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## Significant Additions to the Molluscan Fauna of the Illinois River, Arkansas

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Table 3. Habitat Skunk Killed

HABITAT	1977	1978	1979	TOTAL
Woodland	3(8) <sup>1</sup>	20(14)	51(13)	74(13)
Open Field or Pasture	3(8)	20(14)	68(17)	91(16)
Buildings in Country	17(71)	88(61)	199(51)	314(55)
Inside City Limits	4(10)	10(7)	29(8)	43(8)
Along Railroad	0(0)	0(0)	15(4)	15(3)
Edge of Water Source	1(3)	5(4)	25(7)	31(5)

1 - Parenthesis indicate percentage

Table 4. Time of Day Skunk Killed

TIME	1977	1978	1979	TOTAL
6:00-12:00 A.M.	19(58) <sup>1</sup>	44(42)	131(48)	194(47)
12:00-6:00 P.M.	6(18)	29(28)	81(29)	116(28)
6:00-12:00 P.M.	5(15)	15(15)	35(13)	55(14)
12:00-6:00 A.M.	3(9)	15(15)	28(10)	46(11)

1 - Parenthesis indicate percentage

While these data are based on observations made by untrained persons, we feel that they are consistent enough to draw the following profile: the rabid skunk coming in contact with humans generally will be solitary, aggressive or unafraid and found around buildings in the country during the daylight hours (usually in the morning). Since over 85% of skunks tested by the Arkansas Department of Health are positive for rabies, 90% of the total cases of rabies are attributable to skunks and because of the epidemic of skunk rabies, any skunk seen during daylight hours in Arkansas should be assumed rabid and treated accordingly. Also, Parker (1962, Proc. U.S. Livestock Sanit. Assoc. 65:273-280) stated that in areas where rabies in skunks is prevalent, sighting a skunk during daylight hours is "reasonable grounds to suspect the animal of being infected with the disease." The characteristics outlined herein demonstrate the effectiveness of the skunk as a perpetuator and disseminator of rabies.

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## SIGNIFICANT ADDITIONS TO THE MOLLUSCAN FAUNA OF THE ILLINOIS RIVER, ARKANSAS

In Gordon et al. (1980a), the molluscan fauna of the Illinois River in northwestern Arkansas was described. Thirty-nine taxa were listed. This faunal assemblage was compared to Branson (1967), the only other available report on the molluscan fauna of an Ozarkian west slope drainage, and some aspects of the local distribution of species endemic to the Interior Highlands were discussed. The distribution and identification of endemic forms and the Arkansas unionacean fauna have been further discussed in Gordon et al. (1980b). During the past year, additional samples were collected from the Illinois River and west slope drainages in Missouri (tributaries of the Neosho River). Methods were previously described (Gordon et al. 1980a).

*Fusconaia ozarkensis* (Call) and *Pisidium fallax* Sterki have been identified from the Illinois River. Additionally, *F. ozarkensis* is reported for the first time from Kansas (Spring River), and the Kansas records of Call (1885-1887) and Scammon (1906) are confirmed for *Actinonaias ellipsiformis ellipsiformis* (Conrad) (see Murray and Leonard, 1962) which appears to have been recently misinterpreted as *Villosa iris* (Lea) by Schuster and DuBois (1979). Within the larger drainage systems of the west slope of the Ozark Plateaus, the unionid fauna appears to be fairly similar (Table 1).

The Interior Highlands are composed of two separate geological assemblages which have been shown to possess a distinct endemic molluscan fauna (van der Schalie and van der Schalie, 1950; Gordon et al. 1980b). Of the eight endemic taxa of Unionidae, six are known to occur in the Ozark Plateaus, four of these six are restricted to the Ozark Plateaus, and the other two are distributed throughout the region (*Ptychobranchius occidentalis* [Conrad] and *Cyprogenia aberti* [Conrad]). The remaining two species, *Arkansia wheeleri* Ortmann and Walker and *Villosa arkansensis* (Lea), are restricted to the Ouachita Mountains (Gordon et al. 1980b). Collections from the areas adjacent to the Illinois River have shown *Lampisilis reeveiana* (Lea) and *Actinonaias ellipsiformis pleasi* (Marsh) to be present in the southern Ozarkian drainage of the White River but not the west slope drainages represented by the Illinois, Elk, and Spring rivers. Likewise, *L. rafinesqueana* Frierson occurs throughout the west slope drainages (Table 1) but not in the White River. *Fusconaia ozarkensis* is common to both the south and the west slope drainage systems.

