

outer edge is widely incurved throughout its whole length, the inner is straight for two-thirds of its length, but forms a curve towards the extremity, the width barely exceeds a fourth of the length. *Antennæ* filiform, extending backwards to the hind thighs, inserted on the front just before the eyes; basal articulation slightly bent, gradually thickened, rather longer than third; second nearly twice as long as broad.

Male.—Abdomen finely sculptured and pubescent; penultimate ventral segment with a semicircular line in the middle which, in some lights, might be mistaken as indicating an excision, the extremity with a series of small setigerous triangular projections; terminal segment deeply medially cleft.

Female.—Terminal ventral segment simple, much narrowed towards the extremity. Last joint of the maxillary palpi subtriangular, its apex oblique. Middle of head and thorax more or less infusate longitudinally. Apices of elytra sharply rounded.

Differs from the corresponding sex of *B. rarus* by the absence of the longitudinal sulcus on the vertex, by its longer thorax not being narrowed near the anterior angles, and by the elytra being more dehiscent at the extremity.

♂. Length $4\frac{3}{4}$; breadth $1\frac{1}{8}$ line.

Invercargill.

This interesting species was found under logs on the seabeach by Mr. A. Philpott, about forty years after my unique specimen of *B. rarus* was found on the Waitakerei Range.

Mount Albert, Auckland, N.Z.,
26th June, 1908.

LIV.—*Twelve new European Mammals.*

By GERRIT S. MILLER.

THE collection of European mammals in the British Museum contains representatives of ten hitherto unnamed forms. These are here described, together with two new races of *Sorex* included among some material sent to me for examination in London by the authorities of the United States National Museum.

Sorex araneus fetalis, subsp. n.

Type.—Adult female (skin and skull). B.M. no. 8. 9. 2. 1. Collected at Trinity, Jersey, Channel Islands, July 14, 1908,

by R. H. Bunting, Esq. Original number 3. Presented by Oldfield Thomas.

Characters.—Like *Sorex araneus araneus*, but skull with rostral portion shortened, broadened, and deepened, and anterior teeth (i^1 , i^2 , i^3 , and i_1) more robust than in the mainland animal. Colour essentially as in true *araneus*, except that the underparts in several of the Jersey specimens are a pale, almost whitish buffy grey, decidedly lighter than in any skins of the other races yet examined.

Measurements.—Type. Head and body 63 mm.; tail 48.2; hind foot 13; condylo-basal length of skull 18.8; mandible 10.0; upper tooth-row 8.4.

Specimens examined.—Five, all from the island of Jersey.

Sorex araneus bergensis, subsp. n.

Type.—Adult female (skin and skull). No. 84664 U.S. National Museum. Collected at Gravin, Hardanger, Norway, June 10, 1898, by Thora Stejneger. Original number 13.

Diagnosis.—Larger than *Sorex araneus araneus* (hind foot 13.6 to 14.4 mm.; condylo-basal length of skull 19 to 20 mm.) and colour in summer pelage darker, the dark brown or blackish dorsal area sharply defined from yellowish brown of sides.

Measurements.—Type. Head and body 80.5 mm.; tail 44.5; hind foot 13.6; condylo-basal length of skull 19.4; mandible 10.2; upper tooth-row 8.6. Average and extremes of eleven specimens from the Bergen district, Norway: head and body 78.7 (76–83); tail 49.3 (44–56); hind foot 13.8 (13.6–14.4).

Specimens examined.—Twenty-six, from the following localities in South-western Norway:—Skjærdal, Nordfjord, 7; Opheim, Bergen, 4; Gravin, Bergen, 8 (U.S. N. M.); near city of Bergen, 7 (B. M. and U.S. N. M.).

Remarks.—This large race of *Sorex araneus* differs noticeably from the small true *araneus* of Sweden and Eastern Norway, and more nearly resembles the Pyrenean and Alpine races. From these large forms, however, it is distinguishable by its darker colour. Its range appears to be confined to the Atlantic slope of Western Norway. On the eastern watershed it is replaced by true *araneus*, even as far north and west as the upper portion of the Gudbrandsdøl.

Sorex araneus pyrenaicus, subsp. n.

Type.—Adult female (skin and skull). B.M. no. 8. 8. 4. 301.

Collected at l'Hospitalet, Ariège, France (altitude 4700 ft.), August 25, 1906, by G. S. Miller. Original number 7076.

Characters.—Very similar to *Sorex araneus tetragonurus*, but distinguishable by the duller, less evidently tricoloured summer pelage (winter coat not known), in which the back rarely if ever assumes the blackish tints often seen in the Alpine form*.

