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LAGOMORPHS COLLECTED BY THE ASIATIC EXPEDITIONS¹

BY GLOVER M. ALLEN

The fine series of lagomorphs secured by the Asiatic Expeditions, under the leadership of Dr. Roy Chapman Andrews, includes some 85 hares from such widely separated localities as Mongolia and the Chinese provinces of Shensi, Chihli, Fukien and Yunnan, as well as 136 skins of mouse-hares or pikas chiefly from the Gobi Desert region. The latter appear to represent four well-marked types of which two, *Ochotona pallasii* and *O. dauurica*, are characteristic of the Gobi; a third, *O. hyperborea mantchurica*, is more northern, reaching the edge of the Mongolian plateau; while the fourth type is more characteristic of the high mountains of western China and is allied to the small brown species, *O. tibetana*. The large number of hares available has led me to attempt a revision of the Chinese forms of the black-tailed group to the extent of indicating their subspecific relationship and allocating some of the names previously applied. The harsh-haired rabbit, *Lepus sinensis*, is now referred to the genus *Caprolagus* and a new race is described from the mountains of northwestern Fukien; while from western Yunnan is described a new species of hare allied to *Lepus nigricollis* of India.

***Ochotona hyperborea mantchurica* Thomas**

Ochotona (Pika) hyperborea mantchurica THOMAS, 1909, Ann. Mag. Nat. Hist., (8) IV, p. 504.

A small species, with palatal and incisive foramina separate. Thomas has described the race of eastern Manchuria as slightly larger and brighter russet in color than specimens from the upper Amur region representing Schrenck's *O. h. cinereo-fusca*, and at the same time suggests that these may be a species distinct from *O. hyperborea*, though closely allied to it. The skulls of the latter are much smaller (skull length 31 as against about 40 mm.) and the summer pelage is apparently grayer.

¹Publications of the Asiatic Expeditions of The American Museum of Natural History. Contribution No. 74.

A series of over thirty skins was taken at a locality 45 miles north-east of Urga, Mongolia, by the Asiatic Expeditions. These average a very little smaller in measurements than those given for the Mantchurian race, but the largest individuals are scarcely inferior to the latter, so that without Mantchurian specimens for comparison they seem best considered identical. The presence of a colony of this boreal species near Urga brings its range well to the westward and carries its southern limit to the northern edge of the Gobi Desert. Most of the adults taken July 25-29 have acquired the bright russet pelage of summer though a few still retain on the rump and flanks a remnant of the longer winter fur of a pale ochraceous and black, while in one taken September 11 the new winter coat is coming in on the head, shoulders, and anterior back. The immature individuals of late July are in a dark gray pelage much intermixed with black, while adults are bright russet above, darkened on the middle of the back by black hairs, and on the belly the light tips of the hairs are washed with rusty.

***Ochotona dauurica* (Pallas)**

Lepus dauuricus PALLAS, 1776, 'Reise,' III, p. 692.

A uniform sandy ochraceous above, paler on the sides, feet white washed with buff above; prominent pale buffy patches behind ears. Below, the hairs are slaty at base, tipped with white; a buffy collar on the throat extends back medially as a wash of the same color to chest.

Superficially this species greatly resembles *O. pallasii* which occurs in the same localities with it in the Gobi Desert but may be recognized at once by its feet, the toe pads of which are completely hidden by short forwardly directed hairs, while in *O. pallasii* the pads are naked and obvious at a glance. In details the present species is slightly paler in color, the ochraceous tints not quite as bright on cheeks, sides and rump, the bright tuft of hair below the ear is lacking, and the upper lip is narrowly white like the chin instead of ochraceous like the rest of the head.

A specimen from Turin, Mongolia, May 11, is still in the full soft coat of winter, a pale and uniform ochraceous buff-slightly darkened by the minute black tips of the hairs above. Specimens taken about May 18-20 show the new hair coming in on head and shoulders, a condition also shown by specimens taken as late as June 11.

This species possibly breeds earlier than *O. pallasii*, for very small young (length, 105 mm.) were taken some twenty miles southwest of Urga on May 18 and 19, 1922, and others May 21 near Tze Tzen Wang.

Another, equally small, was caught at Loh, July 7, and is interesting in having a well-developed first digit on the right hind foot, but whether on the other hind foot, is not certain, as it is injured.

