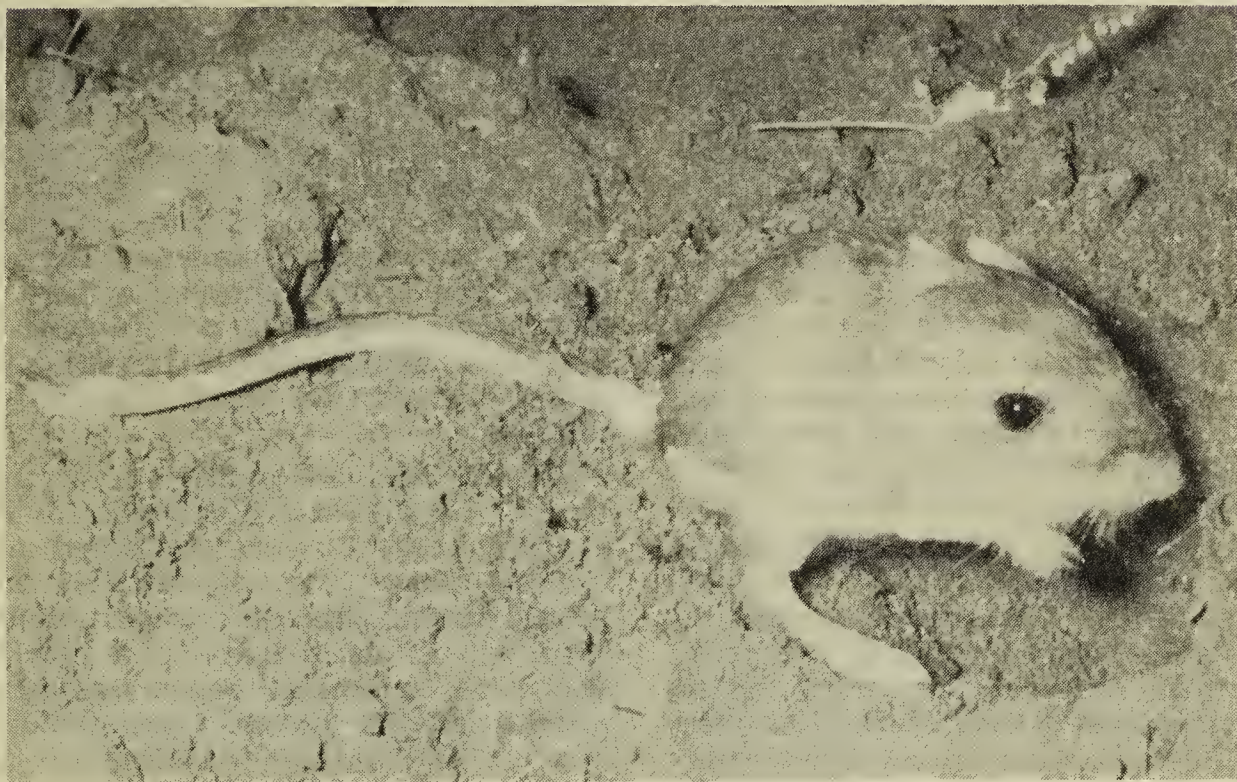


MUSEUM NOTES

Kangaroo Rat Colonies Found

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Kangaroo Rat in captivity

The Kangaroo Rat (*Dipodomys ordii*) has been known to occur in Saskatchewan since 1933 when the first specimen was found at Shackleton. Two additional specimens taken in 1934 (Tomkins) and in 1955 (Portreeve) established their occurrence over a wider area (Nero, 1955). The location of actual densites, however, has not been previously reported. In September, 1956 we examined several colony sites of this interesting rodent in the vicinity of the previous records. The objective of this report is to describe the location and nature of the den sites and other findings. The photographs were taken by Fyfe. Dr. George F. Ledingham kindly identified three species of plants which we collected.

Following newspaper publication of an article on Kangaroo Rats in July, 1955, correspondence was opened with the museum by Mr. Frank Buscholl of Sceptre, Sask., who reported that "for quite a few years" he had observed unknown animals in the sand hills south of Sceptre. His remarks were very apt . . . "They are hard to see as they are very shy. I have seen two which were run

over by cars but there are quite a number of them . . . You can see them at night when you drive through with lights . . . seemed to be out most of all around midnight and after. It is only a small area in which I have noticed them and for about four or five months of the season there is no water around this area." Mr. Buscholl added: ". . . I believe they fit the description of the Kangaroo Rat quite well . . ." In a letter in November, 1955 he reported: "I couldn't find them where I had so often seen them at night on the road. But I think I've found them now . . . I didn't see any of them . . . but the sign looks like theirs—fresh mounds, with open burrows on the side of a sand dune and trails dragged between their tracks by the 'tail'." At a later date he mentioned that he had first seen these animals as a child, 15 to 20 years ago.

