

2. The Duke of Bedford's Zoological Exploration in Eastern Asia.—IV. List of small Mammals from the Islands of Saghalien and Hokkaido. By OLDFIELD THOMAS, F.R.S., F.Z.S. (With Appendix on the Cold-blooded Vertebrates, by G. A. BOULENGER, F.R.S., F.Z.S.)

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Whatever may be the riches of the St. Petersburg Museum in collections from the far-eastern island of Saghalien, our own National Museum has hitherto possessed scarcely a single mammal from it, so that the results of a visit made to the island by Mr. M. P. Anderson during last summer, presented to the Museum by our President, are of the greatest value, and include examples of a considerable number of species and subspecies new to science.

Mr. Anderson also paid a second visit to the island of Hokkaido (formerly known as Yesso), and added a number of species to those he had previously obtained there, a list of which was given in my paper on his Japanese Mammals *.

The result of the present important collection is to show that the two islands are exceedingly closely allied in their small mammal faunæ. For nearly all the same species are represented in both, although in the case of the *Sciurus*, *Micromys speciosus*, and *Evotomys* a slight difference, here considered of subspecific value, is perceptible. The Saghalien species (apart from Bats) as yet unrecorded from Hokkaido—*Sorex daphænodon* and *minutus*, *Sciuropterus russicus*, and *Sicista caudata*—will probably yet turn up in the more southern island. But the one Hokkaido species absent from Saghalien, *Micromys geisha*, is so common and so easily caught when present, that we may take it for granted that it really does not occur in the latter island. Moreover, it should be noted that the form of *M. speciosus* which occurs in Saghalien is allied to the Korean *peninsula*, while that of Hokkaido is nearer to the typical form found in Japan; so that in this genus, and this genus only, Hokkaido would seem to be more allied to Hondo than to Saghalien, a result probably due to the comparatively recent immigration of the species concerned.

The forms found in each island are as follows:—

Saghalien.

Myotis mystacinus.

Sorex unguiculatus, *daphænodon*, *shintô sœvus*,
minutus, *gracillimus*.

Sciuropterus russicus athene.

Sciurus vulgaris rupestris.

Tamias asiaticus.

Mus norvegicus.

* P. Z. S. 1905, ii. p. 333.

Micromys speciosus giliacus.
Craseomys bedfordiæ.
Evotomys amurensis.
Sicista caudata.
Lepus timidus.

Hokkaido.

Rhinolophus ferrum-equinum nippon, cornutus.
Plecotus auritus.
Sorex unguiculatus, shinto sævus.
Sciurus vulgaris orientis.
Tamias "lineatus."
Mus norvegicus.
Micromys speciosus ainu, geisha hokkaidi.
Craseomys bedfordiæ.
Evotomys mikado.
Lepus timidus ainu.

The present collection consists of 341 specimens, belonging to 22 species and subspecies, about half coming from each of the two islands referred to.

Of previous publications on the subject, reference need only be made to the following work :—

NIKOLSKY, A. M.—Survey of Saghalien and its Fauna.—Vertebrate Animals. St. Petersburg, 1889.

35 mammals are recorded, but they are mostly large species, of which Mr. Anderson was unable to obtain any examples.

The following are some extracts from Mr. Anderson's notes. It may be observed that he was the first person, not a Japanese, to enter the island of Saghalien after the cession of its southern portion to Japan.

"The island of Saghalien has a length of nearly 600 miles by at most 120 miles in breadth. In the north it is separated from the mainland by a shallow strait only 5 miles in breadth, while its southernmost point is 25 miles from the northern part of Hokkaido.

"Its two southern peninsulas are the continuations of mountain ranges leading up into the centre of the island, where they approach each other, but do not join. Korsakoff, the capital, is situated at the head of the gulf between the peninsulas.

"Both mountain ranges of southern Saghalien and the uncultivated parts of the valley are densely forested with coniferous trees (chiefly larch and fir), among which are mixed large numbers of birches, alders, and elms. The flora, indeed, is strikingly like that of Hokkaido. Heavy dews and frequent rains keep the soil constantly moist.

