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Baiomys taylori.  By Bruce D. Eshelman and Guy N. Cameron
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**Baiomys True, 1894**

*Baiomys True, 1894:758. Type species *Hesperomys (Vesperomys) taylori* Thomas.*


1. Longitudinal, dorsal outline of the skull evenly convex; entoglossal process of the basioccipital pointed and directed anteriorly; body of incus flattened, short process knob-shaped; orbicular apophysis of malleus round to oblong; basiulc at tip, 3.0 to 3.9 mm long — *B. musculus*  
2. Longitudinal, dorsal outline of the skull not evenly convex (outline anteriorly deflected ventrally from frontoparietal suture); entoglossal process of the basioccipital rounded or absent; orbicular apophysis of malleus rounded to ovoid; basiulc notched at the tip and less than 2.9 mm long — *B. taylori*  

**Baiomys taylori (Thomas, 1887)**  
Northern Pygmy Mouse

*Hesperomys (Vesperomys) taylori* Thomas, 1887:66. Type locality San Diego, Duval Co., Texas.  
*Peromyscus paulus* J. A. Allen, 1903:598. Type locality Rio Sestin, northwestern Durango.  
*Peromyscus allex* Osgood, 1904:76. Type locality Colima, Colima.  
*Baiomys taylori* Mears, 1907:381; first use of name combination.

**CONTEXT AND CONTENT.** Context noted in generic summary above. The following eight subspecies were recognized by Hall (1981):

1. *B. t. allex* Osgood, 1904:76, see above.  
5. *B. t. falconer* Packard, 1960:645. Type locality 2 mi N, 10 mi E Ciudad del Maiz, 4,000 ft, San Luis Potosi.  
6. *B. t. paulus* J. A. Allen, 1903:598, see above.  
8. *B. t. taylori* Thomas, 1887:66, see above.

**DIAGNOSIS.** *Baiomys taylori* (Fig. 1) is the smaller of the two living species of pygmy mice and is the smallest North American rodent (Packard, 1960). Total length ranges from 87 to 123 mm. *B. taylori* is distinguished from *B. musculus* by a hind foot length of less than 16 mm, occipitoaural length less than 19 mm, and zygomatic breadth less than 10 mm. The rostrum of *B. taylori* (Fig. 2) is deflected ventrally at the frontoparietal suture rather than gradually curving toward the anteriormost point of the nasals (Packard, 1960). The dental formula is 1/1, c 0/0, p 0/0, m 3/3, total 16. Molars of *B. taylori* are more hypsodont than those of *B. musculus* and the cingular ridges and secondary cusps of the teeth are reduced or absent (Packard, 1960; Packard and Montgomery, 1978). The entoglossal process of the basioccipital is much reduced or absent (Packard, 1960; Hall, 1981). The basiulc is narrow, has a notched tip, and usually is less than 2.9 mm in length (Blair, 1942; Hall, 1981). The short processes of the incus are attenuated (Packard, 1960; Hall, 1981).

**GENERAL CHARACTERS.** Average adult body mass of *B. taylori* is 6 to 9.5 g (Hudson, 1965). A weighted average (subspecies combined) of data provided in Packard (1960) yields means and ranges (in parentheses) for the following external measurements (in mm) for adults: total length, 106.3 (87 to 123); length of tail vertebrae, 42 (34 to 53); body length, 64.1 (53 to 76); length of hind foot, 13.5 (12.5 to 15); length of ear from notch, 10.8 (9 to 12). Sexual dimorphism has not been reported for measured characters (Packard, 1960). Individuals from populations in northern portions of the range or higher elevations have larger external measurements than counterparts in the south or at lower altitudes (Packard, 1960).

Similarly derived means and ranges (in parentheses) for cranial measurements (in mm) are: occipitoaural length, 18.1 (16.8 to 19.4); zygomatic breadth, 9.5 (8.7 to 10.2); postpalatal length, 6.0 (5.9 to 7.3); least interorbital breadth, 3.5 (3.3 to 3.9); length of incisive foramina, 4.0 (3.5 to 4.3); length of rostrum, 6.1 (5.2 to 6.8); breadth of braincase, 8.7 (8.0 to 9.1); depth of cranium, 6.0 (6.0 to 7.0); and alveolar length of maxillary tooth row, 3.2 (3.1 to 3.4).