We were unable to check Buscholl's highly suggestive reports until September of this year. In the afternoon of September 18 we contacted him and following his directions drove into an area frequently referred to

as the Great Sand Hills, some 10 miles south of Sceptre. These bare hills of sand stand out prominently from the surrounding vegetation: Sage (*Artemisia* sp.), Buckbrush or Snowberry (*Symphoricarpos* sp.), Rose (*Rosa* sp.), Creeping Juniper (*Juniperus* sp.), Thorny Buffalo Berry (*Sherperdia argenticia* Nutt.), Willow (*Salix* sp.), and Aspen (*Populus* sp.) (Fig. 1). The sand hills or dunes tend to be oval in shape, with a steep-sided, deep depression or "blow-out" in their centre. The long axis of each hill usually lies in a southeast-northwest direction, the fresh slope frequently being on the southeast side. At least one of the hills was more than 50 feet high (estimated), but some low, much eroded hills were also found.

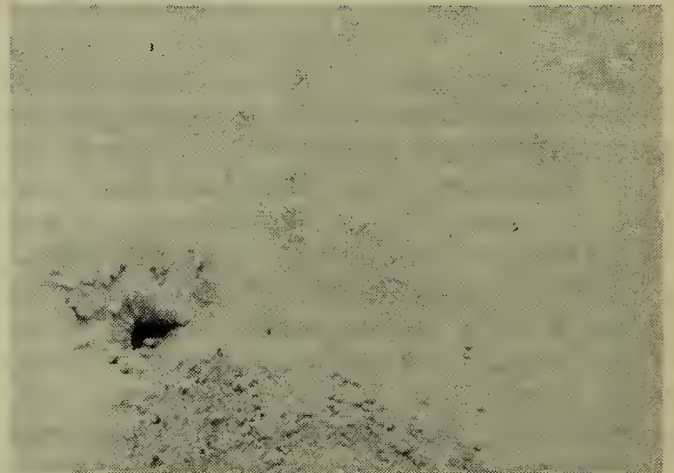
Kangaroo Rat signs were found exactly where Buscholl had indicated their presence. The most conspicuous signs were small mounds of fresh damp sand heaped up beside closed burrows about 3 inches in diameter. Such "dens" were most frequently right out on the open sand. Dens were

not "large mounds of earth pierced by numerous openings" as we had expected, but were simply burrows in the ground. As Cahalene pointed out: "some kangaroo rats, principally the smaller species, build their homes entirely below the original ground level and without the benefit of a mound." (1947:444). Occasionally we found 2 or 3 openings close together but frequently only a single opening was observed (see Fig. 2 and 3). Footprints were visible in many places and snake-like markings between the tracks showed where the tail had dragged. A number of bleached skulls found nearby were readily identified as Kangaroo Rat skulls.

During the following three nights (Sept. 18-20) we obtained 15 Rats in this area; 8 were collected alive in box-traps (Fig. 4) and by hand in the headlights of our car; 6 were captured in snap-traps and one was shot. The bait in all cases was wheat, peanut-butter having produced no results. We failed to visit the area in the early part of the night, but



Edge of a sand hill or dune; rose briars in foreground. Note wind ripple marks. (Fig. 1)



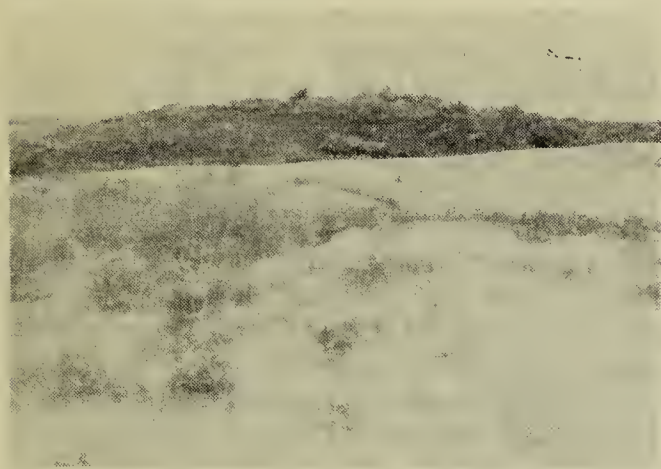
Partly closed burrow and recently excavated sand. *Psoralea* stems present. (Fig. 2)



