

MAGYAR NEMZETI MUSEUM  
ALLATTANI KÖNYVTÁR

276

Lelet sz.

# CATÁLOGUE

Cso. n.

*L. 144.*

OF THE

# MAMMALS

OF

# WESTERN EUROPE

(EUROPE EXCLUSIVE OF RUSSIA)

IN THE

COLLECTION

OF THE

# BRITISH MUSEUM

BY

GERRIT S. MILLER

LONDON

PRINTED BY ORDER OF THE TRUSTEES OF THE  
BRITISH MUSEUM

SOLD BY

LONGMANS, GREEN & Co., 39, PATERNOSTER ROW, E.C.  
B. QUARITCH, 11, GRAFTON STREET, NEW BOND STREET, W.  
DULAU & Co., LTD., 37, SOHO SQUARE, W.

AND AT THE

BRITISH MUSEUM (NATURAL HISTORY), CROMWELL ROAD, S.W.

1912

*All rights reserved*

## INTRODUCTION

THE collection of European Land-mammals in the British Museum consists of about five thousand specimens. One hundred and twenty-four of these are types. It has for the most part been brought together during the past thirty years through the efforts of the late Lord Lilford, of Mr. Oldfield Thomas, and of Major G. E. H. Barrett-Hamilton. The older material, though not extensive, includes much that is of historic interest, such as the numerous specimens received from the late Baron E. de Sélvs-Longchamps, the types of various species described by Gray and Bonaparte, and Darwin's Porto Santo rabbits which have been the subject of so much groundless speculation. It is, however, from the recently-obtained material that the collection derives its true value. These specimens are almost without exception carefully-prepared skins accompanied by skulls and measurements, together with full records of sex, date, and exact locality. The more important sources from which they were obtained are as follows: collections brought together by Professor W. Wolterstorff from central and eastern Germany, and presented by the late Lord Lilford; collections made in Roumania by the late E. Dodson under the direction of Major G. E. H. Barrett-Hamilton, and presented by the late Lord Lilford; material from southern Spain presented by the late Lord Lilford; extensive collections made in south-western France, in southern Italy and in Sicily by A. Robert and presented by Mr. Oldfield Thomas; collections from south-central France and the vicinity of Strassburg, Germany, made by C. Mottaz and presented by Mr. O. Thomas; small collections from Denmark, Holland, Pas-de-Calais, Brittany, Portugal, the Balearic Islands, Switzerland and northern Italy, made and presented by Mr. O. Thomas; collection from central and northern Spain made by N. Gonzalez and presented by Mr. O. Thomas; a large collection from miscellaneous sources brought together and presented by Major G. E. H. Barrett-Hamilton; a collection from Greece made by C. Mottaz and presented by

Mr. J. I. S. Whitaker and the Hon. N. C. Rothschild; a collection from Spain and southern France made by G. S. Miller and purchased by the Museum; several collections from Transylvania made by C. G. Danford; collections from Hungary made and presented by the Hon. N. C. Rothschild and Mrs. Rothschild; smaller collections and single specimens have been received from many other persons,\* whose names will be found in the detailed lists of material in this Catalogue.

Although unquestionably forming the largest of all collections of European mammals the material in the British Museum is not sufficient to be made the basis of a monographic study of the fauna. Free use has, therefore, been made, throughout the preparation of this Catalogue, of specimens in other collections. Chief among these are the United States National Museum in Washington and the private collection of Charles Mottaz in Geneva. The material at Washington, about 4000 specimens, is mostly from the following sources: (a) Sweden, Germany, Switzerland and Belgium, collected by J. Alden Loring; (b) Sicily, Italy and the region of Barcelonnette, Basses-Alpes, France, by Dane Coolidge; (c) south-western France, by Robert T. Young; (d) north-eastern Germany, the Riesengebirge and Harz Mountains, by F. L. J. Boettcher. There are also miscellaneous smaller collections from Switzerland (G. S. Miller, L. Stejneger, E. H. Zollikofer), Belgium (de Sélys-Longchamps), Holland (G. S. Miller), Denmark (L. Stejneger), Norway (T. Stejneger) and Sweden (Sundevall, Tullberg, Lönning). Finally, the Merriam collection, now the property of the U.S. National Museum but not yet catalogued, contains numerous European specimens, for the most part received from de Sélys-Longchamps. The Mottaz collection, about 3000 specimens, is especially rich in series of the smaller mammals of Switzerland and the adjoining portions of France; it also contains useful material from Italy and western France (Charente). Other supplemental material to which I have been given free access, or which has been sent for examination in London or Washington, is contained in the museums of Madrid (types of Cabrera), Nimes (types of Crespon), Paris (types of Geoffroy and other historic specimens), Genoa (Italian Bats, Microtines and Ungulates), Turin (Italian mammals, especially Ungulates), Naples (type of *Myotis oxygnathus* Monticelli), Geneva (types of Fatio, authentic Swiss

\* This is particularly true of the many friends of the Museum who have aided in procuring the large series of British mammals.

specimens of *Lynx*), Lausanne Agricultural School (skull of *Ursus "formicarius"* from the Alps), Munich (type of *Spalax græcus* Nehring), Berlin Agricultural High School (type of *Arvicola ratticeps stinmingi* Nehring), Breslau (skulls of foxes), Leiden (co-types of *Arvicola arcanarius* de Sélvs-Longchamps). Copenhagen (*Mus jæroensis* and small carnivores), Christiania (*Sorex*, *Evotomys*, etc.), Stockholm (Swedish carnivores and rodents), Cambridge (*Mustela erminea ricinæ*, *Lemmus lemmus "crassilens"*) and Edinburgh (rodents from northern Scotland). Private collections which have been in the same generous manner placed at my disposal are those of Mr. Angel Cabrera, of Madrid (Spanish mammals, including several types), Dr. Enrico Festa, of Turin (Italian mammals), Mr. Angelo Ghidini, of Geneva (Swiss and north Italian mammals), and Dr. Fernand Lataste, of Cadillac-sur-Garonne, France (carnivores and microtines).

The total number of specimens on which this work is based approximates 11,500. All those of which definite record has been made are enumerated in the paragraphs headed: Specimens examined.\* Absence of a note to the contrary indicates that all the specimens from a given locality are in the British Museum. Discrepancies frequently occur between the number of "specimens examined" and the number tabulated in the final paragraph as forming part of the Museum collection. These result from the fact that under "specimens examined" are included duplicates as well as registered specimens, while only the latter appear in the final lists.†

For the purposes of this Catalogue, "Western Europe" is regarded as including the continent of Europe outside the frontiers of Russia; also the immediately adjacent islands, and Spitzbergen, Iceland, and the Azores. The members of the living mammal fauna of this region, exclusive of the cetaceans, pinnipeds, and species such as *Bubalus bubalis* in Italy and *Simia sylvanus* ‡ on the Rock of Gibraltar, which certainly owe

\* In these lists 11,372 specimens are recorded. They are distributed as follows: Insectivora, 1,777; Chiroptera, 2,210; Carnivora, 877; Rodentia Duplicidentata, 379, Rodentia Simplicidentata, 5,854; Ungulata, 284.