Juveniles are uniformly gray above and lighter below (Packard, 1960). The dorsal pelage of adults varies from reddish brown, through gray to almost black above and white to creamy buff or gray below. The tail is covered with short hairs. Color of tail differs among subspecies and may be uniformly gray or bicolor (lighter ventrally).

**DISTRIBUTION.** The southern limit of the geographic range of *B. taylori* (Fig. 3) is in central Mexico (approximately 19N) and extends north in three projections (Hall, 1981; Packard, 1960). The western projection extends along the west coast of Mexico to southern Sonora. A middle projection extends northwest through Durango and Chihuahua and reaches its northern limit in southeastern Arizona. The eastern projection extends from central Mexico, north to central Texas, and east along the Texas coast. Recent range expansions (Fig. 3) have occurred toward the Oklahoma border (Cokendolpher et al., 1979), and northwest and west onto the Texas High Plains (Diersing and Diersing, 1979; Stangl et al., 1983).

**FOSSIL RECORD.** Seven fossil species have been described for the genus (Gidley, 1922; Hibbard, 1953; Packard, 1960; Packard and Alvarez, 1965; Zakrzewski, 1969). According to Hibbard

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**Fig. 1.** The northern pygmy mouse (*Baiomys taylori taylori*).
that of B. rexroodi. Packard (1960) and Packard and Alvarez (1965) concluded that B. taylorti most likely was derived from a B. sourocheensis-B. minimus-B. intermedius-B. musculus line and split from B. musculus in the mid-Pleistocene. These authors also proposed central Mexico as the center of speciation for the genus and considered B. taylorti the more recent of the living species. Fossil remains of B. taylorti were identified from the Pleistocene faunas of Schulze Cave, Edwards Co., Texas (Dalquest et al., 1969) and Cueva Quebrada, Val Verde Co., Texas (Lundelius, 1984).

FORM. Pelage color of B. taylorti varies widely among the subspecies (Packard, 1960). The first evidence of postjuvenal molt is presence of bright brownish hairs on the head at 38 to 46 days of age (Blair, 1941; Packard, 1960). Sequence of the molt (Packard, 1960) is similar to that reported for Peromyscus (Collins, 1918, 1924; Hoffmeister, 1951). Postjuvenal molt is complete at 60 to 74 days (Blair, 1941; Packard, 1960). Duration of the molt is similar to that reported for Reithrodontomy (Layne, 1959). Adult pygmy mice molt during all months of the year; however, the annual molt usually starts at the beginning of the rainy season. This molt begins anteriorly and proceeds posteriorly over the back (Packard, 1960). The pelage of a melanistic individual contained longer and finer hairs than “normal” animals of the same sex and age (Packard, 1960).

The rostrum anterior to the frontonasal suture typically is deflected ventrally 3 to 5° (Packard, 1960). The shape of the basihyal is particularly useful in discriminating between B. taylorti and B. musculus. The entoglossal process points anteriorly in B. musculus and is rounded or absent in B. taylorti. Mean length of the basihyal is 2.18 mm and its shoulders are flattened. The hypophysial remains distinct throughout life. The body of the incus is round and the short process is attenuated; sides of the long limb are nearly parallel. The malleus possesses a round to nearly ovoid orbicular apophysis. The anterior process is pointed, the neck short and slightly recurved. Sides of the stapes are bowed and the muscular process is reduced or absent.

Wet weight of skeletal muscle mass is 24% of the total body mass (Hudeck and Privitera, 1975). Hudson (1965, 1967) found heart weights to be 43 to 49 mg. B. taylorti possesses a unilobar hemiglandular stomach considered the primitive condition, a condition found in most of the South American cricetines (Carleton, 1973). Zmorny et al. (1969) reported the pygmy mouse kidney...
MAMMALIAN SPECIES 285

contained 42% more glycerol and 33% more inorganic phosphate than laboratory mice. Blood calcium is 50% less than in laboratory mice (Cavanagh et al., 1969).

