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Lithotragus, Heude, 1898. Type by selection *maritimus*, Heude.

Nemotragus, Heude, 1898. Type by selection *argyrochætes*, Heude.

Allowing *Capricornulus* to stand, at all events provisionally, the above-mentioned genera may be reduced to the following three:—

1. *Capricornis*, Ogilby (= *Lithotragus*, Heude + *Nemotragus*, Heude + *Austritragus*, Heude).
2. *Capricornulus*, Heude.
3. *Næmorhedus*, H. Smith (= *Kemas*, Ogilby + *Urotragus*, Gray).

NOTE.—When revising the names of the Serows and Gorals I came across a hitherto unnoticed synonym of the Nilgiri wild goat (*Hemitragus hylocrius*). The reference is as follows:—“*Capra Neilgherri*, H. A. Leveson, Sport in many Lands, p. 238, pl. iv. fig., ? 1876.” My copy of this volume bears no date; but since it belonged apparently to the first edition, and contains a memoir of the author (“The Old Shekarry”), who died in 1875, the date of the name in question may be placed as probably not earlier than 1876.

XXX.—On Muscardinidæ from the Iberian Peninsula.
By ANGEL CABRERA.

SPANISH and Portuguese dormice are, for the most part, badly worked, no two authors agreeing as to the number and geographical distribution of species. Of *Eliomys* especially several apparently different forms have been described, partly by myself, the validity of which requires to be discussed. Since the publication of my paper on Spanish *Eliomys* * my opinion on this subject has been somewhat modified, as a result of the examination of much new material, including a fine series mainly collected by Mr. Gerrit S. Miller, to whose kindness I owe the opportunity of examining it.

In the present paper I give a summary of my conclusions on the whole family, as represented in the Iberian Peninsula.

* Bol. Real Soc. Españ. de Hist. Nat. 1904, p. 180.

ELIOMYS.

Peninsular representatives of this genus were universally known as *Eliomys quercinus* (or its synonymous "*nitela*") till 1890, when Reuvens named a specimen from Lisbon *E. nitela*, var. *lusitanica* *. Seven years later Dr. Graells described some Andalusian dormice as *E. nitela*, var. *amori* †; in 1899 a skull from N.W. Spain was regarded by Mr Barrett-Hamilton ‡ as belonging to *E. mumbyanus*, Pomel. Two other Spanish forms have been described by myself, *E. hortualis* in 1904 and *E. hamiltoni* as recently as last October§. All these names must be commented on separately.

E. nitela, var. *lusitanica*, Reuvens.—Type locality: Lisbon, Portugal. The type, in the Munich Museum, is briefly described by Reuvens as a "dunkel rostfarbiges Exemplar," and a co-type in the British Museum is, Mr. Miller informs me, quite similar to specimens of *Eliomys* from Seville in the same collection. The name, therefore, is available for a large dark red form living in southern parts of Spain and Portugal, and specifically distinct from *quercinus* not only on account of its colour, but by the form and size of the skull and by the peculiar colour-pattern of the tail, the underside of which is usually black or blackish in its middle third. This species has been described in detail by Oldfield Thomas || and myself under the name "*Eliomys amori*, Graells," but on Mr. Miller's suggestion it must be called *E. lusitanicus*.

Myoxus nitela, var. *amori*, Graells.—Type locality: Cordoba, Andalusia. In the old-fashioned original description, based on three specimens, this form is said to be bright red on the back, smaller than *quercinus*, and with the under surface of the tail entirely white. The bad figure that illustrates it was probably drawn from a brightly coloured mounted specimen of *E. quercinus* from France, in the Madrid Museum of Natural Sciences. In the red colour of the body, the description agrees equally with *E. lusitanicus* and with old

* Reuvens, 'Die Myoxidæ oder Schlaefer,' 1890, p. 28, footnote.

† Graells, Mem. Ac. Cienc. Madrid, xvii. (1897) p. 481, pl. xvii.

