

Mr. F. Day, F.Z.S., exhibited a specimen of the Spanish Loach, *Cobitis taenia*, captured the previous week at Hungerford.

Mr. Day also exhibited two specimens of hybrid Salmonidæ from Howietoun, both of which had been removed from the ponds on Dec. 1st, 1887. The first was of the *leopard breed*, 13·2 inches long, and one of the progeny from 8000 eggs of an American Char (*Salmo fontinalis*), taken on November 15th, 1882, milted from a Loch-Leven Trout. Although 4 years and 10 months of age, this was the first season that they had been observed to be fertile; the specimen was a female full of nearly ripe eggs. The second fish was one of the *zebra breed*, 18 inches long, 3 lb. in weight, and one of those raised from 3000 ova of the Loch-Leven Trout taken on November 29th, 1883, and milted from an American Char. This fish, 3 years and 10 months old, was also a fertile female. The external colours in these two forms were very similar, and coloured drawings of the hues exhibited by the fish when first captured were likewise shown. These fishes were covered with reticulations or vermiculated lines on a grey or silvery ground, and differed in appearance from either of their parents. But the most remarkable feature was the dentition of the vomer, for in the Char teeth are only found along the hind edge of the head of that bone, not along its shaft, where they are, however, present in Trout. In these hybrids the hind edge of the head of the vomer was toothed as in a Char, and also for a short distance along the shaft of that bone, where three or four teeth were to be seen. Thus a fertile form could be produced, differing in external colours from Trout or Char, and having neither the dentition of *S. salvelinus* nor of true *S. fario*, but a compound between the two. If such a form had been captured wild, and it is now so found in Cardiganshire, doubtless it would have been referred to a new species.

The following papers were read :—

1. On a Collection of Mammals obtained by Emin Pasha in Equatorial Africa, and presented by him to the Natural History Museum. By OLDFIELD THOMAS.

[Received December 14, 1887.]

(Plates I. & II.)

The Mammals recently received by the Natural History Museum from Dr. Emin Pasha number 115, belonging to 39 species—a collection which is of the utmost value as a contribution to our knowledge of the Central-African fauna, and one which reflects the highest credit on the energy and scientific spirit of the man by whom it was formed. When the cares and anxieties of a person in the position of responsible governor of a large and turbulent African province are considered, it seems wonderful that Emin should have been able to make any collections at all, and still more should have

made such a collection as the present, nearly every specimen of which has been carefully labelled in his own handwriting, with the date, sex, and exact locality—particulars which add enormously to its scientific value.

The great mass of the collection was not obtained at Dr. Emin's headquarters, on the Upper Nile, but in a district called Monbuttu (lat. $2^{\circ} 30' N.$, long. $27^{\circ} 50' E.$), just within the Congo basin¹, and separated by the Congo-Nile watershed from the Wadelai region. There, practically, all the interesting forms were collected; and, considering their number, and especially their strongly marked geographical character, the general affinities of the mammal-fauna of this district may now be looked upon as settled; their affinities are discussed at the end of the present paper.

Of the more recent papers on the Central-African mammal-fauna the three following are the most important:—

1. Pagenstecher, Dr., "Die von Dr. G. A. Fischer, auf der im Auftrage der geographischen Gesellschaft in Hamburg unternommenen Reise in das Massai-Land gesammelten Säugethiere"².

2. Noack, H., "Beiträge zur Kenntniss der Säugethier-Fauna von Ost- und Central-Afrika"³.

3. Leche, W., "Ueber einige von Emin Pascha gesammelte afrikanische Säugethiere"⁴.

The first of these contains notes on 31 species of mammals, but the region explored by Dr. Fischer has so different a fauna from Monbuttu, that only some three or four species, and those very widely spread, are common to both collections⁵.

Dr. Noack's paper also, based on the mammals collected by Dr. Böhm in the Marungu country, on the south-west coast of Lake Tanganyika, refers to a fauna very different to that of Monbuttu, although several species, and those some of the most interesting (e. g. *Sciurus boehmi* and *Mus kaiseri*), are found in both districts.