† Certain duplicates have been transferred to the United States National Museum since the lists of "specimens examined" were prepared. No attempt has been made to alter the records in the lists on this account; but the U.S.N.M. numbers of such specimens are frequently to be found in the Tables of cranial measurements. (All numbers above 10,000 indicate specimens in Washington.)

‡ For use of this name in place of "*Macacus inuus*," see Thomas, Proc. Zool. Soc. London, 1911, pp. 125-126, March, 1911.

their presence to artificial introduction, are treated monographically on the basis of the material already enumerated. This material has been found sufficient, in most of the groups, to give what appears to be a fairly satisfactory idea of the essential features of the fauna. In the ungulates and the larger carnivores, however, it is so totally inadequate that no attempt could be made to revise the genera by which they are represented. This is especially to be regretted on account of the fact that some of these larger mammals are nearly extinct, while others are being modified by the introduction of foreign stock to replenish exhausted game preserves. Immediate action is necessary if the final opportunity to gain a clear understanding of this part of the European fauna is not to be lost.

The literature of European mammals is so voluminous, particularly as regards local lists and special notes on distribution, and it is for the most part based on conceptions of species and local races so different from those underlying the present work, that an amount of labour incommensurate with the importance of the results would be required to prepare extended bibliographical Tables for each form recognized. The citations are, therefore, restricted to those which seem of importance in giving a clear idea of the systematic history of each animal; that is, to the specific and sub-specific names under which it may have been described, to the first use of the actual binomial or trinomial here adopted, to the names used in the monographic works of Blasius, 1857, and Trouessart, 1910, and to any other publication which might seem pertinent to a particular case.

In deciding questions of nomenclature, an attempt has been made to apply the International Code and the rulings of the Commission strictly and consistently, even to the reluctant acceptance of the terms applied to genera by authors who followed a system different from that now in use.

With the exception of figure 121, lent by the Smithsonian Institution, all the illustrations are original. The drawings of teeth were made in London by Mr. A. J. Engel Terzi; part of those of the skulls were made by Mr. Terzi; the rest were done in Washington by Mr. H. B. Bradford.

A few words in conclusion regarding the actual making of the manuscript. I prepared all the descriptions, synonymies, lists of specimens examined, and Tables of cranial measurements. The external measurements, which are not to be regarded as

more than approximately accurate, are mostly given as recorded on the labels, though much verification and correction for ears and hind feet has been done from the dried specimens. In order to economize time, the records of registered material were made directly from the specimens which I had identified. Mrs. Oldfield Thomas and Mr. R. C. Wroughton carried out this portion of the work.

G. S. M.

WASHINGTON,  
July 1, 1912.

ORDER.	Number of genera recognized.	Number of forms recognized.	Number of forms not represented in B.M.	Number of recognized forms not seen.
INSECTIVORA . . . .	7	45	5	0
CHIROPTERA . . . .	10	33	0	0
CARNIVORA . . . .	15	47	1	0
RODENTIA DUPLICIDENTATA	2	19	1	0
"    SIMPLICIDENTATA	26	139	6	2
UNGULATA . . . .	9	31	9	4
TOTAL . . . .	69	314	22	6

3 3.	St. Asaph, Denbighshire, Wales.	Charles Oldham (c & v).	11. 1. 3. 5-7.
1.	Conway, Carnarvonshire.	Sir W. Jardine (c & v).	60. 9. 17. 1.
9.	Great Grimsby, Lincolnshire, England. ( <i>Caton Haigh.</i> )	G. Barrett-Hamilton (v).	11. 1. 2. 98.
	( <i>Coward.</i> )		
2 al.	Hope End, Herefordshire.	N. C. Hewitt (c & v).	—
1 al.	Wells, Somerset.	S. Lewis (c & v).	5. 1. 24. 1.
1.	Devizes, Wiltshire.	J. E. Harting (c & v).	87. 2. 21. 1.
1, ♀ al.	Zeals, Wiltshire.	F. Norgate (c & v).	4. 11. 6. 1-2.
2 ♀.	Devonshire.	Oxley Grabham (c & v).	11. 1. 3. 8-9.
3.	Ragley House, Warwickshire.	Tomes Collection.	7. 1. 1. 289-291.

### RHINOLOPHUS EURYALE <sup>B</sup>Blasius.

1853. *Rhinolophus euryale* Blasius, Wiegmann's Archiv für Naturgesch., 1853, 1, p. 49 (Milan, Italy).
1857. *Rhinolophus euryale* Blasius, Säugethiere Deutschlands, p. 35.
1878. *Rhinolophus euryale* Dobson, Catal. Chiropt. Brit. Mus., p. 116.
1904. *E[uryalus] toscanus* Andersen and Matschie, Sitz.-Ber. Gesellsch. Naturforsch. Freunde, Berlin, p. 77 (Caverna di Parignano, Mt. Pisani, Italy).
1904. *E[uryalus] atlanticus* Andersen and Matschie, Sitz.-Ber. Gesellsch. Naturforsch. Freunde, Berlin, p. 77 (St. Paterne, Indre-et-Loire, France).
1904. *E[uryalus] cabreræ* Andersen and Matschie, Sitz.-Ber. Gesellsch. Naturforsch. Freunde, Berlin, p. 78 (Alcalá de Henares, Madrid, Spain).
1910. *Rhinolophus euryale*, *R. euryale atlanticus*, *R. euryale toscanus*, *R. euryale cabreræ* Trouessart, Faune Mamm. d'Europe, pp. 5-7.

*Type locality*.—Milan, Italy.

*Geographical distribution*.—Southern Europe from Portugal to Greece, north to Hungary and central France.

*Diagnosis*.—Size medium, forearm, 44.6 to 49, condylobasal length of skull, 16.4 to 18, mandible, 12 to 13, upper tooth-row 6.2 to 6.6; noseleaf with parallel-sided, bluntly rounded sella and high, sharply pointed connecting process, the lancet gradually narrowing to a bluntly cuneate tip; fourth finger with first phalanx slightly more than one-third as long as second (ratio about 38); large upper premolar separated from canine by a narrow space occupied by the much reduced small premolar.

*External characters*.—Size intermediate between that of the Greater and Lesser Horseshoes. General outline of noseleaf (fig. 26 c) about as in *Rhinolophus ferrum-equinum*; sella parallel sided, rounded off above, connecting process sharply linear-pointed, rising conspicuously above sella; lancet with slight constriction above middle, beyond which the tip narrows gradually to a bluntly cuneate point. Ear when laid forward extending about 5 mm. beyond extremity of muzzle, its tip less attenuate and less noticeably curved backward than in *Rhinolophus ferrum-equinum*.

CRANIAL MEASUREMENTS OF *RHINOLOPHUS EURYALX*.