The length of the baculum averages 2.53 mm (Packard, 1960) and its greatest basal width is 0.5 mm (Blair, 1941). The shaft of the baculum of B. taylori is significantly shorter and thinner than that of B. musculus (Packard, 1960; Packard and Montgomery, 1979). The basal wings project unilaterally rather than anteriorly (Packard, 1960). The glans is simple, having only one bone and spongy vascularized layers that extend through most of its length (Hooper and Musser, 1964). Hooper (1959) described the glans as bell or urn shaped with a length and diameter of 3.7 and 1.9 mm, respectively. The glans is covered with small spines that point proximally.

The male accessory glands of the northern pygmy mouse are similar to those of peromyscines and South American cricetines; however, only one pair of ventral prostates (4 by 3 mm) are present in B. taylori (Arata, 1964; Voss and Liman, 1963). The accessory gland is smaller than the typical condition with the individual tubular elements unconnected and less than 1 mm long. The vesicular glands (8 by 2 mm) also are reduced, simple, and slightly recurved at the tip. Anterior prostates are about 4 mm long. A single pair of preputial glands measuring about 5 by 2 mm are present along the sides of the glans. Batomys, Ochrotomys, and Otocyonmys are the only forms that retain preputial glands in conjunction with the simple phallic type (Arata, 1964). FUNCTION. The general physiology of the pygmy mouse has been relatively well studied because of its small size, subtropical origin, and adaptability to laboratory environments. The small size of nestas makes these animals especially suitable for investigations of critical size and development of homeothermy.

Hudson (1965) found heart rates of B. taylori were 300 beats/min at 37°C and 756 beats/min at 13°C in resting animals. Resting heart rates produced a calculated stroke volume of 1.13 μl/breat and a cardiac output of 3.4 ml/min. Respiratory rates for an inactive animal ranged from 100 to 264 breaths/min at ambient temperatures of 33 and 13°C, respectively. Average metabolic rate of an animal at ambient temperatures of 30 to 33°C is 1.95 ml of O₂ g⁻¹ h⁻¹. By use of cold-stress techniques, Hudson (1965) determined maximum oxygen uptake of 10.4 ml O₂ g⁻¹ h⁻¹ occurred at ambient temperatures less than 10°C. A value of 12.3 ml O₂ g⁻¹ h⁻¹ at 23°C was recorded by Rosenmann and Morrison (1974) by use of a helium-oxygen technique. Sehmerman et al. (1961) also produced significantly higher O₂ uptake values from B. taylori on an exercise treadmill. The average body temperature of resting animals is 32 to 36°C and average thermal conductance is 0.4 to 0.48 ml O₂ g⁻¹ h⁻¹ °C⁻¹ (Hudson, 1965). The thermal neutral zone of these mice ranged from 29 to 36°C.

Batomys taylori readily enters shallow torpor at ambient temperatures near 20°C. Body temperature during these bouts is 23 to 25°C (Hudecki and Privitera, 1972; Hudson, 1965). If body temperature dropped below 22°C, animals could not be aroused without a source of external heat. Entrance into torpor is controlled by ambient temperature. Average time elapsed before entering torpor was 16.8 and 9.8 h for animals maintained at 20 or 9.5 to 17°C, respectively (Hudson, 1965). Length of torpor was variable and influenced by amount of food and water available before entrance into torpor and by ambient temperature (Hudecki and Privitera, 1972; Hudson, 1965; Zinman et al., 1969). Hudson (1965) determined a maximum duration of 20 h of torpor for animals maintained at ambient temperatures of 20°C. He also noted that animals that entered torpor spontaneously at ambient temperatures of 20°C aroused when ambient temperature decreased. An increase in minimum temperature of 3 to 5°C did not elicit arousal. Decreasing ambient temperature for animals maintained at 17°C did not stimulate arousal. Heart rates of torpid animals at 20.5°C were 108 beats/min and beats were skipped frequently. An ambient temperature of 15.5°C yielded a heart rate of 78 beats/min during torpor. Lowest respiratory rate during torpor is 12 breaths/min.

A large interscapular mass of brown adipose tissue is present in northern pygmy mice; however, other brown and white fat deposits are absent (Hudecki and Privitera, 1972, 1975). These studies indicated that 0-6 exposure to 15°C elicited changes in brown adipose tissue. Although the animals were still alive, glycerol and lipid particles decreased and mitochondrial swelling occurred to yield a calculated 208% increase in mitochondrial volume of brown fat. A significant decrease in lipid content was noted during torpor. Triacylglycerides were considered the main source of energy for torpor.