A December specimen from Kweihwacheng, Shansi, should probably represent *O. bedfordi* Thomas from Ningwufu and Kolanchow, Shansi, and Yenanku, Shensi, which is said to differ in its rather larger size and larger bullæ. The measurements given, however, are not greater than those shown by specimens of *O. dauurica* from localities in northern Mongolia. Indeed, some of the latter have even larger bullæ. The Kweihwacheng specimen, though not full grown, appears identical in measurements with Mongolian examples. In its full winter coat, it is a uniform pale sandy buff, with paler post-auricular patches; below white, with a buffy collar which is prolonged as a narrow median buffy line along the ventral region.

***Ochotona pallasi* (Gray)**

Lagomys pallasi GRAY, 1867, Ann. Mag. Nat. Hist., (3) XX, p. 220.

A large sandy-buff (summer) species, with gray belly washed with buff. In the skull the incisive and palatal vacuities are separate.

A series of some fifty specimens was secured in 1922, from localities in the Gobi Desert, Mongolia: Gun Burte, Ussuk, Artsa Bogdo, and 40 miles southwest of Tze Tzen Wang. An adult from the last locality was still in very worn winter pelage on June 1, of a nearly uniform sandy gray above; the feet above and a tuft at the anterior base of the ear pale buffy; rump slightly more ochraceous; throat and middle of belly pale ochraceous. A second adult from the same locality, May 31, is similar but small patches of the ochraceous summer pelage are coming in on nose, base of ears, patch below ears and in the middle of back. Others from Gun Burte, June 21, have new ochraceous hair on nose, forehead, cheeks and a "whisker" patch of upwardly directed hairs below the ear, and still others taken at the same time and place are slightly farther advanced, the new pelage extending from nose to shoulders, and across the posterior part of the back. In somewhat younger (and more vigorous) animals, also taken June 21, the change is complete, the entire dorsal surfaces sandy, with a bright ochraceous tone, clearest on head, neck and rump, the feet paler; belly hairs slaty with whitish tips and a wash of ochraceous across the throat and medially on the belly. About a centimeter below the ear is a small patch of close, upwardly directed hairs, of contrastingly rufous color.

Several small young were taken as early as May 31 and June 1, forty miles southwest of Tze Tzen Wang, and others of about the same size June 21 at Gun Burte, June 25 at Ussuk, and July 11-24 at Artsa Bogdo.

A ready means of distinguishing this from *O. dauurica* is through the naked black pads, clearly visible at the ends of the toes in the present species; also, the hind claws are shorter.

***Ochotona cansa morosa* Thomas**

Ochotona cansa morosa THOMAS, 1912, Ann. Mag. Nat. Hist., (8) X, p. 403.

A dark brown race, having a plentiful admixture of black with ochraceous-tipped hairs. Feet with dark metapodial areas and pale buffy digits. Below, the hairs are white-tipped, the median area, or all but a lateral stripe, washed with ochraceous. The blue-gray bases of the hairs everywhere show through. Soles of hind feet dark brown.

Five skins from Tai Pai Shan, Tsing-ling Mts., at 10,000 feet, are nearly topotypes of this subspecies. From the same region Thomas has described a similar but grayer and white-bellied species, *O. syrinx*, which, however, was not met with by the Asiatic Expeditions.

***Ochotona forresti* Thomas**

Ochotona forresti THOMAS, 1923, Ann. Mag. Nat. Hist., (9) XI, p. 662.

A dark brown species allied to *O. tibetana* but larger and more ochraceous in color.

The type, from 13,000 feet, on the northwest flank of the Lichiang range, Yunnan, is described as larger than any other known member of the *tibetana* group (length 185 mm.). The collection contains a single immature female from 12,000 feet on the same range.

***Caprolagus sinensis sinensis* (Gray)**

Lepus sinensis GRAY, 1833-34, 'Illustrations of Indian Zool.,' II, Pl. xx.

This is the common rabbit of South China, of a bright ochraceous buff, much darkened above by long black hairs, and having a blackish patch on the face below the eye; chin and throat buff, mid-ventral area white.

