An Observation of a Wild Group of Masked Shrews,
*Sorex cinereus*

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A group of Masked Shrews, *Sorex cinereus*, were active together in a mountain forest in Macon County, western North Carolina. A literature review of similar observations and the results of stomach analysis lead to the conclusion that a concentration of prey during a dry spring may have caused the aggregation reported here.

**Key Words:** Masked Shrew, *Sorex cinereus*, feeding behaviour, social behaviour, diet, North Carolina.

Shrews (Soricidae) are generally reported to be solitary outside the breeding season. Although some sociality has been reported for certain genera (e.g., Cryptotis and at least some Crocidurinae), shrews of the genus *Sorex* are considered to be among the least social (Nowak and Paradiso 1983; Michalak 1983; Vogel 1980). I was therefore surprised to encounter a group of *Sorex* active together on a hillside.

On 27 April 1986 an Indiana State University herpetology class walking down a mountain dirt road (elevation about 1480 m) on the property of the Coweeta Hydrological Laboratory, Macon County, North Carolina (35°04'N; 83°23'W), noticed shrews active among fallen leaves on an east-facing roadside bank. It was about an hour before sunset on a hot, clear day of an exceedingly dry spring. A steep bank with mossy rocks and exposed tree roots rose about 2.5 m above a roadside ditch. The bank leveled as it joined the gently sloping forest floor. Most deciduous vegetation had yet to leaf, and so rhododendron (*Rhododendron* sp.) and a few mountain laurel (*Kalmia latifolia*) were the main foliage. They occurred mostly along the road where they received morning sun. Despite the drought, the area of the shrew concentration contained a damp seep. The leaf litter was mainly oak leaves and, on the flatter ground, was often at least 10 cm deep.

Rustling drew our attention to shrews scurrying up and down the bank. We spread out along about 19 m of the road, and each of us could see at least a few active shrews. This would imply a minimum of perhaps 15 animals, although the common estimate was 30 to 40. The shrews appeared to be mostly small, brown *Sorex* although John Whitaker, Jr., thought he also saw the larger Smoky Shrew, *S. fumeus*. Despite the presence of more concealed trails, the shrews would frequently leap down the banks from higher levels, bounding over the leaves and across rocks or logs. Some darted along well-worn routes through the moss,
running back and forth, often seeming to retrench parts of their paths. Periodically, one would pause before hurrying on.

They sometimes seemed to move in "waves" of two or three animals. The paths of two shrews would occasionally cross, but they did not appear to notice each other; no chasing was seen. High-pitched, faint chirps were heard from at least some of the animals.

At one time, one animal was captured. It was a male Masked Shrew, *S. cinereus*. Its ears were elongated (mean = 4.4 x 3.13 mm). A return trip to the site made on 4, 5 and 6 May; no more shrew activity was seen despite over 18 hours of quiet watching prior to setting traps. The well-worn tunnels in the moss proved to be the regular paths of Southern Voles, *Clethrionomys gapperi*, which were visible now and then through the day. Chipmunks, *Tamias striatus*, were frequently heard on the forest floor. Two nights of pit trapping, (42 trap-nights) along the hillside yielded five *S. cinereus* (one male, two female), three *S. fumeus* (two male, one female) and one Short-tailed Shrew, *Blarina brevicauda* (a female).

All shrews harbored ectoparasites, most common on the *Sorex* (n = 9, including the shrew captured by us) were pygromorphid mites (*Bakerdania* and *Pygromorphus*, 100% of shrews infested, mean 21.1 per host). *Clethrionomys* (100% infested, x = 5.8 per host) and trombiculid mites or chiggers (*Euchoeangasia* and *Ne trombicula*, 89% infested, x = 19.2 per infested host; found mostly just above the tail). Nematodes were present in at least five *Sorex* stomachs.

The reproductive systems indicated that all shrews were breeding adults. One female Masked Shrew possessed six uterine swellings; the Smoky Shrew female had at least seven swellings and was pregnant. The pit traps also captured three juvenile *Clethrionomys*. Shrew catcher traps (52 trap-nights) caught five adult *Clethrionomys* (three male, two female) and four Deer Mice, *Peromyscus maniculatus* (two male, two female).

The harem, in previous reports of similar observations of *Sorex* by Tuttle (1964) reported catching five Catcher Shrews. Tuttle (1964) reported finding one day from among a vocal group of shrews; many more shrew calls were heard nearby. He observed the shrews to fight upon meeting. Woollenforden (1961) caught three Masked Shrews from another vocal group which he estimated at 20 shrews. Buckner (1970) noted two adults and five juvenile Masked Shrews feeding together on butterflies. The adults pounced on butterflies, and returned to the waiting juveniles which shared in the meal. Hieseltcher (1972) reported a group of Masked Shrews which were causing commotion in leaf litter. It was not possible to number the total number of shrews, but it was not as high as was first thought. He also mentioned that a similar observation had been made in the same area.

Among the adults pounced on butterflies, and the calling we heard seemed (although we were not unanimous) to fit better Blossom's (1932) description of the Masked Shrew's feeding call, "a succession of faint twittering notes", than his "rapid series of rather staccato squeaks" heard during aggression. Torn ears on a couple of the collected shrews could indicate past alterations. The fact that Smoky Shrews were apparently present as well makes a breeding aggregation seems less probable. Tuttle (1964) also reported seeing a Smoky Shrew during his observations.

Repeated reports of groups of Masked Shrews might indicate that such behaviour is regular if rare. In the case discussed here, it seems likely that a prey source may have brought together these predators. Perhaps the drought conditions concentrated available food in the area of the seep; Verme (1958) similarly suggested that a dry summer may have resulted in unusual shrew densities. Our results seem to show that, perhaps because of food distribution, adult Masked Shrews may be socially tolerant outside the mating bond. However, observations detailed by others indicate that gatherings are sometimes associated with aggression. If future visits shrews groups could capture a few specimens and examine their stomach contents, some of the conclusions could be further tested.

I would appreciate hearing from anyone who has had such an experience.

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Literature Cited


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