Burrows in nearly vertical wall of bank. Note claw marks and fresh sand. (Fig. 3)



Live trap set beside den. Rose briar and *Psoralea* plants. (Fig. 4)



(Fig. 5) *Psoralea* on edge of dune

saw Rats from 10:30 p.m. until 4:00 a.m. during this period. We also took some in our traps between 4:00 a.m. and 6:00 a.m. They were found to be quite active one night even though it was quite windy.

Rat signs were profuse during the night and on some mornings, but if the day was dry and windy most tracks, burrow signs, etc., would be erased by noon. On quiet days Rat signs were visible all day long. The burrow openings were usually blocked by the Rats after they retired. Thus each night saw fresh digging. Seton wrote in regard to their tracks: "These are fresh every night, for the winds of noontime commonly sweep the plains again and leave the surface smooth for a new inscription." (1953:424).

Numerous insect tracks, Porcupine, Mule Deer, Coyote and Sharp-tailed Grouse tracks were common on the open sand. We also trapped Deer Mice on the dunes and a Red-backed Mouse in the bottom-land. Pocket mice (*Perognathus*), 18 were collected, and Pocket Gophers were common in the vicinity. Three kinds of hares occur: the Snowshoe Hare, Jackrabbit and Cottontail Rabbit (one was collected). Mule Deer and Prong-horned Antelope were reported to be common.

Most "colonies" or major groups of Kangaroo Rat burrows were located in or near tracts of *Psoralea lanceolata* Pursh, a legume which grew abundantly in certain places on almost every dune we examined. *Psoralea* appeared from a distance as a pale green patch on the "front" of a dune, usually on the down-wind slope (Fig. 5). We soon found that we could quickly ascertain the presence of Rats by first looking for these plants. Where the plants were



(Fig. 6) Kangaroo Rat signs

present we invariably found Rat signs. *Psoralea* was found in nearly pure stands, although on at least one dune, Sand Dock (*Rumex venosus* Pursh) was also present. Both of these plants spread by conspicuous underground rootstocks. The extent to which *Psoralea* figures as a food item in the diet of the Rats is unknown. Possibly the relationship is the result of the ground conditions selected by both plant and animal.

Rat trails often ran through the vegetation on the dunes for 50 to 100 feet (estimated), indicating a considerable movement from the den, presumably for food. Rats were also seen at some distance from the dunes, on the road in areas of sage as well as Buckbrush. One was caught on the road at least one mile from the dunes along a stubble and an alfalfa field.

A few burrows were found in nearly vertical walls on the dunes and in a road cut (Fig. 3). In one case a Rat, startled by our car lights, ran across the road and into a bank burrow about 18 inches above the ground. It peered out several times while the headlights were shining on the opening.

The number of Rats in the Sceptre sand hill area seemingly is quite high. Dens were found on nine hills within a 2 mile radius. Two hills which were carefully examined each held 24 and 34 dens (see Fig. 7). If Rats occur over as wide an area as the records suggest they do, it seems probable that the Saskatchewan Rat population numbers well in the thousands. We were able to check one large dune 6 miles west of Mendham on September 21, where, in spite of a pouring rain, Rat tracks were seen - again, in the vicinity of *Psoralea*. This extends the Saskat-