Measurements.—Type. Head and body 72 mm.; tail 51; hind foot 14; condylo-basal length of skull 20·0; mandible 10·0; upper tooth-row 8·8. Average and extremes of six specimens from the type locality: head and body 70·6 (69–72); tail 47 (44·4–51); hind foot 13·3 (13–14).

Specimens examined.—Thirty-two, from the following localities in the Pyrenees:—Porté Pyrénées-Orientales (Spanish watershed), 9; l'Hospitalet, Ariège, 12; Ax-les-Thermes, Ariège, 2; Barèges, Hautes-Pyrénées, 9.

Sorex minutus lucanius, subsp. n.

Type.—Adult (skin and skull). B.M. no. 8. 9. 1. 5. Collected at Monte Sirino, Lagonegro, Italy, by A. Robert. Original number 2585.

Diagnosis.—Similar to *Sorex minutus minutus*, but with molars and anterior upper incisor noticeably enlarged.

Measurements.—Head and body —; tail 42 mm.; hind foot 10·4; condylo-basal length of skull 16; mandible 8·0; upper tooth-row 7·0.

Specimen examined.—The type.

Sorex alpinus hercynicus, subsp. n.

Type.—Adult male (skin and skull). No. 112928 U.S. National Museum. Collected at Mäuseklippe, Bodethal, Harz Mountains, Germany, October 18, 1901, by F. L. J. Böttcher. Original number 265.

Diagnosis.—Similar to *Sorex alpinus alpinus*, but with smaller skull and teeth (condylo-basal length of skull 19 to 19·6 instead of 19·4 to 20·6 mm.; upper tooth-row 8·6 to 9 mm.).

Measurements.—Type. Head and body 71 mm.; tail 67; hind foot 15·4; condylo-basal length of skull 19·2; mandible 10·0; upper tooth-row 8·4.

Specimens examined.—Eleven (all in the U.S. National

* *Sorex tetragonurus*, Hermann, = *S. araneus nudus*, &c., Fatio, and *S. a. alticola*, Miller.

Museum) from the following localities in Germany :—Bahrenberg, Harz Mts., 2 ; Mäuseklippe, Bode Valley, Harz Mts., 2 ; Eulengrund, Silesia, 3 ; Wolfshau, Silesia, 2 (the last two localities in the Riesengebirge).

Remarks.—In external measurements the Alpine shrew of the Harz Mts. and Riesengebirge agrees with the Swiss animal ; but the differences in length of skull and of tooth-rows seem enough to warrant the recognition of the two forms as distinct.

Crocidura canææ, sp. n.

Type.—Adult male (in alcohol). B.M. no. 84. 3. 14. 2. Crete (no exact locality).

Diagnosis.—Size and general appearance as in the smaller forms of *Crocidura russula*, and skull with similarly deep cranium ; but second upper premolar as large as third, and entire anterior portion of upper tooth-row unusually long relatively to cheek-teeth.

Measurements.—Type. Head and body 65 mm. ; tail 42 ; hind foot 11·8 ; condylo-basal length of skull 18·4 ; upper tooth-row 8·2.

Specimens examined.—Two, both from the island of Crete.

Sciurus vulgaris seguræ, subsp. n.

Type. Adult female (skin and skull). B.M. no. 8. 9. 24. 3. Collected at Molinicos, Sierra de Segura, Jaen, Spain, October 2, 1907, by M. de la Escalera.

Characters.—Similar to *Sciurus vulgaris infuscatus* (Cabrera) of Central Spain, but back less blackish, its underfur light grey, tail less red and with white area on under surface less well developed (essentially absent in three among eleven skins), and cheeks light grey, not noticeably contrasted with white of throat.

Colour.—Summer pelage : upperparts a fine inconspicuous grizzle of wood-brown and blackish, the general effect resembling the mars-brown of Ridgway, blackening on flanks, across posterior half of back, and on postero-external side of thighs (in some specimens the light element is more nearly russet and the black is essentially absent) ; ears and crown like back, but face with a rusty wash, and muzzle and cheeks to behind base of ears light clear ecru-drab, so pale as to form no marked contrast with white of throat ; underfur of head, back, sides, and limbs pale ecru-drab like that of cheeks, appearing conspicuously at surface in specimens with abraded pelage ; feet a dull ferruginous, this colour extending up

outer side of thigh and over entire fore leg, in both regions diluted by the ecru-drab of underfur; entire underparts and inner surface of legs buffy white to base of hairs; tail blackish, slightly tinged with dull red, the hairs becoming ecru-drab at base; whole tail sprinkled with pure white hairs, more numerous along median line below than elsewhere, and usually forming a distinct white median area as in *S. v. infuscatus*.