Estimating the volume of torpor, small to medium-sized lipid vacuoles reappeared in brown fat tissue (Hudecki and Privitera, 1972). Heart rates during arousal were as high as 800 beats/min, respiratory rates increased from 60 to 200 breaths/min, and metabolic rates increased 5 to 7 times above basal (Hudson, 1965). The period of most rapid warming, from 12°C to 18°C, was recorded at body temperatures of 26°C and was coincident with shivering. In general, arousal was slow for an animal of this size.

ONTOGENY AND REPRODUCTION. The northern pygmy mouse breeds year-round with reproductive peaks in the late fall and early spring (Asdell, 1964; Blair, 1941; Packard, 1960; Raun and Wilks, 1964). Blair (1941) reported an average of 27.6 days between litters for six breeding pairs in the laboratory. Delayed implantation has been reported for B. taylori (Quadagno et al., 1970) and is equal to that seen in other small mammals (Blair, 1941; Morrison et al., 1976). Litter sizes range from 1 to 5 with an average of 3.7 (Blair, 1941; Morrison et al., 1976; Packard, 1960; Quadagno et al., 1970; Raun and Wilks, 1964). Captive females weaned an average of 2.2 young per litter (Morrison et al., 1976).

Neonates are naked and pink at birth and become darkly pigmented within the first day. The eyes of the young are closed at birth and open at 12 to 15 days (Blair, 1941). The incisors are erupted at birth (Quadagno and Banks, 1970). Packard (1960) found skull sutures closed at approximately 50 days of age. Shortly after birth the young attach to the mammas of the mother and only become detached at night while the mother forages (Quadagno and Banks, 1970; Raun and Wilks, 1964).

Young are weaned at 17 to 24 days (Blair, 1941; Packard, 1960; Quadagno and Banks, 1970). Youngest age of a female at conception was reported as 28 days (Hudson, 1974) and 44 days (Blair, 1941). Blair (1941) reported an average age of females at sexual maturity of 51.5 days. Quadagno et al. (1970) found that males attained sexual maturity between 70 and 80 days of age and females between 60 and 90 days. Growth of B. taylori follows a sigmoidal pattern and is primarily within the first 35 days of age (Hudick, 1974). The first phase of growth (0 to 11 days) yields instantaneous growth rates of 7.29 to 7.5% of body mass/day. First increase in metabolic rate in response to cold is coincident with the ability to crawl (5 days) at which time approximately 1 mm of underfur is present (Chew and Spencer, 1967). The latter authors concluded that movement is necessary for an initial homeothermic response. Additionally, a minimum body size of 2.4 g must be attained, regardless of age, before complete thermoregulatory capability is reached. The second phase of growth occurs from 11 to 17 days of age and produces instantaneous growth rate of 3.3 to 4.0% body mass/day (Hudick, 1974). Sexual maturity is attained by 50 days of age (Blair, 1941) and little addition to body mass occurs after the age of 20 weeks (Morrison et al., 1977). Initiation of the second phase of growth is coincident with the full development of homeothermy at body weights of 2 to 2.5 g. B. taylori does not increase metabolism at ambient temperatures of 20°C until 5 to 8 days old (Chew and Spencer, 1967). The capability to maintain adult body temperatures (36 to 37°C) at ambient temperatures of 30°C is reached at 10 to 15 days of age (Hudson, 1974).

Hudson (1974) found no relationship between litter size (range 1 to 5) and growth rate of young, but postpartum pregnancy seemed to delay development. Litter size is not correlated with age at which adult body temperature is reached.

The northern pygmy mouse is polyestrous (Blair, 1941). Duration of the average estrous cycle is approximately 7.5 days (Hudick, 1974; Quadagno et al., 1970). Average duration of stages of the cycle was reported as: proestrus, 12 h; estrus, 24 h; metestrus, 48 h; and diestrus, 96 h (Quadagno et al., 1970). Frequent examples of postpartum estrus have been recorded (Hudson, 1974).