Locality.	Number.	Sex.	Comylobasal length.	Zygomatic breadth.	Interorbital constriction.	Lachrymal breadth.	Breadth of brain-case above Zygomatica.	Depth of brain-case (median).	Mandible.	Maxillary tooth-row (exclusive of incisor).	Mandibular tooth-row (exclusive of incisors).	Observations.
Hungary: Orsova	7. 9. 16. 7	♀	17.0	9.8	2.2	5.0	8.0	6.0	12.0	6.2	6.8	Teeth not worn.
Ofener Mts.	94. 7. 18. 2	♂	17.6	9.4	2.2	5.2	8.2	6.0	12.0	6.4	7.0	" slightly worn.
" " "	94. 7. 18. 3		—	9.8	2.4	5.2	8.6	6.0	12.2	6.6	7.0	" not worn.
Dalmatia: Zara	11. 1. 1. 128	♀	17±	9.2	2.2	5.2	8.0	6.0	12.2	6.2	6.8	"
(Greece: Missolongi	153595	♀	17.2	8.8	2.0	5.0	8.0	6.0	11.8	6.4	6.6	"
" "	153596	♀	17.0	9.0	2.2	5.2	8.2	5.8	11.6	6.2	6.6	"
Italy: Siena	85687	♀	17±	9.4	2.2	5.0	8.4	—	11.6	6.2	6.4	"
" "	85688	♀	17.0	9.2	2.4	5.0	8.4	5.8	11.8	6.2	6.6	"
Velletri, Rome	105790	♂	17.2	9.2	2.4	5.0	8.2	6.0	11.8	6.2	6.8	" slightly worn.
" " "	105788	♀	17.0	9.2	2.2	5.0	8.2	6.0	11.6	6.4	6.8	" not worn.
" " "	105789	♀	17.2	9.4	2.2	5.0	8.4	6.0	11.8	6.2	6.6	" slightly worn.
" " "	105790	♀	16.8	9.2	2.2	5.0	8.2	5.8	11.6	6.2	6.6	" not worn.
" " "	105792	♀	17.2	9.2	2.4	5.0	8.2	6.2	11.8	6.2	6.6	" slightly worn.
Marsala, Sicily	6. 8. 4. 10	♂	17.0	9.4	2.4	5.0	8.0	6.0	11.8	6.4	6.8	" not worn.
" " "	6. 8. 4. 11	♂	17.0	10.0	2.6	5.0	8.0	6.2	12.0	6.6	7.0	" slightly worn.
Finalborgo, Liguria	540 Mottaz	♂	17.2	9.2	2.2	5.0	8.2	6.2	12.0	6.4	7.0	" not worn.
" " "	551	♂	17.6	9.4	2.4	5.0	8.2	6.0	12.0	6.2	6.8	"
" " "	553	♂	17.4	9.6	2.4	5.0	8.2	6.0	12.0	6.4	7.0	" slightly worn.
" " "	554	♂	17.2	9.2	2.2	5.0	8.2	6.0	12.0	6.4	7.0	" not worn.
" " "	539	♀	17.8±	9.2	2.2	5.0	8.2	—	12.0	6.2	6.8	" slightly worn.
" " "	552	♀	17.4	9.4	2.2	5.0	8.2	6.0	12.0	6.2	6.8	" not worn.



Italy: Genoa . . . . .	38339	♂	17±	—	2.4	5.2	—	—	11.8	6.4	7.0	Teeth moderately worn.
" . . . . .	38341	♂	16.8	9.2	2.2	5.2	8.6	6.4	12.0	6.2	6.8	" slightly worn.
" . . . . .	38340	♀	16.6	9.2	2.2	5.2	8.2	6.2	11.8	6.2	6.8	" not worn.
France: Gapeau River, Var . . . . .	8. 3. 15. 4	♂	17.6	9.4	2.2	5.0	8.4	6.2	11.6	6.4	7.0	" "
" " " . . . . .	8. 3. 15. 5	♂	17.4	9.2	2.2	5.0	8.0	5.8	12.0	6.6	6.8	" slightly worn.
" " " . . . . .	8. 3. 15. 2	♀	17.0	9.4	2.2	5.0	8.2	6.0	12.0	6.2	6.6	" "
" " " . . . . .	8. 3. 15. 3	♀	17.2	9.2	2.2	5.0	8.2	6.0	12.0	6.4	6.6	" not worn.
near Nimes, Gard . . . . .	Hu. 418	♂	17.2	9.4	2.4	5.0	8.2	6.0	12.0	6.2	6.8	" "
" " " . . . . .	Mottaz											
" " " . . . . .	Hu. 437	♂	17±	9.0	2.2	5.0	8.0	—	11.6	6.2	6.6	" "
" " " . . . . .	Mottaz											
" " " . . . . .	Hu. 155	♀	16.4	9.0	2.2	5.0	8.0	6.0	11.8	6.2	6.6	" "
" " " . . . . .	Mottaz											
" " " . . . . .	Hu. 422	♀	17.2	9.2	2.2	5.0	7.8	5.8	11.6	6.2	6.4	" slightly worn.
" " " . . . . .	Mottaz											
" " " . . . . .	Hu. 427	♀	17.0	9.2	2.2	5.0	8.0	5.6	11.6	6.2	6.6	" not worn.
" " " . . . . .	Mottaz											
" " " . . . . .	Hu. 429	♀	16.8	9.0	2.2	5.0	8.0	5.8	11.4	6.2	6.4	" "
" " " . . . . .	Mottaz											
" " " . . . . .	Hu. 421		17.0	9.0	2.2	5.0	8.2	6.0	11.8	6.2	6.8	" "
" " " . . . . .	Mottaz											
" " " . . . . .	Hu. 435		17.2	9.2	2.4	5.0	8.2	6.2	12.0	6.4	6.8	" "
" " " . . . . .	Mottaz											
" " " . . . . .	Hu. 436		17.0	9.0	2.2	4.8	8.4	6.0	11.6	6.2	6.8	" "
" " " . . . . .	Mottaz											
" " " . . . . .	Hu. 439		17.2	9.2	2.2	5.0	8.2	5.8	12.0	6.2	6.6	" "
" " " . . . . .	Mottaz											
St. Paterne, Indre-et-Loire	88351	♀	17.2	9.4	2.4	5.2	8.4	5.8	11.6	6.4	6.6	" slightly worn.
Spain: near Madrid . . . . .	5. 2. 3. 2	♂	17.2	9.4	2.2	5.0	8.4	6.0	12.0	6.2	6.8	" "
Villalba, Lugo . . . . .	94. 1. 1. 1	♀	17.4	9.6	2.2	5.0	8.6	5.8	12.0	6.4	6.6	" not worn.
Portugal: Cintra . . . . .	98. 2. 2. 2	♀	17.0	9.8	2.2	5.0	8.0	6.0	12.0	6.4	6.8	" "
" " " . . . . .	98. 2. 2. 3	♀	17.2	9.6	2.2	5.0	8.0	5.8	12.0	6.2	6.8	" slightly worn.

and *R. hipposideros*; antitragal lobe about half as high as conch, its width about equal to its height. Wing peculiar in the shortening of the first phalanx of fourth finger to a little more than one-third that of second (average of 10 specimens from Gard, France: first phalanx, 6.6 mm.; second phalanx, 17.4 mm.; *R. ferrum-equinum* first phalanx, 6.5 mm.; second phalanx, 17.5 mm.; *R. mehelyi* first phalanx, 6.5 mm.; second phalanx, 17.5 mm.). Tibia about half as long as tibia.