"My first collecting place (July 11th to 25th) lay 15 miles N.W. of Korsakoff, on the bank of a river which, draining a portion of the main range, empties into Aniwa Bay at its N.W. edge. Here

we were in the level valley, forested at this spot chiefly with larch, but, in such clearings as existed, growing rank with many herbs.

"From July 25th to August 5th I spent at a point some 7 miles up the same river. Here we were at the foot of the mountains of the main range, but we found few mammals on the forested hills. The best collecting was in the clearings, and open spots in the forest where grass, reeds, and 'weeds' grow rank.

"August 10th I began work at Dariné, and remained there till August 28th. Dariné is 25 miles N.W. of Korsakoff, and stands in the valley at the edge of the western mountains. Here, as elsewhere, we found both forest and clearings.

"I spent two days in the mountains west of Dariné, at an altitude of 1000 feet. Here the musk-deer is said to be plentiful, but I saw no evidence of it besides some scraps of skin and a long tooth shown me by a Japanese settler. The single chipmunk (*Tamias*) and other specimens were secured at this place, but these are all found in the lowlands as well.

Notes on places visited in Hokkaido.

"From Sept. 7th to Sept. 21st I worked at Ochiai, a village in nearly the exact centre of Hokkaido. This place is at an altitude of 1300 feet, and situated on a tributary of the Ishikari River, a little west of the crest of mountains that run from south to north through Hokkaido. The region is of steep though not lofty mountains, well covered with their native forest, which is largely coniferous in character. During my stay the weather proved pleasant, but chilly. This is said to be the coldest part of the island in winter.

"I spent the time from Sept. 24th to Oct. 6th at Kuchan, best described as 30 miles S.W. of Sapporo. This place is at the foot of a mountain called Shiribeshiyama, an extinct volcano closely resembling Fujiyama, though not so high. My collecting was done in the forest of oaks, chestnuts, maples, and elms that covers the foot of this mountain and the neighbouring hills. Altitude 900 feet or below."

1. *RHINOLOPHUS FERRUM-EQUINUM* NIPPON Temm.

♂. 1113. Kuchan, 30 miles S.W. of Sapporo, Hokkaido.

2. *RHINOLOPHUS CORNUTUS* Temm.

♂. 1118. Kuchan, Hokkaido.

The occurrence of these two species of *Rhinolophus* appears to be the most northern record of any Leaf-nosed Bat in the East, but in the warmer West, of course, they range considerably further north.

3. *PLECOTUS AURITUS* L.

♂. 1028. ♀. 1027. Ochiai, Central Hokkaido.

Although the Long-eared Bat has often been said to occur in

Japan, these are the first examples from the Far East that the British Museum has received. They show remarkably little difference from European examples.

4. *MYOTIS MYSTACINUS* Leisl.

♂. 875, 880. ♀. 874, 876. 17 miles N.W. of Korsakoff, Saghalien.

♂. 923. ♂. 951. Dariné, 25 miles N. of Korsakoff.

5. *SOREX UNGUICULATUS* Dobs.

♂. 816, 877, 878. ♀. 817. 17 miles N.W. of Korsakoff, Saghalien. 150'.

♂. 946. Mountains 35 miles N.W. of Korsakoff. 1000'.

♂. 959. ♀. 899, 915, 950. Dariné, 25 miles N.W. of Korsakoff. 200'.

♂. 961, 1026. ♀. 960, 990, 1031, 1032, 1047, 1056. Ochiai, Central Hokkaido. 1200'.

♂. 1097, 1111. Kuchan, 30 miles S.W. of Sapporo, Hokkaido.

This large-footed Shrew was discovered in Saghalien by Dr. L. von Schrenk, by whom the type, afterwards described by Dobson, was sent to the St. Petersburg Museum. No example of it had hitherto reached the British Museum.