Finally, Dr. Leche's paper is founded, like the present one, upon specimens collected by Emin Pasha. Fifteen species are enumerated, but these come chiefly from the Upper Nile district, only three of them occurring also in the Monbuttu collection. The localities given are so widely scattered that the paper, although important for the histories of the individual species, gives but little definite faunistic information.

There is also a list of 71 species observed in Niam-niam-land, given at the end of Dr. Schweinfurth's 'Im Herzen von Afrika,' but

¹ On the assumption that the Uelle is really an affluent of the Congo, and does not run, as has been suggested, north-westwards to Lake Chad or into the Niger basin.

² JB. Mus. Hamburg, 1884, pp. 32-46 (1885).

³ Zool. Jahrb. ii. pp. 193-302, pls. viii.-x. (1887).

⁴ Zool. Jahrb. iii. pp. 115-126, pls. iii. and iv. (1887).

⁵ Dr. Pagenstecher (pp. 40 and 41) places *Gazella thomsoni* and *Alcelaphus cokei* as synonyms of *G. granti* and *A. lichtensteini* respectively, observing that they are "figured but not described" in Thomson's 'Masai-Land,' 1885. He seems, therefore, to be unaware that these species were originally described by Dr. Günther (Ann. & Mag. N. H. [5] xiv. p. 426, 1884).

the list is a merely nominal one, except that the different native names of the animals are all carefully recorded. Two of Dr. Emin's West-African animals, the Chimpanzee and *Galago demidoffi*, occur in the list.

The 39 species in the present collection consist of 3 Primates, 8 Carnivora, 1 Insectivore, 3 Bats, 1 Ungulate, 1 Edentate, and no less than 22 Rodents, Dr. Emin having wisely paid most attention to the latter group, in which our knowledge of the smaller forms is still so exceedingly incomplete.

1. *ANTHROPOPITHECUS TROGLODYTES* (Gm.).

a. Skeleton, ♂ (incomplete). Bellima, Monbuttu.

b, c. Skulls, old ♂ and imm. Monbuttu.

Without further material, and a much fuller examination than is now possible of the whole genus, it is impossible to determine to which of the races of Chimpanzee these specimens should be assigned, and I therefore place them provisionally under the name of the common West-African species. Chimpanzees from this region have received the names of *Troglodytes schweinfurthi*¹, and *T. niger*, var. *marungensis*², but the evidence in favour of this distinction seems to be as yet exceedingly meagre. Some notes on an acrocephalous skull of a Chimpanzee, also obtained by Dr. Emin, were contributed to this Society by Prof. Flower in 1882 (P.Z.S. 1882, p. 634).

2. *COLOBUS GUEREZA*, Rüpp.

a. Immature. On the Nambiri³, Sandeh (= Niam-niam) land, 20/7/83.

This species is also mentioned by Schweinfurth as occurring in Niam-niam.

3. *GALAGO DEMIDOFFI*, Fisch.

a. ♂. Stat. Gadda, Monbuttu, 18/3/84.

b. ♂. Stat. Gadda, Monbuttu, 3/5/84.

"Iride flavo-umbrina. Monbuttu name 'Nensi.'"—E.⁴

This species, like the last, was observed by Schweinfurth in Niam-niam, but has otherwise only been recorded from West Africa.

4. *FELIS SERVALINA*, Ogilb.

a. Immature.

As this specimen is immature, having its milk-teeth still in place, it does not afford any additional information as to the vexed question of the relation of *F. servalina* to the true *F. serval*, except

¹ Giglioli, Ann. Mus. Genov. iii. p. 56 *et seqq.* (1872). See also Peters, SB. Nat. Freunde, 1869, p. 25; Issel, Ann. Mus. Genov. i. p. 56 *et seqq.* (1870); Hartmann, Arch. Anat. Phys. 1872, p. 474 *et seqq.*; and Schweinfurth, 'Im Herzen von Afrika,' i. p. 558 (1874).

