

LIBRARY
OF THE
UNIVERSITY
OF ILLINOIS

590.5

FI

V.28-29

OCT 4 1951

~~LIBRARY~~
~~UNIVERSITY~~

BIOLOGY

The person charging this material is responsible for its return to the library from which it was withdrawn on or before the **Latest Date** stamped below.

Theft, mutilation, and underlining of books are reasons for disciplinary action and may result in dismissal from the University.

UNIVERSITY OF ILLINOIS LIBRARY AT URBANA-CHAMPAIGN

~~JAN 17 1976~~

~~JAN 23 1976~~

~~JAN 29 1976~~

~~FEB 28 1976~~

~~MAR 18 1976~~

~~NOV 6 1975~~

~~DEC 11 1975~~

~~FEB 11 1981~~

00.5
I
2914

Harvest

ZOOLOGICAL SERIES
OF
FIELD MUSEUM OF NATURAL HISTORY

Volume 29

CHICAGO, OCTOBER 26, 1944

No. 14

A NEW HARVEST MOUSE FROM WISCONSIN

BY HAROLD C. HANSON

ASSISTANT GAME TECHNICIAN, ILLINOIS NATURAL HISTORY SURVEY

345

The discovery of a harvest mouse of the genus *Reithrodontomys* in Westpoint Township, Columbia County, Wisconsin, was an unexpected highlight of a small-animal census made in the fall of 1941 on an area of seven square miles near Prairie du Sac. This work was done while I was a Research Assistant in the Department of Wildlife Management at the University of Wisconsin. This mouse had not been known to occur within the borders of the state, and a study of the specimens collected indicates that the Wisconsin population represents an undescribed race of *Reithrodontomys megalotis*. I believe it may be a preglacial relic in the driftless area of Wisconsin and Minnesota. Hamilton (1943, p. 264) reports the harvest mouse from La Crosse, without indicating the collector and without comment.

I am indebted to Dr. Hartley H. T. Jackson for the loan of specimens from the Fish and Wildlife Service collection in the National Museum, and to Dr. Wilfred H. Osgood for permission to examine the Field Museum collection under his care and for advice during the course of the study. I have also discussed the taxonomic problem involved with Dr. Donald M. Hatfield of the Chicago Academy of Sciences.

***Reithrodontomys megalotis pectoralis* subsp. nov.**

Type from Westpoint, Columbia County, Wisconsin. No. 53840 Field Museum of Natural History. Adult female. Collected October 18, 1941, by Harold C. Hanson. Original No. 448.

Diagnosis.—Wisconsin harvest mice may usually be distinguished by the presence of a buffy pectoral spot between the fore legs.

No. 564

205

THE LIBRARY OF THE

NOV 10 1944

NA
H

Thirty-three out of forty-one skins and alcoholics examined show at least an indication of this spot, but it is present in only two of twenty-five specimens of *Reithrodontomys megalotis dychei* from North and South Dakota, Colorado, Nebraska, Kansas, Minnesota, Iowa, and Missouri. Three specimens taken near La Crosse, Wisconsin, show the buff spot, while two trapped across the Mississippi River near Hokah, Minnesota, lack it. Measurements fail to reveal any significant differences between the new race and *dychei*.

Range.—In so far as known the race *pectoralis* is limited to the driftless region of Wisconsin and Minnesota. All specimens to date have been taken either in the driftless area or in the immediately surrounding country. The north and south limits of the range of the subspecies in Wisconsin are not known, but that it occurs freely over much of the driftless area is implied by the ease with which specimens may be trapped in Columbia, Sauk, and La Crosse counties.

Surber (1932, p. 68) states that he took seven harvest mice of this species at Homer in Winona County, Minnesota, and Dr. Donald M. Hatfield informs me that a skull of *Reithrodontomys* was discovered in an owl pellet found at Caledonia, in Houston County. The latter record was confirmed by two specimens that I trapped near Hokah, also in Houston County.

Measurements (average of fourteen males and fourteen females).—Males: total length 128 (119–145); tail 62 (55–69); hind foot 15.6 (15–17). Females: total length 149 (120–151); tail 64.2 (51–70); hind foot 15.8 (14–17). Skull: Males: greatest length 21.3 (19.9–22.2); breadth of braincase 10.5 (10–11.5); length of nasals 7.7 (7.3–8.9); length of toothrow 2.9 and 3. Females: greatest length 21.6 and 20.4; breadth of braincase 10.2 (10.1–10.5); length of nasals 8 (7.6–8.3); length of toothrow 3.1 (3.1–3.2).