No. 899, a female, is smaller than usual, with a smaller skull, shorter tail, and lighter claws; but I can find no sufficient reason for distinguishing it from other specimens taken at the same place. Mr. Anderson notes of this individual that it "contained 5 embryos, 9.5 mm. long; mammæ 6 in number, all inguinal."

6. *SOREX DAPHNODON*, sp. n.

♀. 916, 925, 956. Dariné, 25 miles N.W. of Korsakoff, Saghalien.

S. araneus group. The teeth very heavily pigmented; tail thickly haired.

Size and general characters of *S. araneus*. Hairs of back about $4\frac{1}{2}$ mm. in length (summer specimens). General colour above dark brown (between Prout's brown and bistre). Sides little lighter than back; under surface dull greyish, with slight drabby tinge. Hands rather heavy, though not nearly so large as in *S. unguiculatus*, the claws slightly longer than usual; upper surface of hands and feet grey-brown, darker than in *S. annexus*. Tail of medium length, heavily haired and pencilled even in summer specimens; the hairs at the tip over 7 mm. in length.

Skull and dentition very much as in *S. araneus*, except that the teeth are extraordinarily heavily pigmented throughout, the pigment covering all the cones of the teeth and passing lower into the valleys than in any *Sorex* known to me; the hypocones of the upper p^4 , m^1 , and m^2 all heavily pigmented; viewed externally the limiting line of the brown pigment is more than halfway down the outer side of the teeth.

Dimensions of the type, measured in the flesh :—

Head and body 59 mm. ; tail 38 ; hind foot (s. u.) 12·5 ; ear 8.

Skull—condylo-basal length 18·5 mm. ; basal length 15·7 ; greatest breadth 9·6 ; greatest breadth across molars 5 ; vertical height from basion 5·9 ; front of i^1 to back of m^3 8·2.

Type. Adult female. B.M. No. 7.2.5.16. Original number 916. Collected 17th August, 1906.

This Shrew is distinguishable from all other Eastern species known to me by its heavily pigmented teeth. In general appearance it is very like *S. annexus* Thos., but besides the difference in the teeth, its more hairy tail and differently coloured teeth at once distinguish it.

I owe to the kindness of Dr. Allen examples representing his *S. buxtoni*, described from Gichika Ochotsk Sea, and find that it has a smaller and slenderer skull (greatest breadth in type 8 mm.) and that its teeth are not more heavily pigmented than usual.

7. SOREX SHINTO SÆVUS, subsp. n.

♂. 787, 850. 15 & 17 miles N.W. of Korsakoff, Saghalien.

♂. 948. ♀. 947. Dariné, 25 miles N.W. of Korsakoff.

♂. 1030, 1064. ♀. 995, 1050. Ochiai, Central Hokkaido.

♂. 1112. ♀. 1096. Kuchan, 30 miles S.W. of Sapporo, Hokkaido.

Quite like the true *S. shinto* Thos., of Hondo, in all respects, but larger throughout, except that the tail is only of about the same length.

The following are the external dimensions of four specimens, measured in the flesh :—

		Head & body.	Tail.	Hind foot.	Ear.
		mm.	mm.	mm.	mm.
Saghalien.	♂. 787 (Type).	69	50	12·5	8
"	♀. 947	58	48	12·5	8
Hokkaido.	♂. 1112	62	49	13	8
"	♀. 995	58	50	12·5	8

Skull (of type)—greatest length 18·6 mm. ; basal length 16·3 ; greatest breadth 9·2 ; length of upper tooth-series 7·8.

Hab. Both Saghalien and Hokkaido. Type from 15 miles N.W. of Korsakoff, Saghalien.

Type. Old male. B.M. No. 7.2.5.19. Original number 787. Collected 15th July, 1906.

This Shrew is evidently of the same type as the Hondo *S. shinto*, discovered previously by Mr. Anderson, but differs, as most northern forms so often do, by having a larger body, with a proportionally shorter tail. I can find no difference whatever between the Saghalien and Hokkaido specimens.