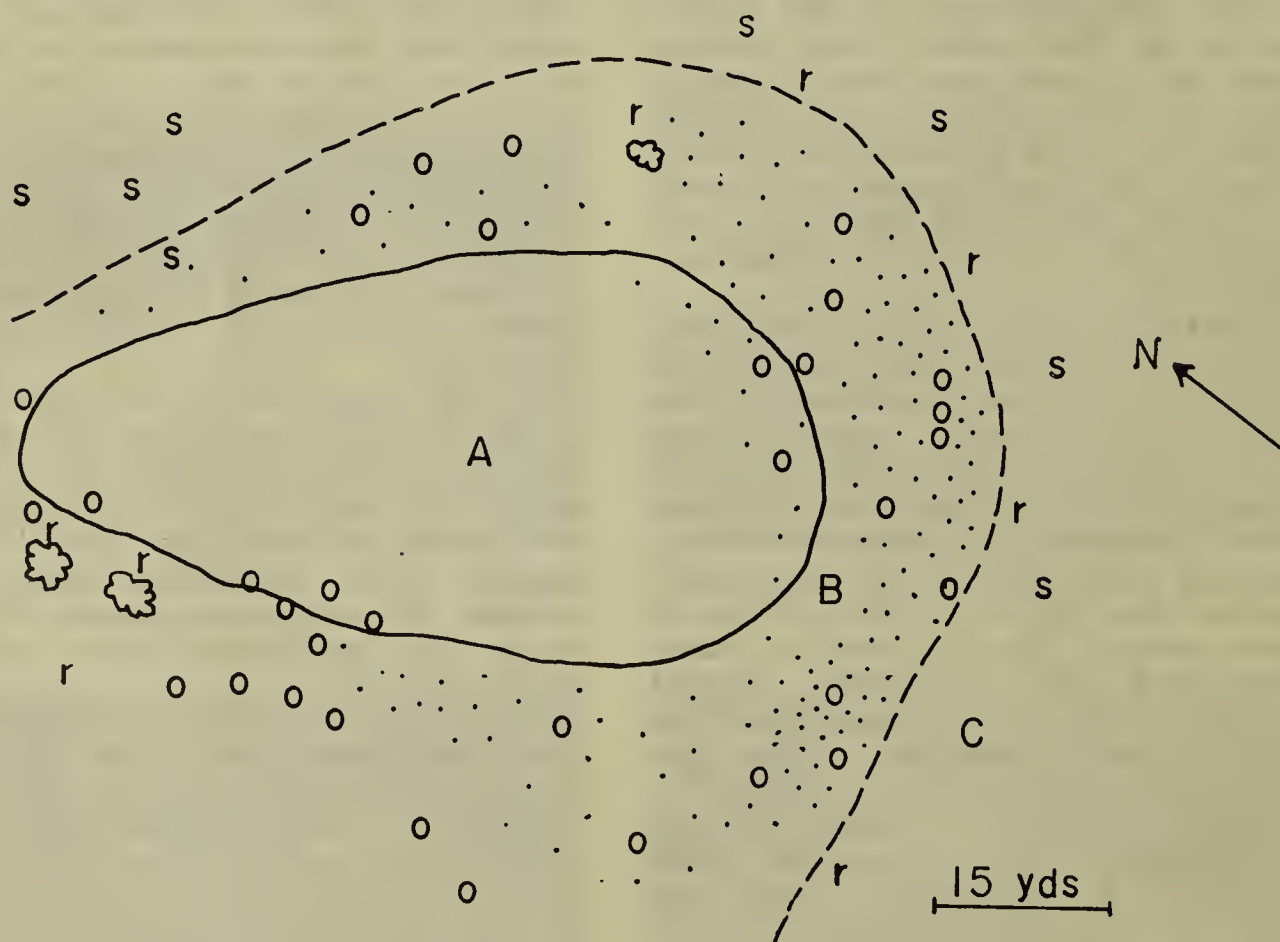
chewan range of the Kangaroo Rat to within 8 miles of the Alberta border. A single specimen taken at Medicine Hat, Alberta, in 1931 represents Canadian records outside of Saskatchewan.

The Ord Kangaroo Rat (our subspecies, *Dipodomys ordii terrosus*, is also called the Montana Kangaroo Rat (Anderson, 1946:131) is one of the most widely distributed of all the Kangaroo Rats, ranging from Saskatchewan to central Mexico and from Nebraska to California (Burt

and Grossenheider, 1952:97). It is found on a variety of soil types but generally prefers loose sandy soil in arid or semi-arid country. Its total distribution in Saskatchewan still remains to be determined. It may possibly be limited to sand dune areas but it should also occur in intervening places. The distinctive signs noted above should make it relatively easy to determine the presence of Rats at new points. It would be particularly interesting, e.g., to know if Rats occur north of the Saskatchewan River.

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0 FIG 7

Field sketch of a single sand blow-out showing location of 34 open Kangaroo Rat burrows (circles), presumably separate dens (September 19, 1956). Solid line indicates edge of actual blow-out; dashed line, extent of open sand and bottom of sand-hill. Maximum height of dune along solid line -about 35 feet. Sage plants - s; rose bushes - r; *Psoralea* indicated by stippling. Area A - clean, open sand, bare of vegetation; Area B surrounding A - sparsely vegetated; area C, heavily vegetated.