So different is this rabbit in its external and cranial characters from the more typical members of the genus *Lepus*, that it can no longer be regarded as congeneric with them. In its short ears, short hind foot, short, nearly concolorous tail, and relatively harsh pelage it is obviously

peculiar, and the characters of the skull further emphasize its distinctness. In all these points it shows much agreement with *Caprolagus hispidus* of Nepal and Assam, and I am therefore transferring it to that genus. As in *Caprolagus*, the supraorbital processes are less developed than in *Lepus*, lack the deep notch anteriorly, and their tips do not extend back to the braincase. The postorbital constriction is narrower as well, so that when viewed from above much more of the orbit is visible, whereas in *Lepus*, the large supraorbital process overhangs and hides the greater part of the orbit. In two out of five specimens the sutures of the interparietal bone are distinct all around, but in the others its posterior outlines are obliterated. The bone itself is very narrow. The jugal bone, instead of having its edges raised to form a wide external gutter as in *Lepus*, is flat on its outer surface, with the usual deep excavation near the anterior end. Other obvious differences are the generally heavier nature of the bones of the skull, the narrower opening of the posterior nares, and the smaller bullæ. The teeth agree with those of *Caprolagus* in the heavier form of the incisors with their simple groove (in the upper anterior pair) which, however, is deeper and more filled with cement in *C. hispidus* than in *C. sinensis*. The first upper premolar has three deep subequal re-entrant folds of enamel on its anterior face, whereas in *Lepus* the middle loop is deepest, the two others shallower. In *C. hispidus* the incisive foramina appear to be shorter and narrower than in *C. sinensis*, with the palatal bridge relatively longer, but these differences may be regarded as specific rather than generic.

The name *Lepus sinensis* first appeared on Gray's colored plate, said to have been drawn from a specimen sent by Reeves to the British Museum. As noted by Thomas in another connection, Reeves' mammals came from southeastern China, "more or less in the region of Canton," which may therefore be regarded as the type locality. It ranges northward along the coast apparently at least to the vicinity of Shanghai. The specimens secured by the Asiatic Expeditions are from Futsing and Yenping in Fukien Province, and Tung-lu, Chekiang. In the mountains of northwestern Fukien it is represented by the following subspecies.

***Caprolagus sinensis flaviventris*, new subspecies**

TYPE.—Sub-adult female, skin and skull, No. 84500, American Museum of Natural History, from Chunganhhsien, Fukien Province, China. August 1, 1926. Clifford H. Pope, collector; Third Asiatic Expedition.

DESCRIPTION.—Like the typical form but darker, the ochraceous tints deeper and the entire underparts ochraceous buff instead of being pure white mid-ventrally.

General color above a mixture of ochraceous buff and black. The longer hairs are of two kinds: those having a dark blackish base then a broad ochraceous band and a fine black tip; while mixed with these are hairs entirely black, which predominate over the back and rump, and become less numerous on the sides. Head, proëctote and tail above, dark mixed black and ochraceous like the back; sides of the head, especially below the eyes, black, only slightly mixed with ochraceous; an ill-defined pale buffy eye-ring. Neck patch clear ochraceous rufous. Outer margin of ears buff, their metentote and metectote more ochraceous. Fore feet and limbs above ochraceous rufous. Hind feet and entire underparts from chin to lower side of tail clear ochraceous, the bases of the belly hairs gray. A few black hairs are present on the lower throat.

SKULL.—Apparently this is not different from that of the typical race.

MEASUREMENTS.—In the type, the ear from meatus measures 62 mm., the hind foot 88, the tail 55. In a larger, male specimen the hind foot is 98 mm., the ear about 60. The skull of the type measures as follows (with the corresponding measurements of a larger, more mature female of *C. s. sinensis* from Tunglu, Chekiang, No. 45338, in parentheses): greatest length, 77 (84) mm.; basal length, 60.5 (65.5); palatal length, 30 (33); incisive foramina, 18.5 (19.5); nasals, median length, 26 (27); zygomatic width, 37 (37.5); interorbital width, 17 (17); postorbital constriction, 11.5 (11); width of brain-case, 24.5 (26.5); interpterygoid width, 6.8 (6.8); length of bulla from ventral aspect, 9.5 (10); diastema, 19 (20); upper cheek teeth, 14.5 (15.6); lower cheek teeth, 15.5 (16).

Five specimens, including two very young ones, from Chungan-hsien, near the northwest border of Fukien Province, all agree in the uniform ochraceous coloring of the under side, instead of being pure white mid-ventrally from the chest to vent. Mr. Clifford H. Pope who secured this series writes that the altitude here is 4000 to 5000 feet; "the mountains are forested and wild and probably reach an altitude of 7000 feet."