8. SOREX MINUTUS GRACILLIMUS, subsp. n.

♀. 921. Dariné, 25 miles N.W. of Korsakoff, Saghalien. 200'. 18th August, 1906. B.M. No. 7.2.5.23. *Type.*

Size and proportions as in the smaller forms of European *minutus*. Skull very light and delicate, peculiarly narrowed in the facial region. In ordinary *minutus* the skull narrows evenly forward from the brain-case, but in *gracillimus*, while the brain-case is of about the usual breadth, the narrowing is much more abrupt in the interorbital region and the whole face in front of this is particularly light and slender. P⁴ and molars rather narrower than in true *minutus*. Pigmentation of teeth slight, but the specimen is old, and they are all somewhat worn.

Dimensions of the type, measured in the flesh:—

Head and body 51 mm.; tail 44; hind foot 11; ear 6.

Skull—condylo-basal length 15.2 mm.; basal length 13.8; greatest breadth 7.7; interorbital breadth at hinder end of ante-orbital foramina 2.8; length of upper tooth-row 6.8; breadth across molars 3.4.

Hab. & Type as above.

Of this tiny Shrew, the Eastern representative of our Pygmy Shrew, Mr. Anderson only sent the skull and one hind foot, the rest having been stolen by a rat. Fortunately the measurements were preserved, and as these and the skull are the chief basis for systematic work on Shrews, the colours being comparatively unimportant, I have thought myself justified in giving a name to the animal on the very perceptible difference in the shape of the skull. No Far-Eastern forms of this group have been previously recorded, except under the old names of *S. minutus* or *pygmaeus*.

9. SCIUROPTERUS RUSSICUS * ATHENE, subsp. n.

♀. 865. 17 miles N.W. of Korsakoff, Saghalien, 1st August, 1906. B.M. No. 7.2.5.24. *Type*.

Colour as in *S. momonga* †; skull as in true *russicus*.

General colour above drab-grey, the tips of the hairs clay-colour; under surface dull whitish, the sides slightly washed with reddish brown. Upper surface of hands and feet smoky grey, becoming black on the digits; the hairs at the bases of the claws clay-colour; hairy part of soles greyish white; lower side of digits naked. Tail very much as in *S. momonga*, the upper and under layers of hair black, the middle layer isabella or clay colour, the hairs at the tip verging towards buffy.

Skull with the long palatal foramina and large bullæ of *S. russicus*, each of these parts being markedly smaller in *S. momonga*.

* *Pteromys russicus* Tiedem. Zool. p. 451, 1808. American zoologists have rightly shown that the name *volans* Linn. belongs to the American species; but this is *not* because Linnaeus's *Mus volans* is founded on Seba's Pl. xlv. fig. 3, "exclusively American," as the animal figured by Seba is clearly a *Petaurista*, in spite of his statement that its locality was Virginia. The real basis of the Linnean name is Ray's *Sciurus americanus volans* (Quadr. p. 215, 1693), which is undoubtedly the American species.

† Or at least as in *S. momonga amygdali* Thos., the restricted *momonga* being only represented by a bleached specimen.

Dimensions of the type (immature):—

Head and body 125 mm.; tail 110; hind foot 36.5; ear 20.5.

Skull—greatest length 37 mm.; basilar length 28; zygomatic breadth 22; interorbital breadth 7; palatilar length 16.2; palatal foramina 4.8; length of bullæ 10.1; length of upper tooth-series 7.2.

Hab. & Type as above.

This Flying-Squirrel seems to be a local race of the Russian and Siberian *S. russicus*, rather than any relation of *S. momonga*, though its colour is exactly as in the latter, instead of the clearer grey of its ally. Satunin's *S. buechneri**, from Kansu, has a shorter hind foot and a more rufous colour.

10. *SCIURUS VULGARIS RUPESTRIS* †, subsp. n.

♀. 812. 15 miles N.W. of Korsakoff, Saghalien. Sea-level.

♂. 927. ♀. 952–958. Dariné, 25 miles N.W. of Korsakoff. 200'.

♂. 944. ♀. 945. Mts. 35 miles N.W. of Korsakoff. 300' & 1000'.