Specimens examined.—*R. m. pectoralis*: Westpoint, Columbia County, Wisconsin, 29; Prairie du Sac, Sauk County, Wisconsin, 7; La Crosse, La Crosse County, Wisconsin, 3; Hokah, Houston County, Minnesota, 2.

R. m. dychei: West Newton, Nicollet County, Minnesota, 1; Atlantic, Cass County, Iowa, 1; Thayer, Oregon County, Missouri, 1; Oakes, Dickey County, North Dakota, 2; Cannon Ball, Sioux County, North Dakota, 3; Batesland, Bennett County, South Dakota, 4; Onaga, Pottawatomie County, Kansas, 3; Verdigre, Knox County, Nebraska, 1; Neligh, Antelope County, Nebraska, 2;

FI
v. 29 '14

Milford, Seward County, Nebraska, 1; Cherry County, Nebraska, 5; Boulder, Boulder County, Colorado, 1.

Remarks.—Dr. Wilfred H. Osgood informs me that many kinds of rodents show a spotting of buffy fur in the pectoral region,

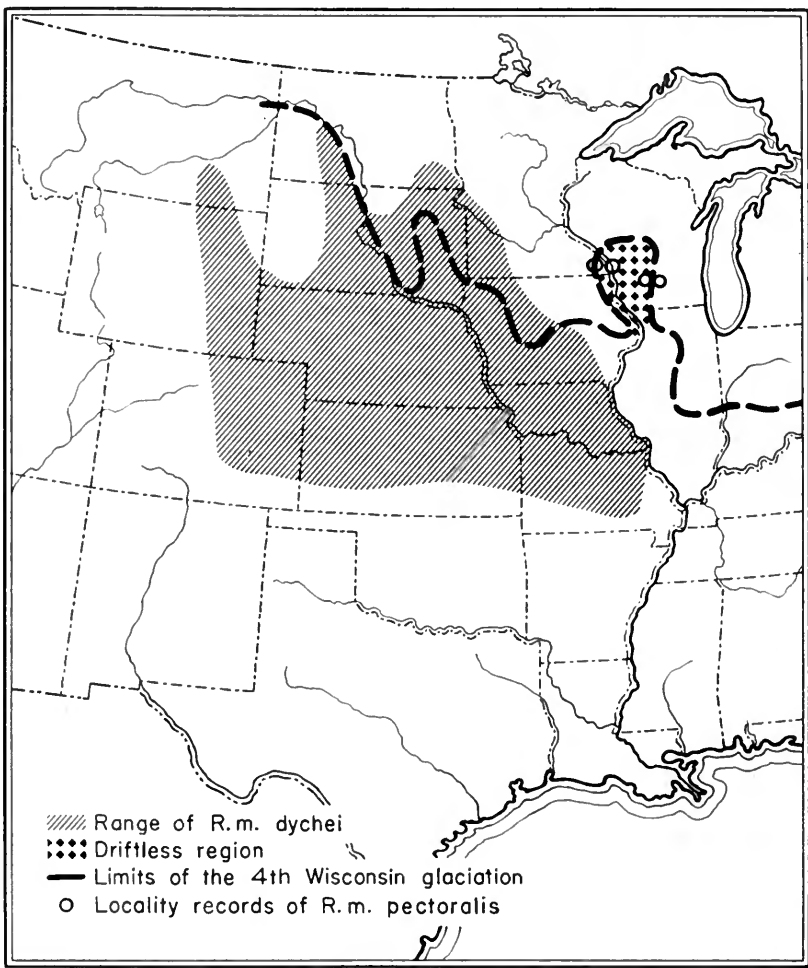


FIG. 26. Map showing ranges of *Reithrodontomys megalotis dychei* and *R. m. pectoralis*.

usually in correlation with humidity. Races inhabiting the humid part of the total range of a species often possess a buffy pectoral spot that is absent in races occupying the less humid or arid sector of the range. Certain rodents in Chile, *Phyllotis darwini* for

instance, show this tendency. The genus *Peromyscus* may be compared with the Wisconsin harvest mice, as a number of its species exhibit this relation (Osgood, 1909, pp. 116, 148, 150, 170, 243, 246). The accompanying table shows pairs of subspecies (with and without the pectoral spot) with the extremes of the annual precipitation in their ranges. The California harvest mouse (*Reithrodontomys megalotis longicaudus*) is included in the table as it parallels the Wisconsin race in having a strong ochraceous buff on the chest.