‡ Ann. & Mag. Nat. Hist. (7) iii. 1899, p. 227.

§ Bol. Soc. Españ. Hist. Nat. 1907, p. 226. The number of the 'Boletín' in which *E. hamiltoni* is described is dated June-July, but it was really published towards the end of October. Some Insectivores referred to in the same paper were previously described in the September number of the present Magazine.

|| P. Z. S. 1901, i. p. 41, footnote.

alcoholic specimens of *quercinus*; while as regards size, "smaller" or "larger," without detailed measurements nor indication of the age of specimens, are words of little scientific value. As for the absence of black on the ventral surface of the tail, this is characteristic of *E. quercinus*, but there are specimens of *lusitanicus* that also lack the black central portion; the co-type of this species in the British Museum, Mr. Miller writes me, "is just one of these unusual specimens without black on underside of tail"; and I have seen several dormice from different Andalusian localities, evidently of the large red form, with the tail entirely white below.

Graells's description and figure being not sufficiently accurate for purposes of identification, I asked Professor Coscollano, of Cordoba Institute, for information, and from him I learn that the Cordoban *Eliomys* is the same animal as that from Seville. A specimen in the Institute collection has the upper parts of the body brownish red and the underside of the tail white, with a blackish centre. Moreover, Graells said the types of *amori* were in his possession, and the only *Eliomys* in the Graells collection, now in the Madrid Museum, is a specimen of *E. lusitanicus*, without black on the ventral side of tail. It bears no indication of locality or collector, but I think it may be regarded as one of the co-types. Mr. Oldfield Thomas was therefore correct in applying the name *amori* to the Andalusian form when its identity with *E. lusitanicus* was not yet suspected. It is noteworthy that the two names given to this animal were based on specimens with the tail unusually coloured.

Barrett-Hamilton's "*Eliomys mumbyanus*, Pomel."—Based on a skull from Cabañas, Coruña province, N.W. Spain, in the British Museum. The skull of true *mumbyanus* being quite similar in form to that of *quercinus*, the only reason that led Barrett-Hamilton to regard this specimen as of the Pomel form was undoubtedly its small size; but, as he compared *mumbyanus* not with true *quercinus*, but with specimens from Seville (*E. lusitanicus*), that reason has very little force. In my opinion, the Cabañas skull is one of *E. quercinus*, perhaps not quite adult.

E. mumbyanus from North Africa seems to me merely a diminutive race of *E. quercinus*. Specimens from Mogador are identical in colour and skull-features with *quercinus* from the French Pyrenees, but rather smaller.

Eliomys hortualis, Cabrera *.—Type locality: Valencia,

* *L. c.* 1904, p. 183.

E. Spain. Based on three specimens with the upper parts, especially the black markings of head and tail, strongly suffused with red, and the skull somewhat different from that of *E. quercinus*, as figured by Reuvens *. In *E. hortualis* the hind part of the frontals is nearly square, whereas in Reuvens's figure it is triangular. The redness of the black markings proving to result from long immersion in alcohol, the red suffusion on the back and the skull-features only remain as valuable characters.

Now, in the series before me, there are two specimens from Valencia and several others from the Spanish provinces of Castellón, Huesca, and Burgos, and there are also two from Ariège in South France. All of them evidently belong to a single species, and the same as that of Belgium, Germany, and Switzerland; and from comparison with them it is clearly seen to be impossible to separate my *E. hortualis* from *E. quercinus* even as a local race. The reddish tinge of the back, conspicuous in one of the Valencian specimens in the series, is seen also in a male from the Huesca Pyrenees (exact locality: Panticosa, 1558 m. altitude), and in a very adult female from l'Hospitalet, Ariège, the slight redness of the hair probably being a mark of old age. As to the skull-peculiarities, all the series, and, as a matter of fact, all the specimens of *E. quercinus*, exhibit the nearly square frontals. If correctly depicted, the skull figured by Reuvens, which led me to describe the Valencian dormouse as a new species, must be either from a very young or from an abnormal specimen.