Skull and teeth.—The skull and teeth do not differ appreciably from those of the Central Spanish form.

Measurements.—Type. Head and body 245 mm.; tail 195; hind foot 61; condylo-basal length of skull 51·8; zygomatic breadth 33·4; mandible 35·6; maxillary tooth-row (alveoli) 10·4; mandibular tooth-row (alveoli) 10·0.

Evotomys glareolus isticus, subsp. n.

1900. *Evotomys hercynicus hercynicus*, Miller, Proc. Washington Acad. Sci. ii. p. 100, July 26, 1900 (not *Hypudæus hercynicus*, Mehlis, 1831).

Type.—Adult male (skin and skull). B.M. no. 4. 4. 6. 72. Collected at Bustenari, Roumania, May 3, 1899, by W. Dodson. Original number 88.

Characters.—Audital bullæ more abruptly inflated on inner side than in the typical subspecies (= *Evotomys hercynicus rubidus*, Miller, 1900); colour lighter and brighter (dorsal area rather narrow, clear yellowish rufous or a little more brownish, slightly varied by dark hair-tips; sides a noticeably contrasted buffy grey, produced by a grizzling of cream-buff mixed with blackish and whitish hairs; underparts varying from creamy white to a yellowish cream-buff; feet buffy white; tail distinctly bicolor, dark brown above, buffy white below).

Measurements.—Type. Head and body 96 mm.; tail 43·5; hind foot 17·4; condylo-basal length of skull 23·2; zygomatic breadth 13·0; mandible 14·2; maxillary tooth-row (alveoli) 5·0; mandibular tooth-row (alveoli) 5·0.

Specimens examined.—Forty-one, from the following localities:—Bustenari, Roumania, 1; Hatszeg, Hunyad, Austria-Hungary, 11; Somorja, Western Hungary, 1; Marxheim, Bavaria, Germany, 28.

Remarks.—Contrary to my supposition in 1900, the red-backed vole of the Harz Mountains, together with that of Denmark, proves to be the dark form named *rubidus* by Baillon. This being the case, the supposed discrepancies in

the original description of *Mus glareolus*, Schreber*, disappear†, and the name *Evotomys glareolus* becomes available for the small European red-backed voles, and in a subspecific sense for the dark western continental form. The *Evotomys hercynicus* of my preliminary revision is thus left unnamed. Its range appears to be about coincident with the drainage system of the Danube.

Microtus sarnius, sp. n.

Type.—Adult male (skin and skull). B.M. no. 8.9.2.27. Collected at St. Martin's, Guernsey, Channel Islands, July 23, 1908, by R. H. Bunting. Original number 52. Presented by Oldfield Thomas.

Characters.—Like the large forms of *Microtus agrestis* (condylo-basal length of skull about 28 mm.), but middle upper molar with second inner triangle absent; colour above essentially as in *M. agrestis agrestis*, though somewhat less dark and reddish; underparts a strongly contrasted light grey (nearly the grey no. 9 of Ridgway).

Measurements.—Type. Head and body 118 mm.; tail 42; hind foot 18.5; condylo-basal length of skull 27.8; zygomatic breadth 16.0; mandible 17.4; maxillary tooth-row (alveoli) 6.8; mandibular tooth-row (alveoli) 6.8.

Specimens examined.—Eight, all from the island of Guernsey.

Remarks.—While its external and cranial characters show that this species is a member of the *Microtus agrestis* group, the pattern of its enamel folding is exactly similar to that of *M. arvalis*. In the suppression of the second inner triangle of m^2 it shows the extreme of a tendency the exact opposite to that which has produced the local Hebridean form, *M. agrestis exsul*. The eight specimens, though representing all ages from less than half-grown young to fully adult, show no noteworthy variation in colour or in teeth.

Pitymys provincialis, sp. n.

Type.—Adult female (skin and skull). B.M. no. 8.8.4.265. Collected at St. Gilles, Gard, France, April 26, 1908, by G. S. Miller. Original number 7605.

Characters.—A small member of the *Pitymys ibericus* group (hind foot about 14.6 mm.; condylo-basal length of

* 'Säugethiere,' iv. p. 680.

