

TEST OF A METHOD OF SMALL MAMMAL TRAPPING

By D. A. MacLULICH

VARIOUS arrangements of traps in quadrats and lines have been used to gain comparative indices of abundance of small mammals, see papers by Bole (1939), Dice (1931 and 1938) and others. In the present experiment it was desired to test the plan of crowding traps closely so that it would be unlikely that any small mammals should escape capture.

Method.—Ordinary break-back mouse traps were placed at 8-inch intervals, i.e. 3 per 2 feet, around the four sides of a quadrat measuring one rod or 16½ feet square. Four rows of similarly spaced traps were set across the quadrat near one side, the distance between rows being one foot. As there were not sufficient traps available to cover the area at one time the four rows were moved across the quadrat in barrage fashion. The number of traps in use was 192 and traps were set in 396 places altogether. All traps were anchored to sticks, etc., by tie-strings. For bait a mixture of rolled oats, peanut butter, raisins and bacon was used.

Trapping was carried out on a quadrat of the above description in 1933, June 11 to 21, and the next year the same area was trapped in the same way, July 9 to 18. The location was near Frank's Bay on the south shore of Lake Nipissing in Parry Sound District, Ontario.

The forest was mixed second-growth, consisting of poplar, white birch, balsam, white pine, red pine and white spruce in order of abundance, with *Aster macrophyllus* and *Aralia nudicaulis* prominent in the ground cover. The diameter of the dominant trees varied from 6 to 11 inches.

TABLE 1

Species	1933		1934	
	First 2 days	Total	First 2 days	Total
<i>Peromyscus maniculatus</i>	2	4	6	10
<i>Clethrionomys gapperi</i>	0	1	0	2
<i>Blarina brevicauda</i>	0	1	0	0
<i>Sorex cinereus</i>	1	2	0	0

Table 1. Mammals caught in a square rod quadrat.

Results.—The species and numbers caught are shown in Table 1, in which are indicated the catch of the first two days and the total for the whole period of trapping. In Table 2 the total numbers of animals caught daily for both years is shown.

TABLE 2

Days	Year 1933	Year 1934
1st.	1	2
2nd.	2	4
3rd.	0	2
4th.	2	2
5th.	1	2
6th.	0	1
7th.	0	0
8th.	0	0
9th.	0	0
10th.	1	—
Totals	7	13

Table 2. Total numbers of mammals caught.
Trap spacing 8 x 12 inches on quadrat 1 rod square.

The animals caught on the boundary of the quadrat were, in 1933, 2 deermice, *Peromyscus maniculatus*, and 1 cinereous shrew, *Sorex cinereus*; and in 1934, 9 deermice and 1 red-backed mouse, *Clethrionomys gapperi*.

Discussion.—It is at once evident from the results presented in Tables 1 and 2 that this method yields a small and irregular sample and hence an inaccurate index of population changes. The sample is not large enough to represent even one family of an abundant species. The method requires too much labour and time. To enlarge the area of the quadrat (it was 1/160th of an acre) would use an impractical number of traps and excessive expenditure of time. For the same effort considerably more information could surely be obtained by spreading the traps over a larger area. Since mice explore their home range and will find traps even if only three or four are on their feeding ground it is not necessary to crowd traps so closely.

The trapping carried out in this experiment yielded some incidental information on the abundance of animals which is summarized in Conclusions 3a and 3b below.

Summary and Conclusions.—1. A plan of crowding break-back mouse traps 8 inches apart in rows

spaced 1 foot apart on a rod square quadrat was tried in two successive years.

2. The method required too much labour and gave inadequate and irregular data. It is recommended that traps be spaced much farther apart on larger trapping areas.

3. The numbers of animals caught suggest the following conclusions regarding the abundance of various animals on the south shore of Lake Nipissing in mixed second-growth: (a) Deermice, *Peromyscus maniculatus*, were more abundant in 1934 than in 1933. (b) Red-backed mice, *Clethrionomys gapperi*, short-tailed shrew, *Blarina brev-*

icauda, and cinerous shrew, *Sorex cinereus*, were present but not abundant.

LITERATURE CITED

- BOLE, B. P. JR., 1939. The quadrat method of studying small mammal populations. *Cleveland Mus. Nat. Hist., Scient. Publ.*, vol. 5, no. 4, pp. 15-77.
- DICE, LEE R. 1931. Methods of indicating the abundance of animals. *J. Mamm.*, vol. 12, no. 4, pp. 376-81.
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NOTES AND OBSERVATIONS

Chenopodium polyspermum L. IN CANADA.*—Since the publication in *The Canadian Field-Naturalist* for March, 1936, of a record of occurrence at Ottawa of *Chenopodium polyspermum* L., that and previous records from the Province of Quebec have been added to by both eastern and western extensions of range. From the herbarium of the Division of Botany, Science Service, Ottawa, the following citations may now be made.

New Brunswick: St. Andrews, H. Groh, July 31, 1936.

Quebec: Ste. Therese, Iberville Co., Fr. Marie-Anselm, August 30, 1934.

Ontario: Ottawa, Rockcliffe Park, H. Groh and W. G. Dore, August 10, 1935, open woods.

Saskatchewan: 15 miles S.W. of McKague, in garden, A. J. Breitung 479, August 27, 1939.

This weed, which may be known as many-seeded goosefoot, is a slender annual, adventive from Europe. A specimen collected from ballast at Camden, N.J., in 1879, is in the National Herbarium at Ottawa. Earlier records are mostly from Atlantic ports.—H. GROH.

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PINTAIL INCREASING AS NESTING BIRD IN NEW BRUNSWICK.—The first record of a Pintail (*Dafla acuta tzitzihua*) nest in the Province of New Brunswick was obtained when an incubating female was flushed from a nest of ten eggs in a small marsh near Midgic, Westmoreland County, New Brunswick, on June 6, 1938, by John Tingley. On May 20, 1938, I had suspected that this species

nested there when I observed six mated pairs feeding in a nearby flooded hayfield. A careful search on May 28 failed to disclose any nest, so the aid of John Tingley, game warden, was enlisted through the interest and co-operation of H. H. Ritchie, chief game warden of the Province. We believe that the six pairs of Pintails nested there during 1938.

In 1939 Mr. Tingley was again assigned to searching for Pintail nests and succeeded in finding five, all in approximately the same area as the one found in 1938. We saw as many as 21 pairs of Pintails there during the latter part of May, 1939, so believe that probably 20 or more pairs nested, a good increase over 1938.

Upon inquiry among local residents we learned from a farmer, who seemed perfectly reliable and who identified the birds as recent additions to his neighborhood, that one pair of Pintails nested in the Midgic area during 1937. This must have been the beginning of Pintail nesting in this part of New Brunswick.¹ From this one pair in 1937 the nesting population increased to six pairs in 1938 and to about 20 pairs in 1939. The small boggy marsh near Midgic is a part of the vast Tantramar marsh and hayfield area lying near the border of New Brunswick and Nova Scotia. It will be interesting to follow the nesting Pintail population there in the future as it may represent an important addition to the Atlantic Flyway waterfowl.—HAROLD S. PETERS, *U.S. Biological Survey, Charleston, S.C.*

1. Chamberlain (Bull. Nat. Hist. Soc. of N.B., 1882, pp. 23-68) records a female and brood of young on the Tobique river, Sept. 1879, seen by Mr. Carnell. No Pintail nesting records are known for New Brunswick from 1879 to 1937.



MacLulich, Duncan Alexander. 1940. "Test of a Method of Small Mammal Trapping." *The Canadian field-naturalist* 54(4), 57–58.

<https://doi.org/10.5962/p.340217>.

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