*Colour*.—While essentially as in *Rhinolophus ferrum-equinum* and *R. hipposideros*, the colour usually differs slightly in the more evident contrast of the light area between ears and the more drabby general effect of underparts. Median region below occasionally rather paler than usual, sometimes nearly as in *R. mehelyi*.

*Skull*.—In both size (greatest length about 19 mm.) and form the skull is somewhat intermediate between that of *Rhinolophus ferrum-equinum* and *R. hipposideros*. It resembles or surpasses the latter in the breadth of brain-case relatively to narrow maxillary region, but more nearly agrees with the former in the nearly parallel-sided mesopterygoid space, the anterior border of which is separated from posterior molars by well defined palatal emarginations. The mesopterygoid space is, however, shorter in proportion to its width than in *R. ferrum-equinum*. Floor of brain-case between cochleæ less narrowed than in the preceding species. Nasal region slightly less inflated than in *R. hipposideros*, and inflated area relatively shorter, its posterior border rising abruptly above interorbital level.

*Teeth*.—In all respects the teeth closely resemble those of *Rhinolophus ferrum-equinum* (apart from their smaller size), except that the upper canine is relatively less robust, the anterior upper premolar is less reduced (its crown area about double that of upper incisor), and anterior lower premolar is less crowded between canine and posterior premolar.

*Measurements*.—For cranial and external measurements see Tables, pp. 156 and 160.

*Specimens examined*.—About 130, from the following localities:—

PORTUGAL: Cintra, 6.

SPAIN: Villalba, Lugo, 1; Madrid, 2; Silos, Burgos, 1.

FRANCE: St. Paterne, Indre-et-Loire, 3 (B.M. and U.S.N.M.); St. Genies, Gard, about 50 (Mottaz); Gapeau River, Var, 12.

ITALY: Near Genoa, 33 (B.M., U.S.N.M., Genoa, and Mottaz); Monte Pisanino, 2; Siena, 3 (U.S.N.M.); Rome, 2; Velletri, Rome, 5 (U.S.N.M.); Nicotera, Calabria, 1; Marsala, Sicily, 2.

SARDINIA: Mcunt Gennargentu, 3 (U.S.N.M.).

AUSTRIA-HUNGARY: Ofener Mountains, 2; Orsova, 1.

DALMATIA: Zara, 1.

GREECE: Missolongi, Acarnania, 2 (U.S.N.M.).

*Remarks*.—*Rhinolophus euryale* is so readily distinguishable from all the other European members of the genus, except *R. mehelyi*, as to require no special comparisons. From *R. mehelyi* it is most easily distinguished by the form of the lancet and

antitragus, together with its rather smaller size and usually darker colour. With the material at hand I am unable to recognize the local forms of this species described by Andersen and Matschie, as the alleged differences appear to be within the range of normal individual variation.

2 ♂, 2 ♀ al.	Cintra, 500 m. Portugal.	O. Thomas (c & p).	98. 2. 2. 53-56.
♀ al.	Villalba, Lugo, N.W. Spain.	Dr. V. I. Seoane (p).	94. 1. 1. 1.
♂, ♀ al.	Madrid.	A. Cabrera (p).	5. 2. 3. 1-2.
1 al.	St. Paterne, Indre-et-Loire, France.	Royal Army Medical College (p).	9. 1. 4. 9.
♀ al.	St. Paterne, Indre-et-Loire.	G. E. Dobson (p).	80. 12. 14. 3.
9 al.	Gapeau River, Var.	Dr. K. Jordan (c & p).	8. 3. 15. 2-10.
3 ♂, ♀ al.	Finalborgo, Liguria, Italy. ( <i>A. Gagero</i> .)	Marquis G. Doria (p).	6. 12. 1. 14-17.
2 al.	Monte Pisanino, Liguria.	Lord Lilford (p).	73. 1. 8. 6.
2 ♂.	Rome. ( <i>C. Coli</i> .)	G. Barrett-Hamilton (p).	11. 1. 2. 40-41.
♂ al.	Nicotera, Calabria.	Florence Museum (p).	85. 7. 6. 1.
2 ♂.	Marsala, Sicily. ( <i>f. Robert</i> .)	O. Thomas (p).	6. 8. 4. 10-11.
1 ♀ al.	Ofener Mts., Budapest.	Budapest Museum (p).	94. 7. 18. 2-3.
♀.	Orsova, Hungary.	Hon. W. Rothschild (p).	7. 9. 16. 7.
♀.	Zara, Dalmatia, 50 m. ( <i>Kolombatovic</i> .)	Lord Lilford (p).	11. 1. 1. 128.
1 al.	S. Europe.	Purchased (Parreys).	47. 5. 27. 44.

#### RHINOLOPHUS MEHELYI Matschie.

1901. *Rhinolophus mehelyi* Matschie, Sitz.-Ber. Gesellsch. Naturforsch. Freunde, Berlin, p. 225 (Bucharest, Roumania).  
 1904. *Rhinolophus carpetanus* Cabrera, Mem. Soc. Españ. Hist. Nat., II, p. 254 (Madrid, Spain).  
 1910. *Rhinolophus euryale mehelyi* and *R. carpetanus* Trouessart, Faune Mamm. d'Europe, pp. 7-8.

*Type locality*.—Bucharest, Roumania.

*Geographical distribution*.—Roumania, southern France (Gard), Sardinia, central Spain. Details of distribution not known.

*Diagnosis*.—Like *Rhinolophus euryale* but larger (forearm, 48.6 to 51.4; upper tooth-row about 7 mm.); noseleaf with lancet abruptly narrowed to a linear tip; ear with antitragal lobe relatively broad and low; fourth finger with first phalanx decidedly more than one-third as long as second (ratio about 44); colour usually paler than in the related animal.

*External characters*.—Slightly larger and more robust than *Rhinolophus euryale*, a difference especially noticeable in freshly killed individuals. Noseleaf as in *R. euryale*, except that the lancet is very abruptly narrowed above middle to a distinctly linear tip. Ear as in *R. euryale* but broader, the antitragal lobe

EXTERNAL MEASUREMENTS OF *RHINOLOPHUS EURYALE* AND *R. MEHELYI*.