A narrow white mark is present on the forehead of the young and some of the adults.

***Lepus tolai tolai* Pallas**

Lepus tolai PALLAS, 1778, 'Nov. Spec. Quad. e Glirium Ord.,' p. 17.

The nomenclature of the black-tailed hares of central and eastern Asia is still much in need of revision. The first applicable name is that of Pallas who in 1778 described *Lepus tolai* which lives "in deserto magno Gobëensi ubique ad Tybetum usque." In 1894 Thomas described *L. swinhoei* from Chefoo, Shantung Province, China, and other names have since been given to similar hares from that country, though seemingly the differences are slight. In 1907 Satunin gave new names to various Asiatic hares on the basis of small color characters, and with few comparative notes. In this group, the ear from crown is slightly shorter than the hind foot (with claw), there is a pale eye stripe and ring, the

tail is black above and pure white below to the roots, and the sides of the body in the winter pelage have a number of very long white-tipped bristles projecting far beyond the general surface of the pelage. Of the 58 specimens of this type collected by the Asiatic Expeditions of The American Museum of Natural History, as well as in a series in the Museum of Comparative Zoölogy, those from the Gobi Desert are practically all in their summer coat while those from China are in full winter pelage so that strictly comparable specimens are few. It is evident, however, that the hare of the Gobi Desert is paler in winter coat than that of North China, with more prominent gray rump, though within narrow limits there is considerable variation. Satunin regarded specimens from Transbaikalia as typical of *L. tolai* and describes the Gobi Desert hare as a distinct species, *L. gobicus*, but the differences noted are very slight, and it seems unlikely that the hares from Selenga River (which he assumes as the type locality of *L. tolai*) are very different from those inhabiting the northern Gobi, even if it were possible to ignore Pallas's statement that the Gobi Desert is the type region. For the present then, the pale, gray-rumped hare of the Gobi Desert may be considered as *L. tolai*, of which *L. gobicus* is a synonym. The species is represented in the collections of the Asiatic Expeditions by specimens from thirty miles south of Ude, thirty miles south of Urga, from Erhlien, Tsagan Nor, Ussuk, Artsa Bogdo, and Ula Usu, Mongolia.

***Lepus tolai swinhoei* Thomas**

Lepus swinhoei THOMAS, 1894, Ann. Mag. Nat. Hist., (6) XIII, p. 364.

A brighter colored, more buffy race, with slightly longer nasals than typical *L. tolai*.

More than thirty years ago Thomas pointed out the characters distinguishing the Chefoo Hare from the grayer form of the Gobi Desert, but although the two have since been regarded as distinct species, there seems now no doubt of their closer relationship, and I have therefore regarded the former as a subspecies of the latter. In winter pelage Swinhoe's Hare is mixed buffy and black above, with a number of long white-tipped hairs projecting beyond the rest of the pelage on the sides. The summer coat is shorter and lacks these longer hairs.

A number of specimens from the Peking region secured by the Asiatic Expeditions represent this race. Others from Shansi are obviously less yellow in winter pelage with a very pinkish tint, while a few from the Ichang region in the Yangtze Valley are richer in tone becoming almost rusty. Since names are available for these geographic variants, they are

recognized as below. Typical *swinhoei* was described from the Shantung peninsula, and the Peking specimens are assumed to be the same. In winter coat they are pale yellowish above, but some are hardly distinguishable from the next race. A large proportion (six of 13 skins) show more or less mixture of buffy-tipped hairs with the black of the tail, a character used by Matschie as the basis of his *Lepus stegmanni*, shown by Thomas to be a synonym of *L. swinhoei*.

***Lepus tolai filchneri* Matschie**

Lepus filchneri MATSCHIE, 1908, 'Exped. Filchner nach China und Tibet,' X, pt. 1, pp. 217-219.

Lepus swinhoei brevinasus J. A. ALLEN, 1909, Bull. Amer. Mus. Nat. Hist., XXVI, p. 427.

Lepus swinhoei sowerbyæ HOLLISTER, 1912, Proc. Biol. Soc. Washington, XXV, p. 182.

