

behavior within the swarm was interesting to note. Competition in form of territorial aggressiveness and defence and also reproductive activities were not observed. The dragonflies seemed also not as wary of humans as often they are. The mosquito season was in full course; as we walked through the dragonfly swarm at evening the dragonflies came closer to us, flew at lower levels, and fed on the mosquitoes attracted by our presence. Also interesting to note was the scarcity of damselflies at Drag Lake: individuals seen numbered less than 10 or so. It is possible that the large number of dragonflies consumed many damselflies earlier. Mosquitoes, however, appeared the swarm's major target.

As to space and time factors, swarming continued throughout each of the three days, and was heaviest at midday to near sundown. Swarming occurred entirely over land rather than water surfaces.

Some dragonflies were not part of the swarming phenomenon at Drag Lake but were taken as part of our sampling. Along the lake shore were *Gomphus spicatus* Hagen and *Basiaeschna janata* (Say). At one localized and protected cell on the lake's northwest side we found *Aeshna canadensis* Walker clinging to tree branches and trunks at the forest edge, a habitat noted by Walker (1958). *Didymops transversa* (Say) was also taken on vegetation along roadways.

Dragonfly swarming has been studied and noted in the literature. "Swarm-feeding" may be the best term describing our observations at Drag Lake. Corbet (1963) discussed this in some detail. Corbet also commented on the lack of interaction among dragonflies feeding upon other insect swarms. Kormondy (1959) observed six different species of dragonfly flying together in Michigan, with *Epiptera spinigera*

Selys in the majority; this is similar to our observations at Drag Lake. Walker and Corbet (1975) also mentioned *spinigera*'s appearance in numbers in southern Ontario.

None of the dragonflies described here are considered rare for the locality, and may be considered well within their given ranges (Needham and Westfall 1955; Walker 1958; Walker and Corbet 1975).

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Literature Cited

- Corbet, P. S. 1963. A biology of dragonflies. Quadrangle Books, Chicago, Illinois. 247 pp.
- Kormondy, E. J. 1959. The systematics of *Tetragoneuria*, based on ecological, life history, and morphological evidence (Odonata: Corduliidae). Miscellaneous Publications, Museum of Zoology, University of Michigan 107: 1-79.
- Needham, J. G. and M. J. Westfall. 1955. A manual of the dragonflies of North America (Anisoptera). University of California Press, Berkeley. 615 pp.
- Walker, E. M. 1958. The Odonata of Canada and Alaska. Volume Two, Part III. University of Toronto Press, Toronto. 318 pp.
- Walker, E. M. and P. S. Corbet. 1975. The Odonata of Canada and Alaska. Volume Three, Part III. University of Toronto Press, Toronto. 307 pp.

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Two Recent Bobcat (*Lynx rufus*) Specimens from Southern Ontario

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As a result of a recent survey of bobcat (*Lynx rufus*¹) material in major Canadian institutions, we found that two specimens of this species in the collec-

tions of the Royal Ontario Museum (ROM) apparently represent the only museum specimens that have been collected in southern Ontario since 1906. One specimen (ROM 25497) is an adult male from Pakenham Township, Lanark County, 1953. The other (ROM 67947) obtained from the Fish and Wildlife Research Branch of the Ministry of Natural Resources, is a young male, found as a road kill on Highway #11, Muskoka Township, Bracebridge District, 1972.

These two specimens are of considerable interest

¹Recently, authors such as van Zyll de Jong (1975) considered *Lynx* as a subgenus of *Felis* rather than a separate genus and assigned the lynx and the bobcat to the genus *Felis*. To avoid confusion with the nomenclature used by Peterson and Downing (1952), Peterson (1966), and Banfield (1974), we used the genus *Lynx* for the bobcat in this paper.

since the racial affinities of the present southern Ontario bobcat population are questionable. Peterson and Downing (1952) assigned the original population to the subspecies *L. r. gigas*, a race that is found also in New Brunswick, Nova Scotia, and possibly southern Quebec (Peterson 1966). But since the only *gigas* material from Ontario available to Peterson and Downing (1952) was collected prior to 1906, these authors suggested that *L. r. gigas* may have become extinct in southern Ontario within the last half-century, and may have been replaced by some other race. According to the distribution map of Peterson and Downing (1952), it is possible that either of two races of *L. rufus* could have recently extended their range into southern Ontario: *L. r. rufus*, found in the eastern United States, or *L. r. superiorenensis* from the northwestern Great Lakes region. Although Banfield (1974) reported that *L. r. rufus* has recently invaded southern Ontario, this conclusion apparently was not based on recent material.

We have compared the skulls of the two recent ROM specimens with those of *gigas*, *rufus*, and *superiorenensis* and when the diagnostic characters described by Peterson and Downing (1952) and Peterson (1966) are used, the skulls appear to conform closely to *L. r. superiorenensis*. Both skulls differ from those of *L. r. rufus* in their dorsal contour and by their relatively smaller third upper premolar (PM³). ROM 25497 could also be distinguished from skulls

of *gigas* by its relatively wider and shorter palate and the ratio of its maxillary tooth row to the width of the palate. Unfortunately, the palatal width of ROM 67947 could not be measured because the skull is partially damaged. The skull of this specimen, however, does conform closely to young male material of *superiorenensis*.