† Specimens collected by Mr. Oldfield Thomas at Hilleröd, Zealand, exactly agree with the indication "cinnamon-brown" (zimmtbraun) of Schreber's account.

skull 22·6 to 23 mm.; upper tooth-row about 5 mm.); skull essentially as in *P. duodecimcostatus*, except for its much smaller size; audital bullæ very small and flat; colour pale (type: upperparts a light wood-brown, becoming paler and more cream-buff on sides; underparts a light grey, formed by the blending of slate-grey under-colour with creamy white of hair-tips; feet soiled whitish; tail whitish throughout, the upper surface sprinkled with brown hairs).

Measurements.—Type. Head and body 96 mm.; tail 22; hind foot 14·6; condylo-basal length of skull 22·4; zygomatic breadth 14·4; mandible 15·3; maxillary tooth-row (alveoli) 5·3; mandibular tooth-row (alveoli) 6·2.

Specimens examined.—Five from the type locality; two skulls from Var, France (no exact locality); a skull labelled "Provence" and another marked "France."

Remarks.—From its nearest geographical ally, *Pitymys duodecimcostatus*, this species is at once distinguishable by its much smaller size, a character in which it resembles the small Iberian forms related to *P. lusitanicus*. From these latter it differs, however, in the conspicuously projecting upper incisors and very narrow interorbital region.

Mus spicilegus hispanicus, subsp. n.

Type.—Adult female (skin and skull). B.M. no. 8.8.4.101. Collected at Silos, Burgos, Spain, October 12, 1906, by G. S. Miller. Original number 7272.

Characters.—Like the Hungarian *Mus spicilegus spicilegus*, but general colour paler and more yellowish (back and sides ranging from buff to a pale buffy grey, lighter and less yellow than the cream-buff of Ridgway, the median dorsal region faintly "lined" with black, the sides gradually becoming clear buff or buffy grey, this colour continuing forward over cheeks and above eye to muzzle; basal portion of hairs slate-grey; underparts sharply defined buffy white, slightly clouded by slate-grey under-colour; feet and tail like belly, the tail with a narrow dusky dorsal area extending to tip; ears thinly clothed, their colour buffy or greyish in harmony with surrounding parts).

Measurements.—Type. Head and body 79 mm.; tail 50; hind foot 14·4; condyle-basal length of skull 19·4; zygomatic breadth 11·0; mandible 11·4; maxillary tooth-row (alveoli) 3·4; mandibular tooth-row (alveoli) 3·2.

Specimens examined.—Seventy-one, from the following localities in Spain:—Silos, Burgos, 12; Castrillo de la Reina, Burgos, 3; Venta del Baul, Granada, 7; Elche, Ali-

cante, 24; Alcoy, Alicante, 12; San Cristobal, Minorca, 7; Inca, Majorca, 6.

Remarks.—The yellowish form of *Mus spicilegus* characteristic of the central and southern portions of Spain is readily distinguishable from the clear greyish-brown animal of Hungary. Skins from the Balearic Islands, while not so yellow as those from the mainland, appear to be referable to the same race.

Mus spicilegus lusitanicus, subsp. n.

Type.—Adult male (skin and skull). B.M. no. 98. 2. 2. 30. Collected at Cintra, Portugal, January 28, 1896, by Oldfield Thomas. Original number 52. Presented by the collector.

Characters.—Essentially as in *Mus spicilegus spicilegus* and *M. s. hispanicus*, but colour of upperparts a light yellowish wood-brown with an evident russet tinge, the sides paler and more buffy; a narrow clear buff area on sides bordering the pale cream-buff of underparts and accentuating the line of demarcation.

Measurements.—Type. Head and body 77 mm.; tail 60; hind foot 16.2; condylo-basal length of skull 19.8; zygomatic breadth 10.6; mandible 11.6; maxillary tooth-row (alveoli) 3.6; mandibular tooth-row (alveoli) 30.

Specimens examined.—Six, all from the neighbourhood of Cintra.

LV.—*Descriptions of new African Lepidoptera.*

By G. T. BETHUNE-BAKER, F.L.S., F.Z.S.

Lycænidae.

Oberonia trypherota, sp. n.

♂. Both wings white, with blackish markings. Primaries with apex and termen broadly blackish, apex extending for two-thirds towards the end of the cell, termen shortly invaded upwards very finely with white from the tornus: secondaries with a postmedian curved row of fine grey dashes, closely followed by the subterminal grey scalloped line, the scallops extending into the narrow black termen, and so enclosing a series of terminal black spots with white irides; a dusky patch at the apex; fringes whitish. Underside: primaries with a curved postmedian row of fine, grey, isolated, inter-



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