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## JERBOAS FROM MONGOLIA<sup>1</sup>

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A very beautiful series of jerboas from several localities in the Gobi Desert was secured by the Asiatic Expeditions of The American Museum of Natural History under the leadership of Mr. Roy Chapman Andrews. Although the species represented are few, they are of unusual interest, for they include a very interesting new *Allactaga*, the five-toed jerboa, and a striking new genus related to *Dipus*, the three-toed jerboa. The series of *Allactaga mongolica* may be considered as typical and shows, on comparison with specimens of the species from Chili, China, that the latter is subspecifically distinct and may bear the name *annulata* given many years ago by Milne-Edwards, but latterly placed in synonymy.

### *Allactaga mongolica* (Radde)

*Dipus jaculus mongolica* RADDE, 1862, 'Reisen im Suden von Ost-Sibirien,' I, p. 170, Pl. VIII, figs. 3a-3b.

A five-toed, long-eared jerboa, buffy gray above, clear white below; the tail-tip with a flattened tuft, white at its base, black in its middle three-fourths, and white terminally.

This characteristic desert species was found in abundance by the Expeditions of 1922 and 1923, and a fine series was secured at localities in the central Gobi, namely, Turin, Artsa Bogdo, Tsagan Nor, Hurum Tu, Gun Burte, Sain Noin Khan, Ussuk, Loh, near Tze-Tsen Wang, twenty miles southwest of Urga, and on the Tola River, eighty miles west of that city, as well as in the vicinity of Erhlien, Sair Usu, and east as far as Iren Dbasu. Among the specimens taken during May and early June there is a very striking preponderance of males. Thus, of the one hundred and seventeen skins taken in May, all but fifteen were males, indicating some difference in habits in the earlier part of the season; for in August the proportion is just reversed, with only five males to fourteen females. The type locality of this species is Tarei Nor, whence Radde had fourteen specimens on which his description was based.

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<sup>1</sup>Publications of the Asiatic Expeditions of The American Museum of Natural History. Contribution No. 42.

**Allactaga mongolica annulata** (Milne-Edwards)

*Dipus annulatus* MILNE-EDWARDS, 1867, Ann. des. Sci. Nat., (5) VII, p. 376.

Milne-Edwards' name is currently regarded as a synonym of *A. mongolica*. The original specimens were obtained by Père A. David at or near the southwestern border of the Mongolian plateau and others were noted by him at Swenhoafu, Chili Province. Comparison of a skin from two hundred kilometers northeast of Shehol in that province reveals the fact that the latter is different from true *mongolica* in its darker muzzle and forehead, contrasting sharply with the white cheeks; the much darker back, which is nearly solid brown in the specimen; and the dark outer sides of the tibiae. The black band of the tail-tuft is also somewhat shorter than in true *mongolica* of the Gobi Desert. The skull of the Chili animal differs in its narrower interpterygoid fossa and in having the small palatal vacuities narrowed to mere slits instead of being broadly elliptical. It also averages slightly larger, its greatest length being 40–40.5 instead of 37–39 mm., as in the series from the Gobi. These differences come out in Milne-Edwards' plates ('Recherches,' 1868–1874, Pls. x, xa, fig. 3-3f) of *Dipus annulatus*, so that his name may be considered applicable in a subspecific sense to the southeastern darker form of this jerboa. The exact type locality is not stated but was probably not very far west of Peking.

**Allactaga bullata**, new species

TYPE.—Adult male, skin and skull, No. 58723, A. M. N. H., from Tsagan Nor, Mongolia. July 5, 1922. Third Asiatic Expedition.

DESCRIPTION.—Externally similar to *A. mongolica* but slightly smaller. Skull smaller, with more nearly vertical upper incisors and very much larger bullae that nearly meet at their anterior ends.

Color and pattern indistinguishable from those of *A. mongolica*. Dorsal surface of head, ears, body, and outer sides of thighs, grayish buff, brighter on the sides of the face below the ears and on the back and thighs; grayer on the muzzle, forehead, and sides of body. The individual hairs are slaty at base with a short buffy, sub-terminal ring, and a black tip, sometimes minute, sometimes half the length of the buffy ring. Mixed with these on the back are scattered longer black hairs. An indistinct spot above the eye, paler gray, and at the posterior base of each ear, a spot of pure white. Lower side of body, forearms, feet, and a prominent hip-stripe pure white to the roots of the hairs. Tail white all around for about 8 mm. at base, then pale ochraceous above to the beginning of the terminal tuft which is white for about 10 mm. at its base, slightly darkened by black hairs among the white; then follows the main part of the tuft which is distichous, blackish for about 45 mm. in the median line, with short white tip measuring 20 mm. in the median line. The ventral side of the tail is white except that the black portion of the tuft is penetrated by a narrow extension of the white medially. The hind feet are dark brownish in a narrow line

along the sole, with a larger blackish area beneath the basal phalanges. Median toe of hind foot exceeding the lateral toes by about 5 mm. Incisors white.