² Noack, *l. c.* p. 291 (1887).

³ The exact position of this locality I am quite unable to find in any of the maps at my disposal.

⁴ The particulars marked "E." are those noted on the labels by Emin Pasha.

in so far as it shows the constancy at different ages of the peculiar coloration to which the name of *F. servalina* has been applied. The specimen has lost its label, but is no doubt one of the Monbuttu series.

5. *FELIS CALIGATA*, Temm.

a. ♂. Tingasi, Monbuttu, 16/10/83.

b. ♂. Stat. Gadda, 14/5/84.

c. Juv.

"Iride fulva. Lives in the woods. Monbuttu name 'Nango' or 'Kao.'"—E.

[*FELIS CALIGATA DOMESTICATA*.

a. Lado. 12/83.

"Bastard between *F. caligata* ♂ and *F. domestica* ♀."—E.]

6. *GENETTA TIGRINA*, Schr.

a, b. ♀ and juv. Lado, 5/12/83.

"Caught with three young in its nest. A severe biter, and a great enemy to poultry. Ejected a fetid fluid on capture."—E.

I only use the above name provisionally, until the species of Genets are properly worked out, which will probably result in the union of nearly all the so-called different species.

7. *POIANA RICHARDSONI*, Thomps.

a. Juv.

An immature individual of this exceedingly rare and interesting species quite agrees with the typical specimen in the Museum collection. It is unfortunate that its label has been torn off, so that its exact locality is unknown; but as the species is a strictly West-African one, having only hitherto been recorded from Fernando Po and Sierra Leone, it was, no doubt, obtained in the Monbuttu district, where the whole of the purely West-African species were collected.

8. *CROSSARCHUS ZEBRA*, Rüpp.¹

a. ♂. Tingasi, 1/7/83.

b. ♂. Stat. Gadda, 18/1/84.

c. ♂. Stat. Gadda, 20/1/84.

"Iride fusco-flava. 'Ndoto' (Monbuttu)."—E.

Notes on the habits in Marungu of the closely allied *C. fasciatus*, Desm., have been recorded by Dr. Noack², from the note-books left by Dr. Böhm.

Of the species labelled as occurring in Monbuttu, this is absolutely the only one of a distinctly Abyssinian character. It is, however, a

¹ In connection with this species, I may take the opportunity of correcting an unfortunate misprint in my paper on the African Mongoose (P. Z. S. 1882, p. 87), where, in the synopsis of species (lines 22 and 24), the lengths of the fourth premolar in *C. zebra* and *C. fasciatus* have been transposed, as an examination of the detailed descriptions would show. It is *C. fasciatus* that has its premolar "more than 8 millim." and *C. zebra* "less than 7 millim."

² T. c. p. 253.

most strongly marked example, the present being by far the most distant point from Abyssinia from which it has been recorded.

Bearing in mind the semi-domesticated state of many of the Mongoose, and the otherwise strictly West-African character of the Monbuttu fauna, one is almost tempted to believe that this species has been artificially transported across the watershed from the Lado district, where Dr. Emin has himself previously obtained it.

9. *CROSSARCHUS OBSCURUS*, F. Cuv. ?

a. ♀ imm.

“Lives in pairs; very harmful to poultry.”—E.

An extraordinary short-haired specimen, of the determination of which I am somewhat doubtful. It is wholly without the long fur on the body, none of the hairs exceeding about 14 or 15 millim. in length, and the general tone of colour is a peculiar whitish grey, exactly similar to that of the underfur of *C. obscurus*. It appears to me probable that it has been clipped of the longer hairs by the natives, perhaps for purposes of deception, as the majority of the hairs do not taper naturally to a point, but end quite abruptly. Its skull is quite similar to that of *C. obscurus*.

10. *LYCAON PICTUS*, Temm.

a. Skin and skull, young.