RELATION OF RAINFALL TO PECTORAL SPOTTING IN
PEROMYSCUS AND REITHRODONTOMYS

Races with pectoral spot	Annual precipitation in inches	Races lacking pectoral spot	Annual precipitation in inches
<i>Peromyscus</i>		<i>Peromyscus</i>	
<i>leucopus leucopus</i>	45-55	<i>leucopus noveboracensis</i>	30-40 (30 over greater part of range)
<i>truei gilberti</i>	20-30	<i>truei truei</i>	10-20 (over greatest part of range)
<i>boylei attwateri</i>	35-50	<i>boylei rowleyi</i>	10-20
<i>Reithrodontomys</i>		<i>Reithrodontomys</i>	
<i>megalotis pectoralis</i>	30-32	<i>megalotis dychei</i>	10-30 (over greater part of range. 40 in Missouri)
<i>megalotis longicaudus</i>	20-80		

A number of localities just west of the driftless portions of Houston County were trapped. Two trap sites near Spring Grove, in this county, and another fourteen miles southwest of Preston, Fillmore County, failed to yield harvest mice. It thus seems likely that the range of *pectoralis* is isolated from that of the nearest population of *dychei*. It is noteworthy that the harvest mouse was not secured by Dr. Sherman Hoslett (1940) of Luther College, Decorah, Iowa, during an intensive five-year study of the mammals of northeastern Iowa (Winneshiek and Allamakee counties).

A possible explanation of the apparently discontinuous distribution of the harvest mouse rests on the hypothesis that it may be a preglacial relic in the driftless region of Wisconsin and southeastern Minnesota. That a small mammal could thus survive isolation by the Pleistocene glaciation seems possible in view of the occurrence in the driftless area of a number of western plants that are interpreted as preglacial relics. The leguminous *Psoralea esculenta* (*pomme de prairie*) may be cited as a plant having a dis-

continuous range that closely resembles that of the harvest mice. Other theories could be advanced to explain the presence of the harvest mouse in Wisconsin; for example, it may be an interglacial or an early post-glacial prairie peninsula invader; but a more careful exploration of the range of the species in the midwest is needed before speculation on the problem is justified. If the subspecies has been isolated since the Pleistocene it has had sufficient time for the development of distinctive characters. According to Mayr there is valid evidence that endemic races of Scandinavian birds have become differentiated within the last 10,000 to 15,000 years, i.e. since the last retreat of the continental glacier. He points out that speciation proceeds most rapidly where animal populations are well isolated and removed from the retarding influences of post-Pleistocene population-mixing (Mayr, 1942, p. 222).

REFERENCES

FASSETT, N. C.

1939. The Leguminous Plants of Wisconsin. xii + 157 pp., 24 pls., 46 figs. University of Wisconsin Press.

HAMILTON, W. J., JR.

1943. The Mammals of Eastern United States. Handbooks of American Natural History, 2, 432 pp., 184 figs.

HOSLETT, SHERMAN A.

1940. Mammals of Northeast Iowa. Doctor's thesis (unpublished), University of Michigan.

HOWELL, A. H.

1914. Revision of the American Harvest Mice. N. Amer. Fauna, No. 36, 97 pp., 7 pls.

MAYR, ERNST

1942. Systematics and the Origin of Species. xiv + 334 pp., 29 figs. Columbia University Press.

OSGOOD, W. H.

1909. A Revision of the Mice of the Genus *Peromyscus*. N. Amer. Fauna, No. 28, 285 pp., 8 pls.

SURBER, THADDEUS

1932. The Mammals of Minnesota. Minnesota Department of Conservation, Division of Game and Fish. 84 pp., illus. St. Paul, Minnesota.

UNITED STATES DEPARTMENT OF AGRICULTURE

1941. Climate and Man. Yearbook of Agriculture, Part 5: Climatic Data, pp. 664-1222.

UNIVERSITY OF ILLINOIS-URBANA



3 0112 018260510