ECOLOGY. During a 9-day study, Stickel and Stickel (1949) estimated summer densities at approximately 17 to 19.5/ha. Other estimates range from 2 to 84 mice/ha (Grant et al., 1983; Petersen, 1975; Raun and Wilks, 1964; Schmidly, 1983). Stickel and Stickel (1949) reported that populations in old fields were stable at 2/ha; unmowed highway rights-of-way contained higher but more variable densities
Densities were lowest during the summer months. During a 2.5-year study, densities were 12.3 to 37 mice/ha (Raun and Wilks, 1964). Of laboratory studies conducted densities of 77 to 184 mice/ha in old field-postoak savanna habitat in eastern Texas during a 6-year study. Grant et al. (1985) and Raun and Wilks (1964) found lowest densities during early summer months (May–June) and highest densities in early fall and winter. Sex ratio of the population studied by Raun and Wilks (1964) was 1:1 and adults composed 75% of the population. Forty-five percent of marked adults were present for at least 2 months; 10% for 5 months; and 5% remained after 7 months. Mean survival for this natural population was 5 months, including a period of time for development and poor trapability of young mice of one of their small size. Longest known survivor of a marked individual in the field was 59 weeks.

Morrison et al. (1977b) reported a median life span of 23 weeks and a maximum life span of 178 weeks for laboratory-reared animals. Neotnatal mortality is reported as 4.8% at 1 week of age and 19.5% at 1 month of age for laboratory-reared animals (Morrison et al., 1977b). Morrison et al. (1977b) suggested a two-stage survival curve with a period of reduced mortality between 50 and 70 weeks of age.

Sherman live traps or snap traps were equally successful in capturing B. taylori (Powell, 1968) and pitfall traps were less effective for capturing these mice (Peterson, 1980).

**Baiomys taylori** occurs in a wide variety of habitats, including coastal prairie (Blair, 1941, 1956; Schmidly, 1983), midgrass prairie (Stickle and Stickle, 1949), mixed-desert shrub (Blair, 1950, 1952), prickly pear (Opuntia lindei) short grass communities (Raun and Wilks, 1964), postoak savanna (Grant et al., 1964, pine-oak forest (Dalquest, 1968; Schmidly, 1983), and oak-hickory associations (Blair, 1950; Hunsker et al., 1959). The northern pygmy mouse has not been captured above 2,436 m and generally occurs in more xeric habitats than its congener, *B. musculus* (Hooper, 1952; Packard, 1960). Highest population densities typically are found in areas of dense ground cover, particularly in prickly pear (Opuntia lindei) short grass communities (Raun and Wilks, 1964). Microhabitat distribution of animals is correlated with the distribution of prickly pear. This cactus provides protection of grasses from grazing by cattle and serves as a refuge for the pygmy mouse. In areas with a dense litter layer or thick grass mat, *B. taylori* built runways similar to but smaller than those built by *Microtus* (Blair, 1941; Packard, 1960; Raun and Wilks, 1964; Stickle and Stickle, 1949).

Dense ground cover is a necessary component of optimal habitat for northern pygmy mice and any disturbance that reduces ground cover can reduce population density. Stickle and Stickle (1949) captured 28 *B. taylori* in areas of 1-year-old burns or areas of intense cattle grazing. Burning was more detrimental to grazing because it had completely removed the cover of dense grass that was present in 1940. Powell (1968) concluded that cover was an integral component of the habitat of *B. taylori*. Two years after disturbance of a previously uniform habitat by applications of five different brush-control treatments, population densities of northern pygmy mice were highest where treatments permitted growth of the most ground cover.

Because of the affinity for cover, highways act as barriers to dispersal of pygmy mice (Wilkins, 1982). Although *B. taylori* inhabited highway rights-of-way (Schmidly, 1983), less than 2% of a marked population crossed roads 9.5 to 12.5 km wide. No animals were recaptured from areas that required longer crossings (Wilkins, 1982).