E. hamiltoni, Cabrera.—Type locality: El Pardo, near Madrid. Under the supposition that the skull of *E. quercinus* was different from that of *E. hortualis* and *mumbyanus*, this form was separated on account of two characters exhibited by a number of specimens from El Pardo: the white parts, especially on the head, stained with sulphur-yellow, and the skull similar to that of *hortualis* in size and shape, but with straight, not convex, zygomatic arches. Now, in Mr. Miller's series I find straight, and even concave, as well as convex zygomata; and as to the hue of the white parts, a yellowish suffusion exists in some specimens from Ariège, Huesca, and Burgos, while it is not seen on a specimen from Madrid Moncloa Park in my private collection. *E. hamiltoni* is therefore indistinguishable from *quercinus*, the yellowness of the white hairs probably being an effect of prevailing

* Reuvens, *l. c.* 1890, pl. i. fig. 2.

food, as is the case in certain specimens of *Glis* recorded by Ghidini *. In El Pardo dormice feed chiefly on acorns.

To sum up the foregoing conclusions: *Eliomys* is represented in the Peninsula by two different species—a northern and central one, *E. quercinus*, reaching on the south as far as the Guadiana River, Central Portugal, and the province of Murcia; and a southern one, *E. lusitanicus*, inhabiting Andalusia and the southern part of Portugal. Lisbon, Don Benito, and Daimiel are the most northern localities in which *E. lusitanicus* has been collected.

Thomas's *E. gymnesicus* need not be commented on here, as it is a Balearic form only, never found on the mainland.

GLIS.

Glis glis is recorded from N.W. Spain by Seoane †, from Andalusia by Machado ‡ and Martinez Reguera §, and from Madrid by Cazorro ||. The last proves to be erroneous, as the grey dormouse does not inhabit the province of Madrid, the specimen in the Madrid Museum that Cazorro alludes to being a young *Eliomys quercinus* with the grey juvenile coat. Graells describes *Glis* as "more common in the eastern and southern than in the central and northern parts of the Peninsula"; he, however, bases this conclusion not on his own experience, but on the statements of Machado and Reguera ¶. Now, when I think of Reguera's admitting the existence of ass-deer hybrids, and of Machado's including such a species as *Myoxus frugivorus* among the Andalusian mammals, I cannot place too much confidence in the assertions of these authors. Both from my own experience and from information obtained from collectors and country people, I am convinced that *Glis* has never been seen either in Andalusia nor in Valencia; the Valencian names ("rata del camp" and "rata de plumall") quoted for it by Graells really belong to *Eliomys quercinus*. The genus seems to be also unrepresented in Portugal, as Seabra does not include it in his catalogue of mammals from that country **.

* Bollett. Soc. Ticin. Science Nat. ii. 1905, p. 53.

† V. Lopez Seoane, 'Fauna Mastol. de Galicia,' 1861-63, p. 265.

‡ Machado y Nuñez, 'Catal. Mamif. de Andalusia,' 1869, p. 27.

§ L. Martinez y Reguera, 'Fauna de Sierra-Morena: Mamíferos del término de Montoro,' 1881, p. 161.

|| Manuel Cazorro, "Fauna Matritense" (Actas Soc. Esp. Hist. Nat. 1894).

¶ Graells, Mem. Ac. Madrid, 1897, p. 479.

** Jorn. Scienc. Lisboa, (2) vi. 1900, p. 90.

With regard to the north of the Peninsula, *Glis* evidently occurs there. Seoane records a specimen actually obtained in the Caabeiro woods, near Ferrol; two specimens from Navarre exist in the Museum of Madrid, and another, from San Esteban de Palantordera, Barcelona province, is preserved in the Martorell Museum of Barcelona.