The series of black-tailed hares collected by the Asiatic Expeditions includes ten from Kweihwacheng, northern Shansi, in freshly assumed winter coat (October 22-24), and four (one in winter coat) from the Tai Pei Shan region of southern Shensi. All are quite similar in color and undoubtedly represent *L. filchneri* described by Matschie from Hinganfu, southern Shensi, with the description of which they quite agree. They show an average difference in coloring that separates them from the grayer form of the Gobi Desert, true *tolai*, but their similarity to the Chefoo Hare, *L. t. swinhoei*, is rather closer. They may usually be distinguished, however, by the decidedly pinker, less yellowish, tint of the back and sides, and by the buffier tint of the back and exposed inner portion of the ear including its fringe of longer hairs at the outer edge, portions which in *swinhoei*, as represented by specimens from Peking, tend to be white or whitish, even forming a contrasting white edge above and below. In addition there is less tendency to a mixture of buffy hairs with the black of the tail, and the nasal bones of the skull average slightly shorter. A winter specimen from Tai Pei Shan is quite the same as the Kweihwacheng series. Three others from near Sianfu, Shensi, are in summer pelage which is much shorter, and uniformly pale yellowish (buff) grizzled with black above, clear buff on the sides and limbs, and without the long whitish bristles of the winter coat. There is no doubt that Hollister's *Lepus swinhoei sowerbyæ* (1912) from northern Shansi is the same. He compared it with the pale race *subluteus* of the Ordos Desert and described it as having a grayer rump, lighter pinkish-buff chest-band and more white on the under side of the fore legs, char-

acters which prove to be rather variable when a series is examined. It is possible that *Lepus gansuicus* Satunin (1907) from Kansu may prove indistinguishable, in which case this name has precedence.

***Lepus tolai aurigineus* Hollister**

Lepus aurigineus HOLLISTER, 1912, Proc. Biol. Soc. Washington, XXV, p. 181.

In the southern part of its range in China the black-tailed hare responds to the warmer and moister climate by a marked increase in the brightness of its yellowish tints. In winter pelage the entire upper parts are bright ochraceous much mixed with black; the spot before the eye, the eye-ring, inside of ears and their borders are rich ochraceous, the fore legs and chest-band pale cinnamon, the sides clear buff. Hollister's *Lepus aurigineus* is evidently this form, which may now be considered a race of *L. tolai*. The type locality is Kiu Kiang, northern Kiang-si.

Through the kindness of Mr. G. S. Miller, Jr., U. S. National Museum, I have been able to compare the type with other Chinese specimens, and it is unquestionably a member of the *tolai* group. Though nearly full-grown it is nevertheless immature as indicated by the skull, while the skin itself has the appearance of having been prepared from an alcoholic specimen. It lacks the tail and is obviously somewhat faded.

A series of winter skins, collected by the late W. R. Zappey in western Hupeh Province for the Museum of Comparative Zoölogy, is referred to this race while two others from Wanhhsien on the eastern border of Szechwan, secured by the Third Asiatic Expedition of The American Museum of Natural History, are nearly similar, though one is less ochraceous than the other. Probably these two are best regarded as intergrades between the two subspecies, *filchneri* and *aurigineus*.

***Lepus comus*, new species**

TYPE.—Adult female, skin and skull, No. 43174, American Museum of Natural History, from Teng-yueh, Yunnan Province, China, 5,500 feet altitude. April 19, 1917. R. C. Andrews and E. Heller.

DESCRIPTION.—Related to *L. nigricollis* but with longer hind foot, color darker, less buffy, the nape dull brown, the tail beneath and bases of belly-hairs pale slaty gray.

Head, above, dull ochraceous buff, slightly mixed with black; a whitish band from the muzzle to the base of the ear, including both eye-lids; cheeks grizzled buffy, gray, and black. Nape patch dull russet with many pale-tipped hairs. Ears dark, the proëctote grizzled buffy and black, the anterior edge with a fringe of longer grayish hairs on its basal three-fourths, the posterior edge clearer white; tip of ear, both its edge and posterior terminal half of metectote, dark brown; base of metectote sparsely covered with short grayish hairs. Inside of ears with very few pale hairs, but an ill-

defined dark brown submarginal border basally. The back is a very dark mixture of buffy and blackish in about equal proportions. The individual hairs are about 32 mm. long, grayish at base, then ringed with ochraceous, then with black, succeeded by a buffy tip. On the rump these rings become very much paler and the tips whitish, resulting in a grizzled gray appearance. The flanks, fore legs from elbow, and outer side of hind legs and backs of hind feet are clear ochraceous buff. The tail is peculiar in being grizzled blackish-brown and whitish above like the rump, and gray faintly tinged with buffy below, the basal portion of all the hairs pale slaty gray instead of pure white. The throat band is clear ochraceous with a sprinkling of longer white-tipped hairs. Chin, inner sides of legs to elbow and heel white; the chest and belly white with blue-gray bases except anteriorly where the hairs are pure white throughout their length.