This specimen, unfortunately without a label, is probably part of the Wadelai collection, as the species is known from Abyssinia and South Africa, but not from Western Africa. The sizes of the milk-premolars in this specimen are as follows:—m. pm.², length 6·5 millim.; m. pm.³, length 11·4; m. pm.⁴, length 8·5; breadth 9·5; m. pm.², length 6·1; m. pm.³, 8·4; m. pm.⁴, 13·3.

11. *ICTIDONYX ZORILLA*, L.

a. ♂. Redjaf, near Lado, 1/84.

12. *CROCIDURA DORIANA*, Dobs.

a-c. Wadelai, 10/85 and 4/86.

I am indebted to Dr. Dobson for the determination of this Shrew. The type came from Shoa, and the species is therefore, so far as is yet known, distinctly Abyssinian.

13. *EPOMOPHORUS (HYPSIGNATHUS) MONSTROSUS*, Allen.

a-b. ♂ & ♀. Tingasi, 29/10/83.

“Iride fusca. ‘Balupa’ of natives. Lives upon fruit, and is itself eaten by the natives. Found in flocks of from 50 to 60.”—E. Herr Bohndorff also obtained this species in Nian-niam-land. Previously only known from West Africa.

14. *EPOMOPHORUS FRANQUETI*, Toms.

a. Tingasi, 5/82.

This is another wholly West-African species.

15. *MEGADERMA FRONS*, Geoffr.

a. ♀. Wadelai, 26/6/86.

16. *ANOMALURUS PUSILLUS*, sp. n.¹ (Plate I.)

a. ♀. Bellima, 21/6/83. *Type.*

b. ♂. Tingasi, 5/82.

Size very much smaller than in any of the other species. General colour above uniform dark grizzled grey, the hairs throughout dark slaty grey for the greater part of their length, this colour gradually darkening to black just below a terminal band of pale grey or olivaceous. Head and limbs like back; sides of parachutes rather darker. Underside pale yellowish white, without a tinge of rufous, the hairs on the belly pale slate basally, and dull yellowish white terminally; outer margins of parachute below covered with coarse dark brown hairs. Tail uniform pale brown, cylindrical, rather bushy, the hairs at its end attaining a length of nearly two inches; scales about 15 in number.

Skull, as compared to that of *A. beecrofti*, distinguished by its very much smaller size, short muzzle, proportionately longer palatine foramina, longer orbital and shorter temporal fossæ, and larger rounder bullæ.

Teeth as usual. Incisors orange above, pale yellow below. Molars readily distinguished by their small size.

Dimensions of a female in skin:—Head and body (to anus) (c.) 280 millim.; (to back of interfemoral membrane), 300; tail 134; hind foot (without claws) 40²; ear (dried and shrunk) (c.) 20.

Skull—basal length 41 millim.; greatest breadth 29; interorbital breadth 12·3; height of infraorbital foramen 5·2; palate, length 21·7; diastema 10·1; length of palatal foramen 5·0; length of upper molar series 9·4.

This interesting little animal is most nearly allied to the West-African *A. beecrofti*, Fraser, but differs from that species in its duller and less yellow upperside, in the entire absence of rufous on its neck and belly³, and, as from all the other described species, in its diminutive size.

17. *SCIURUS STANGERI*, Waterh.

a. Tingasi, 2/9/83.

“Common in Monbuttu, where it is called ‘Mbonga.’”—E.

18. *SCIURUS RUFOBRACHIATUS*, Waterh.

a. ♂. Bellima, 13/7/83.

b. ♂. Bongereh, 21/7/83.

c, d. Tingasi, 5/82 and 7/83.

“Iride fusca. ‘Bonga.’”—E.

¹ Preliminary diagnosis published, Ann. Mag. N. H. [5] xx. p. 440, Dec. 1, 1887.

² In specimen *b*, an adult male, rather smaller than *a*.

³ Young specimens of *A. beecrofti* are also without the bright rufous on the belly characteristic of the species, but the size of their feet and teeth would always distinguish such specimens from *A. pusillus*.