On comparison with true *G. glis* from Germany in the same collection, the Navarre specimens in the Madrid Museum appear to represent a well-marked local form, which I describe as follows:—

Glis glis pyrenaicus, subsp. n.

Characters. Similar to the typical form in all essential respects, but readily distinguishable by its larger skull and the strong buffy tinge of its back.

Colour. Upperparts buffy grey, the hairs being iron-grey with yellowish-buff ends. In the middle of the back there are numerous black hairs, showing a bright metallic gloss. Under surface creamy white, separated from the upper colour by a narrow ill-defined zone of pure yellowish buff extending from the cheek to the hip. Tail glossy brownish grey, with the usual whitish line along its underside. Ears and orbital rings brown. Hands and feet white; a broad brown metatarsal patch as usual.

Skull. Like that of typical *G. glis*, but larger, approaching *G. italicus* in this respect.

Measurements (type in flesh). Head and body 169 mm.; tail-vertebræ 137; hind foot (s. u.) 28; ear 16.

Skull: greatest length 41.5; basilar length 33; zygomatic breadth 24; breadth of brain-case 18; interorbital breadth 5.5; length of nasals 14; palatilar length 16; diastema 10; upper tooth-row 7.5.

Hab. Navarre Pyrenees, North Spain. The specimens recorded from Ferrol and Barcelona probably belong to the same species.

Type. Adult female from the neighbourhood of Allo, province of Navarre. No. 1223, Museum of Natural Science of Madrid.

Remarks. This form seems to be the most western representative of the grey dormouse, and opposite in size to the small eastern *G. g. spoliatus*. Whether or not it ranges southwards along the Burgos Mountains and Serrania de Cuenca, as other Pyrenean mammals do, I am not able to say at present.

MUSCARDINUS.

Although recorded from Andalucia by Machado and Reguera, and included in an anonymous list of rodents from N.W. Spain *, this genus has, in fact, not yet been found in the Peninsula. Graells rightly doubted its existence in Spain, while Seabra does not record it in Portugal. All the specimens I have seen in Spanish collections are from France, Germany, or Italy.

XXXI.—*Eighteen new European Voles.*

By GERRIT S. MILLER.

AMONG the European voles in the collection of the British Museum are specimens of the following new forms.

Evotomys cesarius, sp. n.

Type.—Adult male (skin and skull). B.M. no. 3. 2. 11. 2. Collected at St. Helier, Jersey, Channel Islands, January 2, 1896, by Capt. G. E. H. Barrett-Hamilton. Presented by the collector.

Characters.—A member of the *nageri* group, agreeing with *E. skomerensis* in the presence of a well-defined third re-entrant angle on inner side of third upper molar, but differing from the Skomer vole in the shorter, more evenly cuneate nasals (in this respect resembling *E. nageri*, *E. vasconiae*, and *E. norvegicus*), broader rostrum, shorter tail (45 to 49 mm. instead of 53 to 59 mm.), and much darker colour (upperparts a rich, dark reddish brown approaching the cinnamon-rufous of Ridgway, but not so vivid, the sides lighter and suffused with dull buff, though not sufficiently to produce any marked contrast with back; underparts a clear rich buff, between the buff and cream-buff of Ridgway; tail sharply and conspicuously bicolor, blackish above, concolor with belly below; feet a dusky grey above, rather dark hair-brown on furred portion of sole).

Measurements.—Type. Head and body 96 mm. (97) †; tail 49 (45); hind foot 18 (19); ear from meatus 11 (10). Skull:

* The list, attributed to Señor J. Alonso Lopez by Seoane, is found in a book entitled 'Consideraciones generales sobre varios puntos á favor de la libertad y fomento de los pueblos,' 1820, vol. ii. p. 115.

† Measurements in parentheses are those of a second specimen from the type locality (♂ ad., B.M. no. 3. 2. 11. 1).