Stems and fruits of the prickly pear are the primary source of food and water for the pygmy mouse in xeric habitats. Grass seeds, grass leaves, mesquite (Prosopis juliflora) beans, and granjeno (Cel- tis pallida) berries are also eaten (Raun and Wilks, 1964). Captive mice readily kill and eat insects, terrestrial snails (Helcionia orbiculata; Johnson, 1959), and small snails (Leptotyphlops dulcis and Tropidoclonion lineatum; Pitts, 1978) even when herbageous foods are readily available. Raun and Wilks (1964) found many *H. orbiculata* shells opened by rodents in the field and presumed *B. taylori* to be partially responsible, although other rodents known to eat snails also were present.

Home range estimates of *B. taylori* range from 45 to 729 m². Average (1967) home ranges (determined as the area an animal was trapped in plus one half the distance to the nearest trap) were not significantly different in south Texas (Raun and Wilks, 1964). Home ranges were smaller in areas of less cover. Considerable overlap of home ranges within and between sexes suggested a low level of territoriality and supported laboratory observations leading to the conclusion that *B. taylori* was socially tolerant of other individuals (Blair, 1941; Packard, 1960).

The most significant interspecific interaction occurs with the hisdip cotton rat, *Sigmodon hispidus*. Sticket and Stickle (1949) found habitat segregation between the cotton rat and *B. taylori*, whereas Raun and Wilks (1964) concluded that intense interspecific competition for space with *S. hispidus* led to a decrease in *B. taylori* numbers. As density of cotton rats increased, pygmy mice were captured more frequently in marginal habitats and cotton rats were captured in areas that previously supported *B. taylori*. Schmidly (1968) reported lowest seasonal densities of pygmy mice contaminant with their cotton rat. In contrast, Grant et al. (1985) found no evidence of interspecific competition among *B. taylori*, *S. hispidus*, *Reithrodontomys fulvescens*, and *Peromyscus leucopus* in postoak-savanna habitat of east-central Texas. Laboratory experiments demonstrated that *Baiomys* was significantly more aggressive when paired with *R. fulvescens* than when paired with *S. hispidus* in the absence of cover (Putera and Grant, 1985). *Sigmodon* killed *Baiomys* in three of 12 pairings when cover was absent. When cover was present, all species showed avoidance behavior and spent most of their time in areas of heavy cover.

Little evidence for competition between *B. taylori* and other sympatric small rodents is available. *R. fulvescens* and *R. megalotis* each have been caught in the same trap with pygmy mice. Little adverse effect was noted on either of the species involved in multiple captures (Peterson, 1975). However, Putera and Grant (1985) demonstrated that *B. taylori* was dominant to *R. megalotis* and *R. fulvescens* in laboratory encounters. *B. taylori* are sympatric with *Peromyscus leucopus*, *Oryzomys palustris*, *Mus musculus*, *Onychomys leucogaster*, *O. torridus*, *Cryptotis parva*, and *Neotoma micropus* (Blair, 1950; Hoffmeister, 1956; Packard, 1960; Petersen, 1975; Raun and Wilks, 1964). Highest population densities are typically found in areas of dense ground cover, particularly in prickly pear (Opuntia lindei) short grass communities (Raun and Wilks, 1964). Microhabitat distribution of animals is correlated with the distribution of prickly pear. This cactus provides protection of grasses from grazing by cattle and serves as a refuge for the pygmy mouse. In areas with a dense litter layer or thick grass mat, *B. taylori* built runways similar to but smaller than those built by *Microtus* (Blair, 1941; Packard, 1960; Raun and Wilks, 1964; Stickle and Stickle, 1949).

Snakes are the primary predators of *B. taylori* in south Texas (Raun and Wilks, 1964). Based on analyses of stomach contents, the northern pygmy mouse was the third most important prey species by volume for rattlesnakes (*Crotalus atrox*) and the most frequently recorded prey of the common king snake (*Lampropeltis getula piscivorea*). These snake species also were found in stomachs of coachwhips (*Masticophis flagellum*). Several authors have confirmed predation of *B. taylori* by barn owls (*Tyto alba*) and great-horned owls (*Bubo virginianus*; Hamilton and Neill, 1981; Raun, 1960; Twente and Baker, 1951). Because of its crepuscular nature, the northern pygmy mouse also could be at risk of predation from many other raptors.

The primary mammalian predator probably is the coyote (*Canis latrans*), although raccoons (*Procyon lotor*), striped skunks (*Mephitis mephitis*), and shrews (*Cryptotis parva*) also may eat pygmy mice (Raun and Wilks, 1964).