**SKULL.**—The skull differs notably from that of *A. mongolica* in its smaller size, in having its upper incisors very much less thrown forward, in its more abruptly expanded braincase behind the interorbital constriction, and most strikingly in the very much larger audital bullæ. These are about three times the volume of those in the larger species and are so closely approximated medially that the basioccipital is one-half as broad as in the latter, while their extreme tips anteriorly are nearly in contact. The interparietal differs in having its anterior edge bracket-shaped, with the median point anteriormost. The cheek teeth show no difference except in size.

**MEASUREMENTS.**—The type was measured by the collector as follows: head and body, 105 mm.; tail, 188; hind foot, 70; ear, 40. In the dry skin the hind foot now measures 65 mm. The skull measures: occipito-nasal length, 34 mm.; condylobasal length, 31; palatal length, 21; diastema, 10.5; incisive foramina, 6; nasals, 12.6; interorbital constriction, 10.5; zygomatic width, 24; mastoid width, 22.3; greatest diameters of bullæ,  $10.3 \times 7.6$ ; upper cheek teeth, 6.5; lower cheek teeth, 6.3.

So similar is this species to *A. mongolica* in details of external appearance that the two are not distinguishable except by the slightly larger size of the latter, as seen especially in its somewhat longer ears. The skull, however, with its very much larger bullæ, is at once strikingly different. The new species does not seem to show relationship with any of those so far described, and forms a fine addition to the known fauna of the Gobi. It is apparently less common than *A. mongolica*. The series at hand is from the following localities in the central Gobi: Tsagan Nor, Sair Usu, fifty miles west and one hundred and sixty miles southeast of Sair Usu, and twenty-three miles south of Erhlien.

#### ***Dipus sowerbyi* Thomas**

*Dipus sowerbyi* THOMAS, 1908, Ann. Mag. Nat. Hist., (8) II, p. 307.

A jerboa with but three toes on the hind foot, the upper incisors orange and grooved; color, buffy above, white below, the flattened tuft at the tip of the tail black, with the end white.

A splendid series of this bright-buffy jerboa was secured from various localities in the Gobi Desert, including Iren Dabasu on the east, Erhlien, Loh, Turin, Artsa Bogdo to Tsagan Nor on the west. The type locality is Yulinfu, in Shensi province, at the southern edge of the Ordos desert, but although the only topotype available is much brighter buff or ochraceous than the average of the Mongolian series, there are occasional specimens that match it in every detail, so that for the present these latter are best considered *D. sowerbyi*. It seems likely from a careful comparison of descriptions that this should be regarded as a subspecies of *D. sagitta* typical in eastern Russia. According to Thomas its muzzle is broader and color slightly brighter, but there seem to be few other appreciable differences.

**STYLODIPUS**, new genus

Structurally resembling *Dipus* in external characters, but the hind foot proportionally shorter, and the flattened tail tuft not so strictly terminal, but beginning at about half-way on the length of the tail and gradually increasing in width distally. Hind foot with but three toes. Skull in general like that of *Dipus*, but the bullæ much larger, their mastoid portion produced some 2 mm. behind the occipital bone, whereas in *Dipus* they do not quite reach that level. Palate with a pair of small oval foramina as in *Dipus*, and in addition a second minute pair just back of the last molars. Incisors white, the upper pair grooved. The minute upper premolar more reduced than in *Dipus*, a mere spicule, not reaching the crown level of the molars; the latter with the reëntrant enamel folds much more nearly of equal depth on the inner and the outer sides, resulting in an approximately figure-eight pattern, with slight wear.

The genotype and only referred species is the following.

**Stylodipus andrewsi**, new species

TYPE.—Adult male, skin and skull, No. 58549, A. M. N. H., from Ussuk, Mongolia. June 22, 1922. Third Asiatic Expedition.

DESCRIPTION.—Externally like *Dipus*, but the hind feet proportionally shorter, the tail pen-shaped, thick, and with the terminal half distichous, gradually increasing in width to the tip (Fig. 1).