Quite like *S. v. orientis*, in summer pelage, but markedly smaller throughout. Winter pelage not represented.

Colour in summer as in *orientis*, but there appears to be a greater proportion of melanism, for not one of the six specimens is unaffected in this way. The least affected (No. 927, the type) has the feet and flanks blackish, while the only one (No. 812) which has the feet and flanks reddish, has the back of a very darker colour. The back of the type is rather redder than "Prout's brown."

Skull decidedly smaller than in *orientis*, 3–4 mm. less in extreme length, and the three true molars about half a millimetre less in combined length. This last point is important, as several of the specimens are immature, so that their full size can only be gauged by their teeth.

Dimensions of the type (slightly immature):—

Head and body 190 mm.; tail 174; hind foot 55; ear 32.

Skull—greatest length 48.8 mm.; basilar length 37; length of true molar series 6.7.

Dimensions of No. 944, a fully adult male:—

Head and body 208 mm.; tail 178; hind foot 57; ear 32.

Skull—greatest length 50.7 mm.; basilar length 39.5; length of nasals 14.3; breadth of brain-case 24; palatilar length 22.5; combined length of p⁴ and three true molars 8.9.

Type. Immature male. B.M. No. 7.2.5.26. Original number 927. Collected 20th August, 1906.

In a group where the main distinctions have been made on colour, it is somewhat embarrassing to have to deal with this

* Ann. Mus. St. Pétersb. vii. 1902, p. 3 (1903).

† I am informed by Dr. Knud Andersen that Saghalien is a modification of a Chinese word meaning "cliff at (the mouth of) Amur."

Squirrel, which differs in size alone from its Hokkaido ally, but there seems no doubt that it ought to have a name. Possibly some colour character will be found when winter specimens are available for comparison.

11. *SCIURUS VULGARIS ORIENTIS* Thos.

♂. 1065, 1073. Ochiai, Central Hokkaido.

♂. 1077, 1103. ♀. 1075, 1110. Kuchan, Hokkaido.

12. *TAMIAS ASIATICUS* Gmel.

♀. 949 (immature). Mts. 35 miles N.W. of Korsakoff, Saghalien.

13. *TAMIAS* " *LINEATUS* Siebold."

♂. 1039, 1063. Ochiai, Central Hokkaido.

♀. 989, 1006, 1019, 1038, 1049, 1070, 1071, 1072. Kuchan, Hokkaido.

This fine series, representing the first mammal ever described from Japan, "*Myoxus lineatus*" Siebold*, is of much value to us, but for want of more Siberian material I am unable to venture an opinion as to its specific or subspecific relationship to *T. asiaticus*. But if not identical, it is certainly very closely allied to the latter.

14. *MUS NORVEGICUS* Erxl.

♂. 811. 15 miles N.W. of Korsakoff, Saghalien.

15. *MICROMYS SPECIOSUS GILIACUS*, subsp. n.

54 specimens (mostly immature) from 15 miles N.W. of Korsakoff (sea-level), 17 miles N.W. of Korsakoff (150'), Dariné (200'), and mountains 35 miles N.W. of Korsakoff (1000').

Most closely allied to the Korean subspecies, *M. s. peninsulae*†, with which it agrees in the proportionally long and hairy tail, as compared with the Japanese forms, but distinguished by the ear being uniformly shorter. In the considerable number of *peninsulae* examined, the ear is measured by Mr. Anderson as 15, 15.5, or 16 mm., generally the last in adult specimens. In the Saghalien form, on the other hand, the great majority have the ear measured as 14 mm., some two or three only being labelled as 15.

The colour of the Saghalien specimens is rather darker than in those from Korea, but the former are all in summer and the latter in winter pelage, which may account for the difference.

The fur, in summer pelage, is not so distinctly spinous as it is in Japanese specimens, but there is a certain crispness which may develop into spininess in old age.

* Spic. Faun. Japon., in Diss. Hist. Nat. Japon. p. 13, 1824.

† P. Z. S. 1906, p. 862.