Locality.	Number.	Sex.	Head and body.	Tail.	Tibia.	Foot.	Forearm.	Thumb.	Third finger.	Fifth finger.	Ear from meatus.	Ear from crown.	Width of ear.	First phalanx of fourth finger.	Second phalanx of fourth finger.
<b>R. euryale.</b>															
Portugal: Cintra . . . . .	98. 2. 2. 53	♂	45.0	25.0	19.6	9.0	45.4	7.4	73	56	22.0	17.0	16.0	6.6	18.0
" . . . . .	98. 2. 2. 54	♂	44.0	25.0	18.4	9.0	45.6	7.4	72	55	22.0	17.4	16.0	6.6	17.0
" . . . . .	98. 2. 2. 55	♀	46.0	23.0	18.6	8.6	46.2	7.2	72	57	21.0	17.2	16.0	6.4	17.0
" . . . . .	98. 2. 2. 56	♀	44.0	22.0	19.0	9.0	46.0	7.4	73	57	21.6	18.0	16.0	6.8	18.0
Spain: near Madrid . . . . .	5. 2. 3. 2	♂	53.0	27.0	18.8	9.6	47.0	7.2	78	61	22.0	18.0	16.0	7.2	17.2
Villalba, Lugo . . . . .	94. 1. 1. 1	♀	49.0	27.0	20.0	9.8	48.6	8.2	79	63	21.4	17.0	16.0	7.0	19.0
France: St. Paterne, Indre-et-Loire . . . . .	80. 12. 14. 3	♀	43.0	23.0	19.0	9.8	48.2	8.0	78	62	20.0	17.0	15.0	6.8	17.2
" . . . . .	144535	♀	50.0	27.0	19.0	9.8	48.0	8.0	71	60	20.0	17.0	17.0	6.6	18.0
St. Genies, Gard . . . . .	Hu. 238 Mottaz	♀	54.0	24.0	19.8	9.8	48.4	7.2	77	61	21.4	19.0	15.0	7.0	18.4
" . . . . .	Hu. 241 Mottaz	♀	25.0	22.4	20.0	9.0	48.0	7.0	75	60	21.0	17.6	16.0	7.0	18.0
" . . . . .	Hu. 410 Mottaz	♂	55.0	23.0	19.0	10.0	46.4	6.6	73	58	22.0	20.4	17.0	6.6	17.6
" . . . . .	Hu. 418 Mottaz	♂	54.0	23.4	18.4	10.0	47.6	7.2	76	59	22.0	19.6	16.0	6.6	18.2
" . . . . .	Hu. 438 Mottaz	♀	55.0	26.0	20.4	11.0	49.0	7.2	78	62	22.0	19.0	16.0	7.4	19.6
" . . . . .	Hu. 443 Mottaz	♀	56.0	24.0	20.0	10.6	47.6	7.6	76	60	22.0	20.2	16.0	7.0	19.0
Gapeau River, Var. . . . .	8. 3. 15. 2	♀	46.0	23.0	19.0	9.0	47.6	8.6	74	61	21.0	18.0	16.0	7.2	16.8
" . . . . .	8. 3. 15. 3	♀	50.0	23.0	19.4	9.0	46.4	7.4	74	59	21.0	18.6	16.0	6.4	17.0
" . . . . .	8. 3. 15. 4	♂	48.6	27.0	18.6	9.6	47.4	6.8	76	60	23.0	18.0	17.0	6.6	17.6
" . . . . .	8. 3. 15. 5	♂	52.0	23.4	19.6	9.8	48.0	8.0	78	61	20.0	19.2	17.0	6.8	18.0

Italy: Finalborgo, Liguria	6. 12. 1. 14	♂	45·0	25·0	20·4	10·0	48·0	7·6	76	59	21·6	18·6	16·0	6·8	17·6
" "	6. 12. 1. 15	♂	46·0	24·0	20·0	9·8	48·0	8·6	75	59	21·0	19·0	15·6	6·6	17·4
" "	6. 12. 1. 16	♂	44·0	25·2	20·0	9·6	48·0	9·0	77	61	21·4	18·2	16·4	6·6	17·0
" "	6. 12. 1. 17	♀	46·0	26·0	20·0	9·8	47·4	7·6	77	62	21·0	18·2	16·0	6·8	17·8
" "	539 Mottaz	♀	—	28·0	20·0	9·4	48·4	8·0	76	60	—	—	—	7·0	18·0
" "	552 Mottaz	♀	—	25·0	18·6	9·0	47·6	7·4	76	57	—	—	—	6·6	18·0
Dalmatia: Zara	11. 1. 1. 128	♀	—	—	—	9·0	48·6	7·0	76	60	—	—	—	7·0	18·0
Austria-Hungary: Ofener Mts.	94. 7. 18. 2	♂	50·0	24·0	21·0	9·0	47·8	7·0	75	62	22·0	18·2	16·0	6·8	17·8
" "	94. 7. 18. 3	♀	55·0	25·0	20·0	10·2	48·6	8·0	78	63	21·4	18·4	16·0	6·6	17·8
" " Orsova	7. 9. 16. 7	♀	58·0	30·0	20·0	9·2	47·0	8·0	76	59	—	—	—	7·0	18·4
Greece: Missolongi, Acarania.	153595	♀	—	—	18·8	9·8	46·0	7·0	73	—	—	—	—	8·0	15·8
" "	153596	♀	—	—	19·0	9·2	45·0	7·0	68	—	—	—	—	7·2	17·0
<b>R. mehelyi.</b>															
Spain: Madrid	5. 2. 3. 1*	♀	56·0	27·6	21·0	11·0	51·0	9·0	82	61	23·0	19·0	16·0	8·0	18·0
France: St. Genies, Gard	Hu. 111	♂	60·0	24·0	21·4	9·0	50·4	7·4	82	64	23·6	19·0	16·0	8·0	18·0
" "	Mottaz														
" "	Hu. 242	♀	58·0	26·0	22·0	10·0	51·0	7·2	80	63	23·0	18·6	16·0	7·6	18·0
" "	Mottaz														
" "	Hu. 415	♂	64·0	26·4	22·0	12·0	50·6	9·0	81	—	23·4	19·6	16·0	8·0	18·0
" "	Mottaz														
" "	Hu. 433	♂	61·0	27·0	22·0	12·2	51·4	8·8	81	—	24·0	21·0	16·6	8·0	18·4
" "	Mottaz														
" "	Hu. 414	♀	60·0	25·0	21·0	11·4	49·6	8·8	80	—	23·4	21·6	15·6	7·6	17·4
" "	Mottaz														
" "	Hu. 434	♀	61·0	25·0	21·4	12·6	51·2	8·8	83	—	23·4	22·0	16·4	8·0	18·4
" "	Mottaz														
Sardinia: Sassari	6. 12. 1. 18	♂	51·0	25·0	21·0	10·0	48·8	8·6	81	63	22·0	18·4	15·6	7·6	18·0
" "	6. 12. 1. 19	♂	53·0	23·0	20·0	10·0	49·0	8·0	80	63	22·0	18·0	16·4	7·2	17·4
" "	86536	♂	62·0	24·0	21·0	11·4	49·0	9·0	81	62	22·6	18·0	16·4	7·4	17·6
" "	122133	♂	—	—	21·6	11·2	50·0	8·0	84	59	—	—	—	8·0	18·8
W Roumania: Bucharest	Mottaz	♀	57·4	25·0	21·8	11·0	51·0	8·6	86	—	23·0	20·0	16·4	8·0	19·0
" " Dobrudscha	Mottaz	♀	—	—	—	—	—	—	—	—	—	—	—	—	—

\* Paratype of *carpetanus* Cabrera.

scarcely half as high as conch, its width slightly greater than height. Wing differing from that of the related animal in the less degree of shortening of the first phalanx of fourth finger as compared with second (average of ten specimens from Gard, France, first phalanx, 8.1 : second phalanx, 18.0 : ratio of first to second, ++ +). Foot as in *R. euryale*.