ROM specimen records and reports from trappers indicate that the populations of *L. r. superiorenensis* in Ontario are the result of two recent invasions. Probably derived from the population of *superiorenensis* in Minnesota, this race of bobcat first appeared in Ontario early in the century in the region west of Lake Superior, where it rapidly expanded its range north and east. In the late 1940s, a second invasion occurred when *L. r. superiorenensis* crossed into Ontario from the upper peninsula of Michigan, and by 1952 specimens had been obtained from Sault Ste. Marie (formerly Algoma) District and Cockburn Island, Espanola (formerly Manitoulin) District (Peterson and Downing 1952). Although inconclusive, the identification of the two recent specimens from Lanark County and Bracebridge District as *superiorenensis* suggests that this western race has now spread into southern Ontario (Figure 1). Fur harvest records obtained from the Fish and Wildlife Research Branch, Ministry of Natural Resources for 1973–1975, show that eight bobcats were taken in southern Ontario for this period with specimens trapped in the following southern

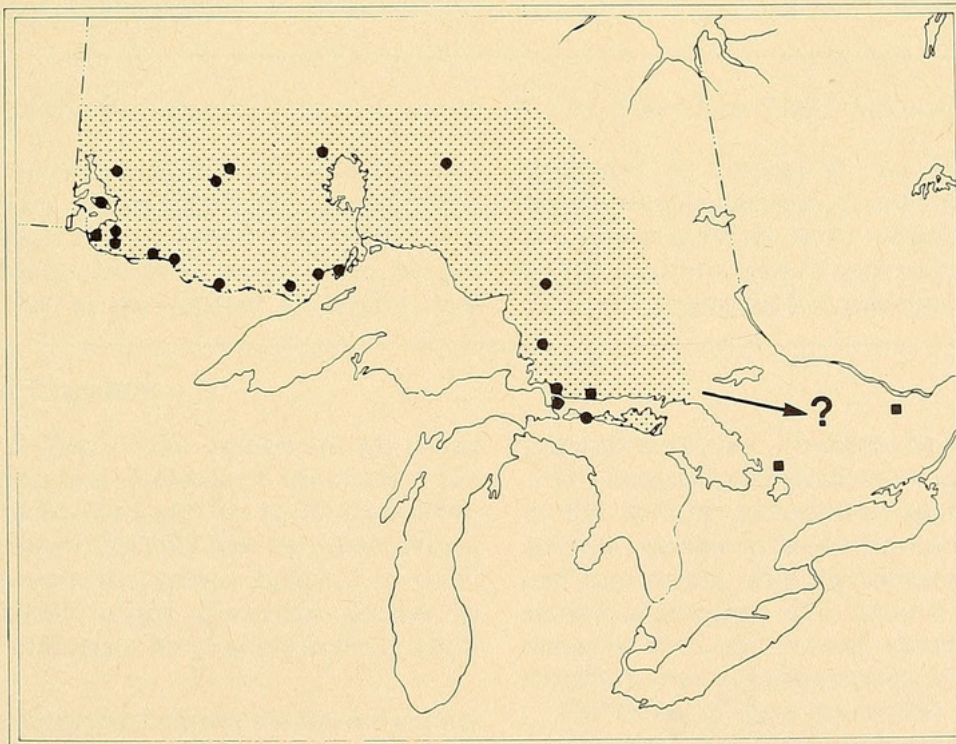


FIGURE 1. Locations of two recent bobcat (*Lynx rufus*) specimens from southern Ontario and the distribution of the western race *superiorenensis*. Stippling represents the approximate range of *superiorenensis* in Ontario, each dot represents one or more specimens in the Royal Ontario Museum, and squares represent the two specimens from southern Ontario.

Ministry districts: Lindsay, Cambridge, Tweed, Lanark, Pembroke, and Minden. In order to confirm the taxonomic status of this population of *L. rufus* now inhabiting southern Ontario, the Royal Ontario Museum is attempting to acquire specimens from this region. In a recent study applying numerical taxonomy, van Zyll de Jong (1975) analyzed skull and body ratios of the three subspecies of bobcat discussed in this paper and found that they show intraspecific differences. It would be interesting to compare the present population of *L. rufus* in southern Ontario with these three subspecies using modern taxonomic methods if, and when, an adequate sample size can be obtained.

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the Ontario fur harvest records.

Literature Cited

- Banfield, A. W. F.** 1974. Mammals of Canada. University of Toronto Press, Toronto. 438 pp.
- Peterson, R. L.** 1966. The mammals of eastern Canada. Oxford University Press, Toronto. 465 pp.
- Peterson, R. L. and S. C. Downing.** 1952. Notes on the bobcats (*Lynx rufus*) of eastern North America with the description of a new race. Contributions of the Royal Ontario Museum of Zoology and Palaeontology, Number 33. 23 pp.
- van Zyll de Jong, C. G.** 1975. Differentiation of the Canada lynx, *Felis (Lynx) canadensis subsolana*, in Newfoundland. Canadian Journal of Zoology 53: 699-705.

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