231509; (37) 231574.
8. SW $\frac{1}{4}$  section 31, T. 14 S., R. 10 W.; south of Wilson; from gravel bar in Smoky Hill River. (1) 231503; (23) 231502; (37) 231504.
9. Section 6, T. 16 S., R. 7 W.; near bridge over Smoky Hill River. (37) 231501.
10. SE $\frac{1}{4}$  section 21, T. 16 S., R. 6 W.; woodlot behind picnic area across the road from park headquarters, Kanopolis State Park. (4) 2312; (9) 2310; (35) 2309; (39) 2311.
11. Just north of section line in SW $\frac{1}{4}$  section 6, T. 17 S., R. 6 W.; along east side of Bluff Creek and south of road. (8) 2278, 2283, 231536; (9) 2282, 231537, 231538; (12) 2280; (14) 231539, 231540; (34) 2284, 231541, 231542; (35) 2279, 231543; (38) 2254, 231544; (39) 2281, 231545.

12. SE¼ SW¼ section 19, T. 15 S., R. 6 W.; west side of Alum Creek, north of road, Mushroom Rock State Park. (8) 2244, 2245; (9) 2246, 2247; (10) 2248; (12) 2249, 231570; (13) 2251; (16) 2252; (17) 2253, 231571; (26) 2255; (29) 2256; (35) 2257; (38) 2258, 2259; (39) 2260, 2261.
13. SW corner of SW¼ section 36, T. 15 S., R. 8 W. (8) 2273; (9) 2296; (17) 2274; (34) 2275; (38) 2276; (39) 2277.
14. SW¼ SE¼ section 10, T. 17 S., R. 6 W.; first old stock pond on south side of road 0.4 mile west of route 141. (26) 2262.
15. East side of NW¼ section 4, T. 16 S., R. 7 W. (8) 2321; (26) 2319; (34) 2320.
16. NW¼ NW¼ section 16, T. 16 S., R. 7 W.; along creek on east side of dirt road. (8) 2306; (11) 2308; (13) 2306; (16) 2307; (35) 2304.
17. NE¼ NW¼ section 30, T. 15 S., R. 6 W.; east side of Alum Creek, joining Mushroom Rock State Park. (4) 231546, 231547; (8) 2250, 231548; (9) 231549, 231550; (11) 231551; (29) 231552; (35) 231553, 231554; (38) 231555, 231556.
18. SW¼ NE¼ section 25, T. 15 S., R. 8 W.; pond at White Sand and Gravel Pit. (19) 2318; (26) 2317.
19. NE corner of NW¼ SW¼ section 28, T. 16 S., R. 7 W.; east side of Thompson Creek. (4) 231557; (8) 231558; (9) 231559; (25) 231560; (34) 231561; (35) 231573; (38) 231562; (39) 231563.
20. SE¼ SE¼ section 28, T. 16 S., R. 7 W. (5) 2298; (8) 2299; (25) 2301; (29) 2297; (34) 2302; (35) 2303; (39) 2300.
21. SW¼ SW¼ section 35, T. 16 S., R. 6 W.; woods along south side of Sand Creek, below Kanopolis Dam. (4) 2290; (8) 2454; (9) 2293; (11) 2291; (13) 2285; (14) 2289; (16) 2287; (29) 2286; (34) 2292; (35) 2288; (38) 2294; (39) 2295.
22. SE corner of section 35, T. 15 S., R. 8 W.; east bank of Smoky Hill River, under logs. (8) 231564; (34) 231565; (39) 231566.
23. Center of NE¼ section 22, T. 17 S., R. 6 W.; old Griggs farm just south across spring runoff, under cottonwood log. (8) 231567; (35) 231568; (39) 231569.

TABLE 2. List of molluscs collected from 23 localities in Ellsworth County, Kansas. The numbers in parentheses after the name are the localities from which the species was collected.

1. *Anodonta grandis* (6, 7, 8)
2. *Anodontooides ferussacianus* (1, 6, 7)
3. *Carunculina parva* (4)
4. *Deroceas laevis* (10, 17, 19, 21)
5. *Euconulus chersinus* (20)
6. *Fossaria* cf. *F. dalli* (4)
7. *Fusconaia flava* (1, 6)
8. *Gastrocopta armifera* (11, 12, 13, 15, 16, 17, 19, 20, 21, 22, 23)
9. *Gastrocopta contracta* (10, 11, 12, 13, 17, 19, 21)
10. *Gastrocopta corticaria* (12)
11. *Gastrocopta cristata* (16, 17, 21)
12. *Gastrocopta holzingeri* (11, 12)
13. *Gastrocopta procera* (12, 16, 21)
14. *Gastrocopta tappaniana* (11, 21)
15. *Cyrculus parvus* (4, 5)
16. *Hawaitia minuscula* (12, 16, 21)
17. *Helicodiscus parallelus* (12, 13)
18. *Helisoma anceps* (4)
19. *Helisoma trivolvis* (4, 18)
20. *Lampsilis anodontooides* (6)
21. *Lampsilis siliquoidea* (4) missing.
22. *Leptodea fragilis* (1, 7)
23. *Leptodea laevis* (1, 2, 6, 7, 8)
24. *Ligumia subrostrata* (1, 4, 6, 7)
25. *Nesovitreca indentata* (19, 20)
26. *Physa anatina* (4, 5, 12, 14, 15, 18)
27. *Pisidium casertanum* (4, 5)
28. *Pisidium compressum* (4)
29. *Pupoides albilabris* (4, 12, 17, 20, 21)
30. *Quadrula pustulosa* (1)
31. *Quadrula quadrula* (1, 6, 7)
32. *Sphaerium striatinum* (4, 6)
33. *Sphaerium transversum* (4)
34. *Stenotrema leai* (11, 13, 15, 19, 20, 21, 22)
35. Succineids (4, 5, 10, 11, 12, 16, 17, 20, 21, 23)
36. *Tritogonia verrucosa* (6)
37. *Unio merus tetralasmus* (3, 4, 5, 6, 7, 8, 9)
38. *Vallonia parvula* (11, 12, 13, 17, 19, 21)
39. *Zonitoides arboreus* (10, 11, 12, 13, 19, 20, 21, 22, 23).