*Colour*.—Though not invariably distinguishable the colour is usually paler than that of *Rhinolophus euryale*, a difference especially noticeable in the region between ears, on sides of face and neck, on chin and throat, and along median portion of chest and belly, all of which are frequently a very pale almost whitish drab-grey.\*

*Skull and teeth*.—Except for its slightly greater average size (greatest length about 20 mm.) the skull agrees with that of *Rhinolophus euryale*. Teeth more robust than those of the related animal, but not peculiar in form.

*Measurements*.—For external and cranial measurements see Tables, pp. 161, 163.

*Specimens examined*.—About fifty-five, from the following localities:—

SPAIN: Near Madrid, 1 (paratype of *carpetanus*).

FRANCE: Near St. Genies, Gard, about 50, skins and in flesh (Mottaz).

SARDINIA: Sassari, 3 (B.M. and U.S.N.M.).

ROUMANIA: Bucharest, 1 (U.S.N.M.); Dobrudscha, 1 (Mottaz).

*Remarks*.—At first sight this species appears very similar to *Rhinolophus euryale*, together with which it occurs; but its characters when once understood are readily appreciable. The ranges of the two animals will probably be found to be essentially coincident, though *Rhinolophus mehelyi* may prove to be more strictly confined to the Mediterranean region than the smaller form.

♀. Madrid.	A. Cabrera (p.)	5. 2. 3. 1.
	(Paratype of <i>R. carpetanus</i> Cabrera.)	
2 ♂ al. Sassari, Sardinia.	Marquis G. Doria (p.)	6. 12. 1. 18-19.

#### RHINOLOPHUS BLASII Peters.

1857. *Rhinolophus clivosus* Blasius, Säugethiere Deutschlands, p. 33. Not of Rüppell, 1824 (Italy, Sicily, Istria and Dalmatia).

1866. *Rhinolophus blasii* Peters, Monatsber. k. Akad. Wissensch. Berlin, p. 17 (Renaming of *clivosus* Blasius).

1878. *Rhinolophus blasii* Dobson, Catal. Chiropt. Brit. Mus., p. 117.

1910. *Rhinolophus blasiusi* Trouessart, Faune Mamm. d'Europe, p. 9.

*Type locality*.—South-eastern Europe.

*Geographical distribution*.—Eastern portion of the Mediterranean region: Cyprus, Greece, Italy?

*Diagnosis*.—Size essentially as in *Rhinolophus euryale*; nose-

\* When seen by candle-light flying in caverns these bats are said to appear entirely white.

CRANIAL MEASUREMENTS OF *RHINOLOPHUS MEHELYI* AND *R. BLASII*.

Locality.	Number.	Sex.	Condylabosal length.	Zygomatic breadth.	Interorbital constriction.	Lachrymal breadth.	Breadth of brain-case above zygomata.	Depth of brain-case (median).	Mandible.	Maxillary tooth-row (exclusive of incisor).	Mandibular tooth-row (exclusive of incisors).	Observations.
<b>R. mehelyi.</b>												
Roumania: Dobrudscha .	Mottaz	♀	18·0	10·6	2·6	5·2	8·8	—	13·0	6·8	7·2	Teeth no worn.
Bucharest .	122133		17·6	10·4	2·6	5·2	8·8	6·0	12·6	6·8	7·0	" "
Sardinia: Sassari .	6. 12. 1. 18	♂	17·8	10·0	2·6	5·2	9·0	6·0	12·8	7·0	7·4	" "
" .	6. 12. 1. 19	♂	18·0	10·0	2·6	5·4	9·2	6·0	13·0	7·0	7·2	" slightly worn.
" .	86536	♂	17·8	10·0	2·6	5·4	9·0	6·0	12·6	7·0	7·2	" moderately worn.
France: near Nîmes, Gard	Hu. 143 Mottaz	♂	17·8	10·0	2·4	5·2	8·6	6·0	12·8	6·8	7·2	" no worn.
" "	" 144 "	♂	17·4	9·8	2·6	5·2	8·6	6·2	12·8	6·8	7·2	" "
" "	" 145 "	♂	17·4	10·2	2·6	5·2	9·0	6·0	12·6	7·0	7·2	" "
" "	" 149 "	♀	17·6	10·4	2·6	5·2	8·8	6·2	12·6	7·0	7·2	" slightly worn.
" "	" 151 "	♀	17·6	10·2	2·6	5·2	8·6	6·0	12·4	6·8	7·2	" no worn.
" "	" 415 "		18·0	10·4	2·6	5·2	8·8	6·2	12·8	7·0	7·4	" "
" "	" 444 "		17·6	10·2	2·6	5·2	8·6	6·2	12·6	6·8	7·2	" "
" "	" 146 "	♂	17·8	10·2	2·6	5·2	9·0	6·0	12·6	6·8	7·2	" "
" "	" 152 "		18·0	10·2	2·6	5·2	9·0	6·0	12·8	7·0	7·2	" slightly worn.
" "	" 433 "		18±	10·0	2·6	5·2	8·6	5·8	12·6	6·8	7·2	" "
Spain: near Madrid .	5. 2. 3. 1*	♀	17·8	10·4	2·6	5·4	9·0	6·0	12·8	7·0	2·2	" "
<b>R. blasii.</b>												
♂ Cyprus . . . . .	94. 12. 1. 1	♀	17·6	9·0	2·0	5·0	8·0	5·8	11·8	6·8	7·0	" "
" . . . . .	94. 12. 1. 4	♀	17·4	9·0	2·2	5·0	8·0	6·0	11·8	6·8	7·0	" "
Greece: Nauplia . . .	37508		—	—	2·2	5·0	8±	—	12·0	6·8	7·0	" no worn.

 \* Topotype of *carpetanus* Cabrera.

leaf with cuneate sella and very high, sharply pointed connecting process; fourth finger with first phalanx more than half as long as second; no marked contrast between crown areas of anterior and posterior lower premolars, a character unique among the European members of the genus.

*Colour.*—The only skin of this species which I have examined is in bad condition. It indicates that the colour is not essentially different from that of *Rhinolophus euryale*.

*Skull.*—In general the skull resembles that of *Rhinolophus euryale*, with which it agrees in size and in the form of the nasal swellings as well as in that of mesopterygoid fossa and posterior portion of palate. Constriction at front of interparietal more pronounced than in any of the other European species, noticeably marking off the occipital region from rest of brain-case.