SKULL.—In general structure the skull is very different from that of the black-tailed hares of the *L. tolai* group, but closely resembles that of *L. nigricollis*. In the former the anterior edge of the orbit forms a slight wing standing out at right angles to the long axis of the skull, but in the latter the sides of the rostrum come straight back to this edge so that there is little if any projecting rim and the base of the rostrum appears much broader in proportion. The supra orbital processes are more slender with their anterior arm marked off by a short narrow slit in *L. nigricollis* and *L. comus* but in the *tolai* group are widely notched in front, and in addition are turned slightly upward, so that in profile they stand up above the general contour of the skull. In *L. comus* and *L. nigricollis* the profile is evenly convex whereas in *L. tolai* the nasals are less depressed and the dorsal outline of the braincase is more sharply bent downward. The meatus of the ear is also directed more posteriorly in the two first. In ventral view the inner margin of the bulla is broader and its foramen more prominent. The groove on the front face of the incisors is continued backward with two short lateral arms, forming a Y. The portion internal to this groove projects forward beyond the level of the outer part of the tooth.

MEASUREMENTS.—The type measured: length, 480 mm.; tail, 95; hind foot with claws, 130; ear, 97. The skull of the type and an imperfect one of a second specimen from the same locality measure: greatest length, 95, —; basal length, 76, —; palatal length, 39.5, 37; diastema, 27.5, 25; nasals, greatest length, 41, 41; length of contact medially, 31, 31; greatest width, 24, 23.5; zygomatic width, 42.5, —; mastoid width, 30, —; width outside molars, 26, 26.5; outside lacrymals, 35.5, 32+; upper cheek teeth, 17.6, 17.4; lower cheek teeth, 18.2, 17.5; jaw, condyle to tip of bone at base of incisors, 70.5, 67.5.

The discovery of this hare is a matter of great interest, since it is closely allied by the characters of the skull to *L. nigricollis*, the black-necked hare of the Indian peninsula and Ceylon (subspecies *singhala*), but differs strikingly in color, especially in the dark back with its lack of bright buffy and the dull russet instead of black nape, the gray bases of the white hairs of the belly, and particularly in the tail which is pale slaty gray underneath. In its large size, notably of the hind foot, it differs further from *L. nigricollis*. The species *L. siamensis* and *L. peguensis* are much smaller and probably are more nearly related to *L. hainanus*. The skull of the type is peculiar in lacking all trace of the

small second upper incisors but they are present in a second specimen from the type locality. This latter and a young one taken May 10, and an imperfect skin from Lichiang, 8200 feet, agree in all essentials of coloring. A note by the collector states that the type contained two large embryos. Apparently these are the first hares to be recorded from western Yunnan although Wroughton (Journ. Bombay Nat. Hist. Soc., 1915, XXIII, p. 477) mentions that Major Harington secured some hares "beyond Bhamo," eastern Burma, which were "certainly not" *L. peguensis*, and may have been the species here described.

***Lepus hainanus* Swinhoe**

Lepus hainanus SWINHOE, 1870, Proc. Zool. Soc. London, pp. 233, 639, Pl. XVIII, text-figs. 1-4.

A small hare with relatively short stiff pelage and dark coloring, a mixture of dull ochraceous and black above; a prominent white eye-ring, continued to muzzle; fore legs and throat-band bright ochraceous rufous, hind legs paler; chin, belly and under side of tail pure white to the roots. Foot about 85 mm., ear 75.

A series of these hares from Nodda, Hainan, includes a number of partly grown young taken from January to July. Compared with the hares of North China and Mongolia this differs in several minor points, such as the narrowness of the posterior narial opening, the small size of the bullæ, and the peculiar form of the groove on the front face of the upper incisors. This last, instead of being a simple V-shaped groove with its apex posteriorly, is Y-shaped with the two diverging arms extending as re-entrants posteriorly, the whole filled with cement.