Entire dorsal surface, including head, body, outer side of ears, the arms and thighs as far as wrist and ankle, sandy colored or pale buff, evenly darkened by black hairs or black-tipped hairs. The hairs of the back are "deep neutral gray" (Ridgway, 1912) at base, with a tip of "light ochraceous buff" and a minute black point. An indistinct whitish spot is present above the eye and a slightly paler area below it. A small tuft of silky white hairs clothes the inside of the ear at its base and there is a distinct postauricular white patch. The fore feet, backs of hind feet, a prominent stripe running forward across the back of the hip, and the entire ventral surface of the body are pure white to the roots of the hairs. The soles of the hind feet are "dusky drab," the long hairs under the toes much shorter and softer than in *Dipus sowerbyi*. The tail is white all around in a narrow ring at the extreme base. Its middle third is apparently somewhat thicker than the base or the tip; in color it is like the back except that toward the end the dusky tips of the hairs are long, with pale bases, giving a smoky tint to the expanded, pen-shaped terminal portion. Below, the short hairs are very pale buffy along the median line, the terminal half of the tail with a buffy lateral border and dusky edge. Just below the tip the whitish bases of the long hairs form an indistinct pale area.

SKULL (Figs. 2, 3).—The great enlargement of the upper portion of the audital bullæ results in a corresponding compression of the interparietal, so that it becomes nearly triangular in outline as compared with the faintly pentagonal one of *Dipus sowerbyi*. The lacrymal is reduced also as compared with the latter, but the breadth of the vertical portion of the zygomatic plate is much the same in both. Interesting is the great reduction of the small anterior upper premolar, which is a minute spicule reaching about half-way to the crown of the first molar. The reëntrant enamel folds of the upper molars are nearly equal on both inner and outer sides, and nearly or quite touch at the center of the tooth, the outer fold, however,

slightly more posterior than the inner. The lower posterior molar lacks a reëntrant from the inner side. The incisors are white instead of yellow, the upper ones with a median groove.

MEASUREMENTS.—In proportions the ears, tail, and hind foot seem rather shorter than in the species of *Allactaga* and *Dipus* found living in the same region. The collector's measurements are: head and body, 128 mm.; tail, 150; hind foot, 55; ear, 16. The skull measures: greatest length, 33 mm.; condylobasal length, 30.5;



Fig. 1.

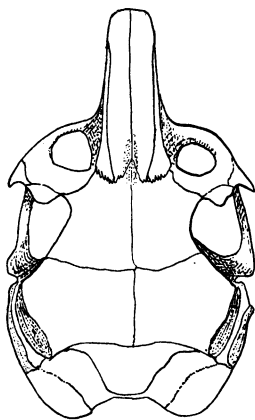


Fig. 2.

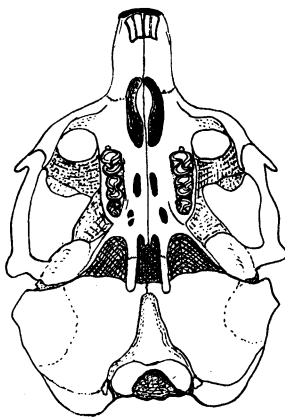


Fig. 3.

Fig. 1. *Stylodipus andrewsi*, new species. Dorsal aspect of the distichous tail.  $\times 4/7$ .

Fig. 2. *Stylodipus andrewsi*, new species. Outline of cranium from above.  $\times 3/2$ . The type, No. 58549.

Fig. 3. The same in ventral aspect.  $\times 3/2$ . (Outlines with camera lucida.)

palatal length, 19; diastema, 8.2; incisive foramina, 6; zygomatic breadth, 22.8; interorbital breadth, 10.0; breadth across auditory openings, 22; diameters of bulla (ventral aspect),  $10.2 \times 9.8$ ; vertical depth of bulla, 13; width across first upper molars, 7.4; upper cheek teeth, 6; length of mandible, 22; lower cheek teeth, 6.

This very interesting new jerboa is obviously related to *Dipus*, but shows a greater inflation of the auditory region and a consequent change in the shape of the surrounding bones. The tendency to reduction of the small first upper premolar is carried farther, and there is an approach to equality in the development of the enamel folds on inner and outer

sides of the molars. The shape of the tail is more like that of *Pygeretmus*, pen-like instead of having merely a terminal tuft or expansion.

This is a species of the Gobi Desert. The small series obtained is from Ussuk, Tsagan Nor, Loh, and near Erhlien. It seems fitting that the name of the able leader of the Asiatic Expeditions, Mr. Roy Chapman Andrews, should be associated with this handsome jerboa.