These specimens vary very considerably in the colour of the belly-hairs, which in some of them, notably in *a*, are pure white, while in others they are of the usual dull grey and white found in Western Coast specimens.

19. *SCIURUS ANNULATUS*, Desm.

- a.* ♀. Lado, 16/2/84.
- b.* ♂. Tobbo, 18/5/83.
- c.* ♀. Tobbo, 18/5/83.

20. *SCIURUS PYRRHOPUS*, F. Cuv.

- a.* ♂. Tingasi, 16/9/83.
- b.* ♀. Tingasi, 10/10/83.

"Iride fusca. 'Kejo.'"—E.

Specimen *a* has the hairs of the belly, usually pure white, richly washed with red.

S. stangeri, *S. rufobrachiatus*, and the present species are all strictly West-African forms, this being by far their most easterly recorded locality.

21. *SCIURUS BOEHMI*, Reichen.

- a, b.* ♂ & ♀. Tangasi, 7 and 9/83.
- c, d.* ♂ & ♀. Stat. Gadda, 2 and 3/84.
- e.* ♂. Nendja (Monbuttu), 9/7/83.
- f.* ♂.

"'Nangeri.' Common from 4° N. lat. southwards. As yet only taken to the west of the Bahr el Djebel."—E.

These beautiful little Squirrels quite agree with the description given by Dr. Reichenow (Zool. Anzeiger, 1886, p. 315) of some specimens obtained by Dr. R. Böhm in the Marungu country, at the south-west corner of Lake Tanganyika. Whether the species is really distinct from *S. congicus*, Kuhl, is a question which will have to be decided later, when further specimens are available from other localities. It appears to me to be by no means improbable that not only will *S. boehmi* be found to grade into *S. congicus*, but that the latter also will equally pass into *S. poensis*, Smith, of which I have seen specimens with just a faint indication of a whitish back-stripe. This stripe then becomes bright and prominent in *S. congicus*, with a darker band below and external to it; while further, in *S. boehmi* this latter dark band is quite black, and is supplemented internally by a second even more prominent black stripe. These gradations from the normally wholly unstriped *S. poensis* to the brilliantly banded *S. boehmi* show how little these dorsal bands can be trusted for the division of the Squirrels into groups, or even for the discrimination of the species. No appreciable seasonal change is visible between the different specimens of the series.

The Squirrel from "Tamaja" referred to and figured by Leche¹ as *S. lemniscatus*, Le Conte, appears also to belong to this species, which, while having the same number of stripes as *S. lemniscatus*,

¹ *T. c.* p. 117, pl. iii.

is apparently, as already remarked, more nearly allied to *S. conigicus*. Prof. Leche's six specimens are stated to be all immature, a statement that perhaps only rests on their inferior size as compared with *S. lemniscatus*, *S. boehmi* being decidedly smaller than that species. Indeed the beautiful figure given by Prof. Leche represents, when increased to scale, an animal quite as large as the largest of our specimens of *S. boehmi*, all of which are undoubtedly fully adult.

Notes on the habits of this species have been made both by Dr. Böhm (Noack, *t. c.* p. 251) and Dr. Emin himself (Leche, *l. c.*).

22. XERUS ERYTHROPUS, Geoffr.

- a.* ♂. Tingasi, 16/10/83.
- b.* ♂. Stat. Gadda, 4/2/81.
- c.* Skeleton. Stat. Gadda.
- d.* Skull. Foda, Lake Albert Nyanza, 12/85.

"Iride fusca. Monbuttu name 'Koro.' Common everywhere."—E.

No difference that could be ascribed to season is observable between *a* and *b*, collected respectively in October and February.

23. GERBILLUS, sp. (allied to *G. leucogaster*, Peters).

- a.* ♀. Tingasi, 31/8/83.
- b.* ♀. Stat. Gadda, 24/1/84.

"Monbuttu names 'Kota' and 'Sinsi.'"—E.

24. GERBILLUS, sp.

- a, b.* Wadelai. 5/86.