Three natural unionacean faunal subdivisions appear to be present in the Ozark Plateaus. The west slope fauna is typified by *F. ozarkensis* and *L. rafinesqueana*. The fauna south of the Ozark Crest is composed of *F. ozarkensis*, *A. ellipsiformis pleasi*, and *L. reeveiana*. North of the Ozark Crest, the only endemic unionid is *L. reeveiana*. The overlap within these subdivisions and the presence of the two wide-spread species illustrates the close affinity of the fauna.

Further observations of the unionid fauna suggest some additional associations. *Cyprogenia aberti* is generally distributed throughout the Interior Highlands and west into Oklahoma and Kansas (Gordon et al. 1980b) and has been found throughout the Spring River system. For these reasons, it is highly probable that *C. aberti* is present in the Illinois River, although it may occur only downstream in Oklahoma. Similar distribution patterns are reflected in the occurrence of several other species listed by Branson (1967) for the lower Spring River (see Table 1). Also, *Alasmidonta marginata* Say and *A. calceola* (Lea) have been recorded from the Elk and Spring rivers (Table 1). They are known historically from the White River (Gordon et al. 1980b). Baker (1928) has noted a close distributional association between these two species of *Alasmidonta*. The small size and habit of burrowing into the substrate by *A. calceola* make it difficult to find (Utterback, 1915; Baker, 1928). *Alasmidonta marginata* was found in the Illinois River; therefore, it is postulated that *A. calceola* also occurs in the Illinois River.

*Pisidium fallax* generally has been considered a northern species. With exception of a single record from Alabama, it had not been found south of the extent of maximum glaciation. Its presence in the Illinois River and several adjacent drainages represents a new regional record for this species (Gordon et al. 1980c). These records and Wheeler's (1918) observations on the Ouachita Mountains molluscan assemblage illustrate the need for further study of the Sphaeriidae within the Interior Highlands. *Pisidium fallax* easily may be mistaken for *P. casertanum* or *P. compressum*. Its designation as the "deceptive" (from the Latin, *fallax*) *Pisidium* appears to have been appropriate.

Table 1. Species of Unionidae from three drainage systems of the Ozark Plateaus west slope (compiled from Oesch, *pers. comm.*; Buchanan, *pers. comm.*; Gordon et al. 1980a; and authors' personal collections).<sup>1</sup>

SPECIES	ILLINOIS	ELK	SPRING
<i>Fusconaia flava</i>	X	X	X
<i>Fusconaia ozarkensis</i>	X	X	X
<i>Megaloniais gigantea</i> <sup>2</sup>	X		
<i>Amblema plicata</i>	X		X
<i>Quadrula pustulosa</i>	X	X	X
<i>Quadrula quadrula</i> <sup>2</sup>	X		X
<i>Quadrula metanevra</i>			X
<i>Quadrula cylindrica</i>			X
<i>Tritogonia verrucosa</i>	X		X
<i>Cyclonaias tuberculata</i>		X	
<i>Pleurobema cordatum</i>	X	X	X
<i>Elliptio dilatatus</i>	X		X
<i>Lasmigona costata</i>	X	X	X
<i>Alasmidonta calceola</i>		X	X
<i>Alasmidonta marginata</i>	X	X	X
<i>Anodonta grandis</i>	X	X	X
<i>Anodonta imbecilis</i>	X	X	X
<i>Strophitus undulatus</i>	X	X	X
<i>Ptychobranthus occidentalis</i>	X		X
<i>Cyprogenia aberti</i>			X
<i>Actinonaias carinata</i>	X	X	X
<i>Actinonaias ellipsiformis ellipsiformis</i>	X	X	X
<i>Leptodea fragilis</i>		X	
<i>Proptera purpurata</i>	X		
<i>Carunculina parva</i>	X	X	X
<i>Carunculina glans</i>	X	X	X
<i>Villosa lienosa</i>	X		
<i>Ligumia subrostrata</i>	X	X	X
<i>Lampsilis radiata siliquoidea</i>	X		X
<i>Lampsilis rafinesqueana</i>	X	X	X
<i>Lampsilis ovata</i>	X	X	X

<sup>1</sup>Branson (1967) has not been included here due to sample locations in the lower Spring River. Similar locations have not yet been sampled in the Illinois River or are inundated by Grand Lake O' the Cherokees in the Elk River.

<sup>2</sup>This species appears to have been introduced into an impoundment on a small tributary of the Illinois River.

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