*Teeth.*—Incisors, canines and molars as in *Rhinolophus euryale*. Small upper premolar slightly less reduced, perfectly in the tooth-row, but showing no tendency to develop a cusp. Large upper premolar with anterior and posterior margins of crown essentially parallel, the posterior border nearly straight. Lower premolars differing from those of all the other European members of the genus in the approximately equal crown areas of the two larger teeth, the anterior subterete, the posterior with trapeziform section; shaft of posterior tooth with diameter in axis of tooth-row much less than transverse diameter, the cusp when viewed from the side appearing to rise from middle of crown with noticeable flat area before and behind it.

*Measurements.*—Average and extremes of four females from Cyprus: head and body, 48·4 (44–51); tail, 24·7 (24–25); tibia, 19·3 (19–20); foot, 9·7 (9·4–10); forearm, 45·3 (44·6–47); thumb, 7·5 (7–8); third finger, 70·3 (69–72); fifth finger, 57·7 (56–60); ear from meatus, 19·7 (19–20); ear from crown, 15·5 (15–16·4); width of ear, 14·7 (14–15). Adult from Nauplia, Greece: tibia, 18·8; foot, 9·6; forearm, 44·6; thumb, 8; third finger, 69; fifth finger, 57. For cranial measurements see Table, p. 163.

*Specimens examined.*—Five, from the following localities:—

CYPRUS: No exact locality, 4.

GREECE: Nauplia, 1 (U.S.N.M.).

*Remarks.*—This species is so readily distinguished from the other European members of the genus by the peculiarities of its noseleaf and lower premolar as to require no special comparisons. Its range appears to be strictly confined to the eastern portion of the Mediterranean region, not extending west of Italy.



distinguish any local geographical forms. Specimens from Seville representing the *isabellinus* of Cabrera I am unable to separate from true *serotinus*; the type of *boscai* Cabrera is a young of the same animal; *insularis* I have not seen, but there is nothing in the original description to indicate that it is distinct.\*

♂.	Kenley, Surrey, England.	W. R. Ogilvie-Grant (c & p).	11. 1. 3. 45.
2 ♀.	Whitstable, Kent.	C. H. B. Grant (c & p).	11. 1. 3. 46-47.
♀ al.	Wingham, Kent.	G. Donker (c & p).	90. 4. 17. 1.
1 st.	Yalding, Kent.	H. Reid (c & p).	97. 8. 27. 1.
3 ♀.	Yalding, Kent.	W. R. Ogilvie-Grant (c & p).	11. 1. 3. 42-44.
♀ al.	Isle of Wight.	Rev. C. Bury (c & p).	44. 6. 15. 7.
2.	Freshwater, Isle of Wight.	F. Bond (c & p).	61. 11. 5. 1-2.
1.	Freshwater, Isle of Wight. (F. Bond.)	Tomes Collection.	7. 1. 1. 352.
1.	Bembridge, Isle of Wight.	Tomes Collection.	7. 1. 1. 353.
♂, ♀.	Ingelheim, Rheinhessen, Germany.	C. Hilgert (c).	8. 11. 2. 1-2.
1.	Magdeburg, Saxony. (Wolterstorff.)	Lord Lilford (p).	11. 1. 1. 38.
2 ♂, ♀.	Strass, Burghheim, Bavaria. (Körbitz.)	Lord Lilford (p).	11. 1. 1. 33-35.
2 al.	Tübingen, Silesia.	Dr. A. Günther (p).	66. 2. 1. 7-8.
1 al.	Moravia, Hungary. ♂	Purchased (Parreys).	46. 6. 15. 54.
2.	Csallóköz-Somorja, Press- burg.	Budapest Museum (p).	94. 3. 1. 12-13.
2 al.	Budapest.	Budapest Museum (p).	94. 7. 18. 6-7.
5 ♂ al.	Transylvania.	C. G. Danford and J. A. Brown (c & p).	74. 7. 4. 1-5.
♂, ♀.	Zara, Dalmatia. (K. Bloss.)	Lord Lilford (p).	11. 1. 1. 36-37.
♂, ♀.	Bustenari, Prahova, 840 m. Roumania. (W. Dodson.)	Lord Lilford (p).	4. 4. 6. 2-3.
1 ♀.	Patras, Greece. (C. Mottaz.)	Hon. N. C. Rothschild (p).	8. 10. 2. 1-13, 15.
♀.	Patras.	C. Mottaz (c).	8. 11. 3. 3.
♀.	Athens. (C. Mottaz.)	Hon. N. C. Rothschild (p).	8. 10. 2. 14.
1 al.	Florence, Italy.	Florence Museum (p).	85. 7. 6. 13.
♂.	Rome. (C. Coli.)	G. Barrett-Hamilton (p).	11. 1. 2. 28.
♀.	Pajáres, Leon, Spain. (N. Gonzalez.)	O. Thomas (p).	8. 2. 9. 1.
♀ al.	Seville.	Dr. V. L. Seoane (p).	94. 1. 1. 6.
1 al.	Seville.	Seville Museum (p).	94. 5. 8. 1.
1.	Europe.	Leyden Museum (p).	37. 4. 23. 58.

#### EPTESICUS SODALIS Barrett-Hamilton.

1910. *Vespertilio sodalis* Barrett-Hamilton, Ann. and Mag. Nat. Hist., 8th ser., v, p. 291, March, 1910. Type in British Museum.
1910. *Eptesicus sodalis* Trouessart, Faune Mamm. d'Europe, p. 22.

*Type locality*.—Bustenari, Prahova, Roumania (in Carpathians, alt. 840 m.).

*Geographical distribution*.—Known only from the type locality and St. Gothard, Switzerland.

\* Mr. Cabrera has come to the same conclusion (Bol. Real Soc. Españ. Hist. Nat., vi, p. 449, December, 1908).

CRANIAL MEASUREMENTS OF *EPTESICUS SEROTINUS* AND *E. SODALIS*.