In the state of confusion in which the species of Gerbilles are at present it is impossible to determine these specimens with certainty, but they are nevertheless of the utmost value as supplying material for a future revision of the group.

25. CRICETOMYS GAMBIANUS, Waterh.

- a, b.* ♂ & ♀. Bellima, Monbuttu, 16/7/83.
- c, d.* Tingasi, 8/83.
- e.* Skeleton ♀. Tingasi, 7/9/83.
- f-i.* ♂ & ♀. Stat. Gadda, 2/84.
- j.* Skeleton ♂. Stat. Gadda, 14/3/84.
- k.* Skull, ♂. Kubbi, Monbuttu, 7/83.
- l.* Skull, ♀. Foda, Lake Albert Nyanza, 12/85.

"Iride fusca. Native name 'Assumba.'"—E.

Specimens *a* and *b*, from Bellima, differ from the rest by their greyer colour, grey instead of pure white bellies, and the less sleek character of their fur, differences which, as shown by the fine series obtained, are neither seasonal nor sexual. Their skulls, however, do not present any valid specific distinction, and it is probable that we have here one of the definite but non-specific variations often known to be due to some difference in the nature of the locality—as, for example, a difference either in altitude, presence or absence of forest, or amount of rainfall.

26. *MALACOMYS LONGIPES*, M.-Edw.

a-d. ♂ & 3 ♀. Tingasi, 7 and 9/83.

(*a*) "Iride fusca. 'Nesanda.' In and by water."

(*b*) "In the forest."—E.

This most interesting form was only previously known from a single specimen from the Gaboon in the collection of the Paris Museum, the skull of which has unfortunately been destroyed. An examination of the skulls sent by Dr. Emin shows that *Malacomys* has perfectly smooth incisors, and the molars of a typical *Mus*, and is therefore only distinguished by its very different external proportions. As a species *M. longipes* is characterized by its rounded supraorbital edges, elongated muzzle, small teeth, and short palatine foramina, the latter and the teeth being each only 6 millim. in length, as compared to a basal length of 35.5, and a palate length of 22 millim.

27. *MUS (ISOMYS) BARBARUS*, L.

a. ♂. Stat. Gadda, 10/1/84.

b-g. Tingasi, 7 to 9/83.

h. ♂. Wadelai, 24/7/85.

"Iride fusca. Native name 'Nadje' or 'Nage Nadje.' Found along the edges of the forest."—E.

No remark to this very common and widely spread species would be needed were it not that the three authors whose papers have been above referred to have all expressed different views as to its nomenclature, and it is therefore advisable for me to explain my reasons for the name I myself use. Thus Dr. Pagenstecher, although only having two of the ordinary specimens for comparison, calls the Masai form "*Mus (Lemniscomys) barbarus*, var. *massaicus*"¹, a form, however, that I do not think distinct enough to merit a varietal name, especially as the Emin series contains individuals precisely agreeing both with ordinary West-African specimens and with those described by Dr. Pagenstecher.

Dr. Leche² puts all under "*Mus barbarus*" and expresses his opinion that the variety known as "*pulchellus*," Gray, is not really distinct—a view with which I most fully agree, although I prefer to recognize the subgenus "*Isomys*," with which at the same time I think "*Lemniscomys*" should be amalgamated, the two grading quite insensibly into each other.

Finally Dr. Noack³ uses Dr. Gray's obsolete name of "*Golunda pulchella*" for the species, being apparently unaware either of its position in the subgenus *Isomys*, or of the fact that the generic name *Golunda* belongs properly to a very different animal, for which in its turn⁴ he uses Peters's name of *Pelomys*, although the latter's identity with *Golunda* was shown by Mr. Blanford as long ago as 1876⁵.

¹ *T. c.* p. 45.

² *T. c.* p. 119.

³ *T. c.* p. 239.

⁴ *T. c.* p. 235.

⁵ *J. A. S. B.* xlv. part ii. p. 165.

