A Nest Complex of Perognathus hispidus (Rodentia: Heteromyidae) in Oklahoma

JAMES N. THOMPSON, JR. and STEPHEN D. BARRETT,
University of Oklahoma, Norman

The nests of *Perognathus hispidus* in various habitats have been described by several workers (Blair, 1937; Hall and Kelson, 1959; Hill, 1942). The descriptions have, however, been generally lacking in detail and differ in several aspects from nests observed in this study.

A complex of four nests of the hispid pocket mouse *(Perognathus hispidus)* was discovered 3.3 miles ESE of Taylor, Cotton County, Oklahoma. The nests were in a shallow ditch under a large bale of wire. The ditch branched from a ravine cut through a field of grass and scattered mesquite trees, bordering a wooded area. Although no animals were found in the nests, one had recently been occupied, and a specimen of *P. h.*

epilotus was trapped at the mouth of the nest on the previous evening. Three of the four nests were constructed in similar patterns, while the fourth appeared to be a nest in the process of construction.

When the bale of wire was removed, one fresh nest (designated A in Fig. I) was revealed in profile, because the wire had served as one side of the entrance tunnel and supported the nest. It also provided many possible entrances to the burrow. Two older nests (Fig. I, B and C) were found within 4 ft of the first one, and by their partially decayed states did not appear to be in use. No mounds of dirt were found at any of the entrances, in contrast to the report by Hall and Kelson (1959).

Nest A (Fig. II), the most recently occupied, was 9 inches high, 8 inches wide, and 7 inches long, and weighed 767 g. A tunnel, 9 inches long and ½ by ¾ inches in diameter, led upward from the nest into the bank of the ditch, ending in a spherical chamber. The nest site was 1½ to 2 ft below the surface of the ground. No food was found in any part of it. Scat pellets were discovered beneath both this and the other two nests, but not in the nests or the burrows themselves. Bailey (1939) reported, however, that the scat and urine of *P. longimembris pacificus* are deposited in a regular place, well separated from the nest. Beneath nest A two areas containing scat were found and tentatively identified as old tunnels, though they were now completely filled with dirt and scat. These "tunnels" were ¾ inch in diameter, 6 inches and 9 inches long, respectively, and merged near the bottom of the nest where several fresh pellets were found. These defecation tunnels also contained a small amount of dry grass similar in size to the nesting material.

The nest itself was constructed of grass ½ to 3 inches long. An opening, 1 inch by 1½ inches, led into a cavity 4 inches deep. At the end of this cavity was a chamber, 2 inches in diameter, presumably used as the sleeping area. The nesting material was loosely packed with no evidence of weaving.

Nest B was partially decayed and was about 1 ft below ground surface. It was 4 inches high, 3 inches long, and 4 inches wide and weighed 227 g. Its partially decayed state may account in part for the difference in size and weight compared with that of the first nest.

In nest A, as well as B, a 2-inch tunnel led upward to a cavity 2 by 3 inches. The entrance tunnel approached the chamber at a 45° angle and showed no evidence of plugging, in contrast to the report by Blair (1937) that *P. h. maximus* nests were generally plugged during the day. Though the supposed inhabitant of the first nest was caught during the night, leaving it no chance to conceal the entrance, no loose dirt was found that could have served this purpose.

Nest C was similar to the previous ones. As in the other nests, it was constructed of loosely packed grass 1 inch to 3 inches long.

Across the ravine from this nest complex a fresh burrow was found in the process of construction. It consisted of a main tunnel 1 ft deep, built at a 45° angle down. No nest chamber had as yet been dug. Pecan shells were found in the tunnel. A typical side tunnel was also present, diverging from the main one 2 inches from the entrance. This side tunnel was 6 inches long and ended in a slightly enlarged chamber. Blair (1937) reported that such tunnels are used for escape and are plugged with dirt from within during times of danger.

The burrows investigated in this study differ in several respects from those described in other studies. Blair, who worked in a rocky, uncultivated prairie, reported that every burrow was located "at least partially beneath a limestone fragment." Such construction would provide good protection for the inhabitants. The present location was a grassy field,

with no rocks available for such use. Instead, burrows were built at a steep angle ending in a rather deeply placed nest. This also differs from the report by Hill (1942) in which *P. h. paradoxus* burrows, in a similar environment, were described as large-diameter tunnels entering the ground perpendicularly. As mentioned previously, feces placement differed from that reported by Bailey for *P. longimembris pacificus*. Finally, there was no evidence of a correlation between age and complexity of the burrow as described by Blair for *P. h. maximus*. The adult individual caught here occupied a simple nest. In fact, evidence suggests that in this case new

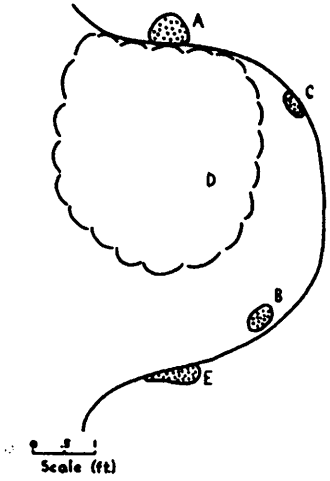

Figure I. Relative locations of nests (A, B, and C), bale of wire (D), and an unidentified nest (E).

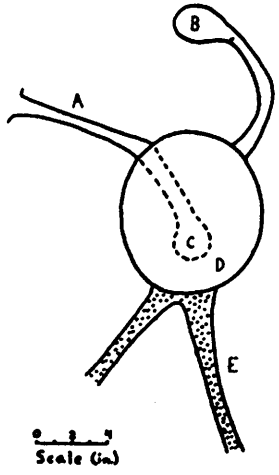

Figure II. Schematic representation of nest A with entrance tunnel (A), escape chamber and tunnel (B), sleeping chamber (C) in nest proper (D), and the defecation tunnels (E).

nests are constructed as an alternate to extending and enlarging a previous one.

Invertebrates taken from Nest A include: two phalangids (Arachnida, Order Phalangida), fecal pellets (unidentified invertebrate), and small, spherical, black eggs (unidentified invertebrate). Nests B and C contained: six juvenile millipedes (Diplopoda), one fungus gnat (Order Diptera, Family Mycelophilidae), six mites (Arachnida, Order Acarina), and 17 juvenile worms (Annelida, Class Oligochaeta).

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