Detailed measurements :—

	Head and body.	Tail.	Hind foot.	Ear.
	mm.	mm.	mm.	mm.
♂ . 881 (Type).	104	110	24	14·5
♂ . 890	104	111	24	14
♀ . 882	103	113	23·5	14
♀ . 891	102	108	22	15

Skull of type—greatest length 28 mm.; basilar length 21·8; zygomatic breadth 13·7; interorbital breadth 4·6; palate length 13·1; diastema 9; palatal foramina 5·7; length of upper molar series 3·7.

Type. Adult male. B.M. No. 7.2.5.42. Original number 881. Collected at Dariné, 11th August, 1906.

This is no doubt the "*Mus sylvaticus*" of Nikolsky's work, and indeed it is probable that all the Long-tailed Field Mice that have been recorded from the Far East of Asia belong to this or some closely allied form, with 2—2=8 mammæ, and that none of them are really members of the *M. sylvaticus* group, with 1—2=6 mammæ.

The following is a short synopsis of the Japanese and Korean forms of *Micromys*, which have been referred to or described in the present series of papers :—

- A. Size large. Hind foot (s. u.) over 21 mm. and skull over 25. Supraorbital edges ridged.
 - a. Back not lineated *M. speciosus*.
 - a². Tail shorter than head and body.
 - a³. Foot large, 26–28 mm. in adults. Hokkaido *M. s. ainu*.
 - b³. Foot medium, 22–24 mm. in adults.
 - a⁴. Tail generally over 100 mm. Hondo &c. *M. s. speciosus*.
 - b⁴. Tail 90 mm. or less. Oki Is. *M. s. navigator*.
 - b². Tail longer than head and body.
 - c³. Ears longer, 15–16 mm. Korea *M. s. peninsulæ*.
 - d³. Ears shorter, 14–15 mm. Saghalien *M. s. giliacus*.
 - b. Back with a more or less distinct median line.
 - Korea *M. agrarius*.
- B. Size smaller. Hind foot under 21 mm. and skull under 25. Supraorbital edges rounded *M. geisha*.
 - c. Ears smaller, averaging about 13 mm. Saghalien *M. g. hokkaidi*.
 - d. Ears larger, generally about 14 mm.
 - e². Size larger, tail longer. Head and body 85–95 mm. Tail 90–100 mm.
 - e³. Hind foot shorter, 18–20 mm. Hondo &c. *M. g. geisha*.
 - f³. Hind foot longer, 20–21 mm. Yakushima *M. g. yakui*.
 - d². Size smaller, tail shorter. Head and body about 80 mm. Tail 80 mm. Oki Is. *M. g. celatus*.

16. MICROMYS SPECIOSUS AINU Thos.

18 from Ochiai, Central Hokkaido, and Kuchan, 30 miles S.W. of Sapporo.

17. MICROMYS GEISHA HOKKAIDI Thos.

51 from Ochiai and Kuchan, Hokkaido.

18. *CRASEOMYS BEDFORDIÆ* Thos.

33 from all the localities visited in Saghalien.

19 from Ochiai, Central Hokkaido. 1200'.

♂. 1090. ♀. 1076. Kuchan, 30 miles S.W. of Sapporo, Hokkaido.

I can find no appreciable difference between the Saghalien and Hokkaido specimens of *Craseomys*.

19. *EVOTOMYS AMURENSIS* Schrenk.

59 specimens from Saghalien (all localities visited).

The type specimen of this species was obtained by Schrenk close to the mouth of the Amur, and I have no doubt that the present series are referable to the same form. It is probably the "*Arvicola rutilus*" of Nikolsky.

From *E. mikado*, of Hokkaido, Schrenk's species is distinguishable by having the pale lateral area rising up much higher over the shoulders, so as to narrow the reddish upper colour to an ill-defined band little more than half an inch broad along the nape and withers. In *E. mikado* the shoulder area is rarely lighter or higher than the general light lateral colour. In addition the skull, or at least the brain-case, of *mikado* seems to average rather longer and narrower than in *amurensis*, though the difference is not very great, and the two forms are no doubt very closely allied.