28. *MUS (ISOMYS) ABYSSINICUS*, Rüpp.

a. ♀ juv. Lado, 16/2/84.

"House-mouse ; very common."—E.

29. *MUS GUEINZII*, Peters.

Dasymys gueinzii, Peters, MB. Ak. Berl. 1875, p. 12, pls. i. & ii.

a, b. ♂ & ♀. Stat. Gadda, 1/84.

"Monbuttu name 'Suhr.'"—E.

These two specimens agree in all essential characters with Dr. Peters's description, the type of which I have examined in Berlin. His specimen came from the interior of Natal, and this occurrence of the species in Monbuttu is therefore a most remarkable and interesting fact, quite unparalleled by any of the other small mammals of the Emin collection.

With regard to the genus "*Dasymys*" formed by Dr. Peters for this animal, and its alleged relationship to *Otomys*, I can only say that I am quite unable to see any reason why the species should not be included in the genus *Mus*, an opinion I first came to in Berlin when examining the type, and since confirmed by a direct comparison of Dr. Emin's specimens with *Otomys* and with many other species of the genus *Mus*.

30. *MUS KAISERI*, Noack.

a-c. ♀. Stat. Gadda, 1/84.

d. Skeleton. Stat. Gadda.

"Bomu" or "Sinsi."—E.

These specimens agree very fairly well with Dr. Noack's description of a new species obtained by Dr. Böhm in Marungu.

31. *MUS RUFINUS*, Temm.

a, b. ♀ & yg. Stat. Gadda, 1/84.

I am not very certain about the determination of these specimens, as Temminck's description is exceedingly vague, and the skull of the type is, unfortunately, in so dilapidated a condition that, as Dr. Jentink has been kind enough to inform me, no exact measurements can be taken upon it for comparison with those of Emin Pasha's specimen.

32. *MUS UNIVITTATUS*, Peters.

a. ♂. Tingasi, 24/7/83.

b. ♂. Tingasi, 9/10/83.

c. ♂. Stat. Gadda, 23/1/84.

"Iride fusca. Monbuttu name 'Tibo.' Lives in and by water, and swims with facility."—E.

This rare species has been previously only recorded from West Africa, the specimens that I have seen being from Dongila (Buchholz, Mus. Berl.), Gaboon (Aubry Le Conte, Mus. Paris and Brit.), and Cameroons (Johnston, Mus. Brit.). Dr. Emin's examples are more

deeply rufous on their flanks and rumps,] and have less strongly marked, in fact almost indistinguishable, dorsal stripes, but are obviously not specifically separable.

33. *MUS*, sp.¹

a-e. 5 specimens. Tingasi.

f, g. Stat. Gadda.

h. Wadelai.

"Monbuttu name 'Babili.'"—E.

These specimens all belong to a group of Rats varying considerably in size, length of fur, and size of ears, but all agreeing in their general proportions, and in the possession of a very large number of mammae placed in a continuous series down the sides of the abdomen, and varying in actual number from 16 to 24. To this group, whether containing several valid species or, as I am inclined to suspect, only a single variable and widely spread one, the following appear to belong:—*Mus coucha*, Sm., *M. silaceus*, Wagn., *M. microdon*, Peters, *M. macrolepis*, Sund., and probably several of the other earlier described species. In the existing state of confusion in regard to these species, I prefer to leave the present series of specimens without a definite name.

34. *MUS* (LEGGADA) *MINUTOIDES*, Sm.

a-e. 5 specimens. Wadelai.

f. Tingasi.

"Found in pairs in the gardens and plantations."—E.

I have seen specimens referable to this species from almost every part of the Ethiopian region, and among others the types of *Mus musculoides*, Temm., and *M. minimus*, Peters, both of which names must therefore give way to that of Smith. Specimen *f*, from Tingasi, is considerably larger than usual, but is not apparently specifically separable from the rest.

35. *LOPHUROMYS* *SIKAPUSI*, Temm.

a. ♂. Stat. Gadda, 25/1/84.

b. Skeleton.