Locality.	Number.	Sex.	Condylolabial length.	Zygomatic breadth.	Interorbital constriction.	Lachrymal breadth.	Breadth of brain-case.	Depth of brain-case at middle.	Mandible.	Maxillary tooth-row.	Mandibular tooth-row.	Observations.
<b><i>E. serotinus.</i></b>												
England: Yalding, Kent.	152590	♀	19.8	14.6	4.6	8.2	9.8	6.0	15.4	7.8	8.4	Teeth slightly worn.
France: Barsac, Gironde	86926	♂	19.8	14.0	4.4	8.2	9.8	6.0	15.2	7.6	8.4	.. moderately worn.
Germany: Magdeburg	152588	♀	19.4	14.4	4.2	8.4	9.8	5.6	15.2	7.6	8.4	.. slightly worn.
Strass, near Burghheim	11. 1. 1. 33	♂	20.0	14.0	4.4	8.4	9.4	6.0	15.8	8.0	9.0	.. ..
Roumania: Bustenari	4. 4. 6. 3	♀	20.8	14.6	4.6	8.6	9.8	6.0	16.0	7.8	9.0	.. much worn.
Greece: Patras	8. 10. 2. 1	♀	21.0	14.8	4.2	8.4	10.0	6.0	16.2	8.0	8.6	.. ..
"	152575	♀	20.4	14.6	4.2	8.8	9.8	6.2	16.0	7.8	8.8	.. slightly worn.
"	8. 10. 2. 2	♀	20.6	15.0	4.6	8.4	10.0	6.0	16.0	8.0	8.6	.. much worn.
"	152576	♀	20.6	14.8	4.6	8.8	10.0	6.2	16.0	8.2	9.0	.. slightly worn.
"	152577	♀	20.4	14.4	4.2	8.4	9.8	6.0	15.8	8.0	8.8	.. ..
"	8. 10. 2. 3	♀	20.4	14.8	4.8	8.8	10.0	6.4	16.0	8.2	9.0	.. ..
"	8. 10. 2. 4	♀	20.2	14.2	4.6	8.6	9.8	6.0	15.6	8.0	9.0	.. ..

Greece: Patras . . . . .	152579	♀	20·4	14·8	4·6	8·6	10·0	6·2	15·8	8·0	8·8	Teeth slightly worn.
„ . . . . .	152580	♀	21·2	14·6	4·8	8·6	10·0	6·0	16·0	8·2	9·0	„ moderately worn.
„ . . . . .	8. 10. 2. 10	♀	20·0	14·6	4·4	8·6	9·8	6·0	15·4	7·8	8·8	„ much worn.
Italy: Siena . . . . .	152589	♂	20·6	15·4	4·8	8·8	10·0	6·0	15·8	8·0	9·0	„ „
„ . . . . .	86593	♀	19·6	14·4	4·4	8·4	9·8	6·2	15·0	7·4	8·4	„ slightly worn.
Florence . . . . .	37393		20·4	14·4	4·6	8·6	10·0	6·4	16·0	8·0	8·8	„ „
Vallombrosa . . . . .	114675	♂	19·2	14·0	4·2	8·0	9·6	6·0	14·8	7·6	8·2	„ „
Rome . . . . .	113871	♂	19·2	14·2	4·4	7·8	9·8	6·0	15·0	7·6	8·4	„ not worn.
„ . . . . .	113873	♂	19·8	—	4·2	7·8	—	—	15·4	7·8	8·6	„ „
Ustica Island, north of Sicily . . . . .	113892	♂	19·0	14·0	4·2	8·0	9·8	5·8	15·0	7·6	8·6	„ slightly worn.
Sardinia: Cagliari . . . . .	Genoa Z.	♂	20·2	—	4·4	8·6	9·8	6·0	15·6	8·2	9·0	„ not worn.
„ . . . . .	Genoa K.	♀	21·6	15·4	4·2	8·6	9·8	6·2	16·0	8·2	9·0	„ much worn.
Spain: Pajáres, Leon . . . . .	8. 2. 9. 1	♀	20·0	14·6	4·6	8·6	9·4	6·0	15·8	8·0	8·8	„ slightly worn.
Seville . . . . .	94. 1. 1. 6	♀	20±	14·4	4·6	8·6	10·0	—	15·8	8·0	8·8	„ not worn.
Muchamiel, Alicante . . . . .	{ 1234* Madrid}	♀ juv.	18·2	12·8	4·6	7·2	9·2	5·6	14·0	7·2	8·2	Basilar suture open.
<b>E. sodalis.</b>												
Roumania: Bustenari . . . . .	4. 4. 6. 1†	♂	18·0	13·2	4·6	6·6	9·4	6·2	14·2	7·2	8·0	Teeth not worn.
Switzerland: St. Gothard, Uri . . . . .	37295		18±	12·8	4·0	7·0	9·2	—	14·4	7·2	8·2	„ moderately worn.

\* Type of *boscai* Cabrera.

† Type.

*Diagnosis.*—Similar to *Eptesicus serotinus* but smaller, condylo-basal length of skull about 18 mm. instead of 19 to 21.6 mm.

*Measurements.*—Type (young-adult male): head and body, 63; tail, 42; tibia, 18.6; foot, 9.8; forearm, 45.4; third finger, 79.0; fifth finger, 58.0; ear (fresh), 18. Adult from St. Gothard, Switzerland. Tibia, 19, forearm, 48. For cranial measurements see Table, p. 233.

*Specimens examined.*—Two, from the following localities:—  
SWITZERLAND: St. Gothard, 1 (U.S.N.M.).  
ROUMANIA: Bustenari, Prahova, 1 (type).

*Remarks.*—The two specimens on which this species is based indicate the existence of an animal bearing much the same relationship to *Eptesicus serotinus* as *Nyctalus noctula* to *N. maximus*.

♂. Bustenari, Prahova, 840 m. Lord Lilford (p). 4. 4. 6. 1.  
Roumania. (W. Dodson.) (Type of species.)

#### EPTESICUS NILSSONII Keyserling and Blasius.

1836. *Vespertilio kuhlii* Nilsson, Illum. Fig. Skand. Fauna, pt. 17, pl. 34 upper figure. Not of Kuhl, 1819.  
1838. *Vespertilio borealis* Nilsson, Illum. Fig. Skand. Fauna, pt. 19, pl. 34 (renumbered 36) upper figure. Not of P. L. S. Müller, 1776 (Scandinavia).  
1839. *V[espertilio] nilssonii* Keyserling and Blasius, Wiegmann's Archiv für Naturgesch., 1839, p. 315 (Mountains of Scandinavia. Based on the *V. kuhlii* of Nilsson, 1836).  
1857. *Vesperugo nilssonii* Blasius, Säugethiere Deutschlands, p. 70.  
1858. *Amblyotus atratus* Kolenati, Sitzungsber. kais. Akad. Wissensch. Wien, Math.-Naturwissensch. Classe, XXIX, p. 252 (Altvater, Austrian Silesia, alt. 2400-4600 ft.).  
1878. *Vesperugo borealis* Dobson, Catal. Chiropt. Brit. Mus., p. 203.  
1894. *Vesperugo nilsoni* (sic) Rhoads, Reprint Ord's N. Amer. Zoology, Append., p. 3.  
1907. *Eptesicus nilsoni* Miller, Families and Genera of Bats, p. 209, June 29, 1907.  
1910. *Eptesicus nilsoni* Trouessart, Faune Mamm. d'Europe, p. 23.

*Type locality.*—Sweden.

*Geographical distribution.*—Continental Europe, from northern Norway to the Alps.

*Diagnosis.*—Size medium (forearm less than 40 mm., condylo-basal length of skull less than 16 mm.); colour of upper parts a rich dark brown, the hairs of back with noticeably contrasted light tips; underparts light yellowish brown; a well defined line of demarcation along sides of neck.

*External form.*—In general the external form agrees with that of *Eptesicus serotinus*, due allowance being made for the less robust stature of the smaller animal. Ear relatively longer,