**Baiomys taylori** is host to the flea species *Jellisonia ironi* and *Polygenis sp.* (Petersen, 1978). Jameson and Whiteman (1975) described the mite *Rafordia hamiltoni* from northern pygmy mice. A *Brucella*-like bacteria was isolated from these mice; however, this bacteria was not confirmed as *Brucella abortus* (Boeer et al., 1980). These rodents can not serve as a host reservoir for *Brucella abortus* (Boeer et al., 1980).

**BEHAVIOR.** The activity of *B. taylori* is best classified as crepuscular because these mice often are the first to be caught in traps in the evening (Packard, 1960). Captive animals are most active in dim or diffuse light.

Receptive females typically display a lordotic posture (*Estep and Dewsbury, 1976*). Male mice mount the female from behind and securely grasp her neck, becoming well-entrenched. These males are naively captured on a single deep thrust was followed by a series of extravginal, shallow thrusts. Male and female turned rear to rear during copulation. Ejaculation was achieved after one insertion and copulation ceased.
after one ejaculation. Mean latency for intromission was highly variable and averaged 98 min. Mean duration of the lock was 33.5 s. The ejaculatory behavior was consistent with predictions based on baculum morphology and reduced accessory glands (Estep and Dewsbury, 1976).

In captivity, both male and female mice care for the young (Blair, 1941; Packard, 1960). Male parental care consists of grooming and returning young to the nest. Cross-fostering studies indicated that time spent with foster parents of a different species (Mus musculus) until weaning may affect adult behaviors and reactions to conspecífics. Cross-fostered adult females spent significantly more time associated with animals of their foster species. However, males did not show a significant response. The aversion of B. taylori show to open areas in laboratory studies (Quadagno and Banks, 1970; Wilson et al., 1976) decreases when they are fostered by Mus suggesting that aversion to open areas might have a learned component (Quadagno and Banks, 1970).

Although Davis (1974) suggested that pygmy mice construct burrow systems, field evidence is lacking (Raun and Wilks, 1964). However, the extremely hard clay soils in the study area of the latter authors might have precluded burrow construction. The nest of B. taylori is usually a ball formed of finely shredded grass, corn silk, or cotton fibers (Packard, 1960; Raun and Wilks, 1964; Thomas, 1888). The central cavity of the nest may contain fur and one or two exits. Several runways lead from the nest. Nests usually are found under fallen logs, prostrate cactus pads, or within thick clumps of grass. More than one nest may be maintained by the same individual.

Two audible vocalizations were described for the northern pygmy mouse (Blair, 1941; Packard, 1960). The most common vocalization is a high-pitched squeal similar to calls of grasshopper mice (Onychomys leucogaster) and fulvous harvest mice (Reithrodontomys fulvescens). While emitting this call, the head of the animal is thrown forward and upward. Blair (1941) also heard a scolding sound given by a female with young when approached by males.

The pygmy mouse is “an excellent swimmer” although the fur becomes soaked after about 1 min in water (Blair, 1941).

**GENETICS.** The karyotype of B. taylori consists of a 2n of 48 acrocentric chromosomes (Hsu and Benirschke, 1967; Yates et al., 1979). This karyotype differs vastly from that of B. musculus, which is composed of 10 pairs of biarmed and 13 pairs of acrocentric autosomes (Lee and Elder, 1977). The karyotype of B. taylori resembles closely that of Peromyscus eremicus and often is used as an outgroup comparison for the peromyscines (Patton et al., 1981; Robbins and Baker, 1980; Yates et al., 1979). C-banding preparations of the chromosome reveal only centromeric heterochromatin, and sex determination is of the XX/XY type. The X chromosome is large and subtelocentric and the Y is a small subtelocentric (Hsu and Benirschke, 1967; Lee and Elder, 1977).

Both meiosis (Packard, 1960) and allismus (Stickel and Stickel, 1949) have been reported for the species. Fertile hybrid offspring have been obtained from laboratory crosses of B. t. subater and B. t. ator (Blair and Blossom, 1948). Hybridization of species within the genus has not been reported (Packard, 1960).

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