20. *EVOTOMYS MIKADO* Thos.

29 from Ochiai, Central Hokkaido. 1200'.

21. *SICISTA CAUDATA*, sp. n.

♀. 862. 17 miles N.W. of Korsakoff, Saghalien. 150'.
1st August, 1906. B.M. No. 7.2.5.104. *Type*.

"Among tall grass."—*M. P. A.*

A species without dorsal stripe, and with a very long brown unicolor tail.

Size rather larger than in *S. concolor* Büchn. Fur close and fine; hairs of back, in a summer specimen, about 6 mm. in length. General colour along the dorsal area pale brown, of a rather warmer tone than Ridgway's "wood-brown," the sides paler and with a slight buffy suffusion. Under surface pale greyish with a drab suffusion, line of demarcation on sides not strongly marked. Visible part of ears (proectote and metentote) well-haired, dark brown. Upper surface of hands silvery white, of feet similar except that the metatarsals are dusky mesially for their prominent third. Tail very long, well-haired, uniformly brown above and below. Mammæ 2—2=8.

Skull lightly built, smoothly rounded. A deep concavity present in the single specimen on the median frontal suture just behind the nasals; perhaps not normal. Palate very much as in *S. leathemi*, the edge of the mesopterygoid fossa close behind the raised ridge which runs across the palate between the last molars,

and distinctly in front of the anterior limit of the parapterygoid fossæ; the latter much narrower anteriorly than in *S. tianshanica*.

Dimensions of the type, measured in the flesh:—

Head and body 63 mm.; tail 115; hind foot 18; ear 14·5.

Skull—greatest length 20·7 mm.; basilar length 15·3; zygomatic breadth 10·6; interorbital breadth 4; breadth of brain-case 10; palatilar length 8·5; palatal foramina 4·1; length of upper cheek-tooth series (crowns) 2·7.

Hab. & Type as above.

The discovery of the genus *Sicista* in Saghalien is a considerable extension of its known range, as the furthest eastern point from which it appears to have been recorded is Kan-su, W. China.

Sicista caudata seems to be most nearly allied to *S. concolor* Büchn. from Kan-su, as *S. subtilis* is at once distinguishable by its dorsal stripe and elongated palate, and *S. leathemi* Thos. and *tianshanica* Salensky by their bicolor tails. From *S. concolor* it may be separated by its longer tail and shorter tooth-series, while other differences will no doubt be found when examples of the two forms can be directly compared.

22. LEPUS TIMIDUS L.

♂ (young). 924. Dariné, 25 miles N.W. of Korsakoff, Saghalien.

On the Cold-blooded Vertebrata of Saghalien.

By G. A. BOULENGER, F.R.S.

One Lizard, *Lacerta vivipara*, one Snake, *Vipera berus*, and one Frog, *Rana temporaria*, species existing over the whole of Northern Europe and Asia, were the only known representatives of the Reptiles and Batrachians hitherto recorded from Saghalien*.

The collection made on the island, 15–25 miles N.W. of Korsakoff, by Mr. Malcolm P. Anderson in July and August 1906, and presented to the British Museum by His Grace the Duke of Bedford, includes several examples of the Common Lizard, and representatives of the following species:—

Tropidonotus vibakari Boie.—Manchuria, Japan.

Ancistrodon blomhoffi Boie.—E. Siberia, China, Japan.

Rana amurensis Blgr.—Manchuria, N. China.

Rana esculenta L., var. *chinensis* Osb.—Corea to Siam, Japan.

Bufo vulgaris Laur.—Europe and N.W. Africa to Manchuria, China, and Japan.

Bombinator orientalis Blgr.—Manchuria, N. China.

The single fish collected by Mr. Anderson is referable to *Gastrosteus steindachneri* Jordan & Snyder.

* Cf. A. M. Nikolsky's work (in Russian) on the Vertebrates of Saghalien, (St. Petersburg, 1889).



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