This rare species is a purely West-African one, but the genus is

¹ I take this opportunity of clearing up the history of another species of *Mus*, which will, no doubt, be found to occur in Monbuttu, as Herr Bohndorff obtained it at N'doruma, in the Niam-niam country, namely *Mus alleni*, Waterh. (P. Z. S. 1837, p. 77), of which the type is a very young individual with its teeth still uncut. This type is, however, unquestionably specifically identical with the Niam-niam specimen, as also with two in spirit from Old Calabar (Dr. J. A. Smith), and one skin from Angola (Mr. Monteiro), in the Natural History Museum. There are also in the Berlin Museum several specimens of it obtained on the Gold Coast by Drs. Buchholz and Reichenow, and the characters of these specimens, and therefore of the adult *M. alleni*, have been pointed out by Dr. Peters (MB. Ak. Berl. 1876, p. 479) under the erroneous name of *M. erythroleucus*, Temm.

represented in Abyssinia by a second species described in the accompanying footnote¹. Dr. Emin's specimen agrees in every respect with typical West-African individuals, and shows no approach to the new Eastern form.

36. GEORYCHUS OCHRACEO-CINEREUS, Heugl.

a, b. ♂. Bellima, Monbuttu, 14/7/83.

The type specimen of this rare species was obtained by its describer in Bongo, only a few degrees north of the present locality, and is now in the Stuttgart Museum, where, by the kindness of Dr. Krauss, I have had an opportunity of examining it. In the collection worked out by Dr. Leche there were also several *Georychi*, divided by him into two species—a larger darker-coloured one, determined as *G. damarensis*, Og., and a smaller sandy one, considered to be *G. ochraceo-cinereus*. The first of these was so named on my authority, Dr. Leche having sent me one of the specimens to compare with Ogilby's type. At that time, however, not having at all investigated the subject, I did not know that there were two species found in this Central district, and assumed that the specimen sent was *G. damarensis*, to which I still think it is exceedingly closely allied. Now, however, Dr. Leche's descriptions and excellent figures show the distinction of the two forms, of which the names given by him must certainly be reversed, *G. ochraceo-cinereus* being the larger, and *G. damarensis* the smaller form, as I have been able clearly to make out by measurements taken on the two typical skulls as compared with those given by Dr. Leche. I can therefore only express my sincere regret to Dr. Leche at having led him wrong, and must plead the close relationship of the two forms as my

¹ *LOPHUROMYS FLAVO-PUNCTATUS*, sp. n.

Size and proportions as in *L. sikapusi*, but differing markedly from that species in the character and colour of its fur, which, instead of being long, sleek, unicolor, and all of one sort, is short, comparatively coarse, and finely freckled all over with orange or yellow, and has a considerable number of longer hairs intermingled with it. The individual hairs are brown for the greater part of their length, broadly tipped with orange or yellow, the former colour along the top of the head and back, the latter on the flanks. Belly dull yellowish white, not sharply defined. Hairs round the front of the base of ear prominently tipped with bright orange, those behind it pale yellow. Feet irregularly patched with white and dark chocolate-brown. Tail closely covered with short crisp hairs, brown above, white beneath.

Skull much as in *L. sikapusi*, but the zygomatic more widely expanded anteriorly, and the interorbital region narrower and flatter above. The interparietal also is shorter antero-posteriorly, and the nasals are narrower and more pointed behind.

Dimensions of the type, an adult specimen in skin:—Head and body 129 millim.; tail 51; hind foot 21; ear 10.

Skull—basal length 26 millim.; greatest breadth 16; nasals, length 12.6, greatest breadth 3; interorbital, breadth 5.6; interparietal, length 3, breadth 9.8; palatal foramen 6.6; length of molar series 5.

Hab. Shoa (Capt. W. C. Harris).

Two specimens of this species were received from the East-India Company's Museum in 1860, and were no doubt collected by Capt. Harris during his mission to Shoa in 1843.

excuse. The present specimens agree in every respect with Dr. Leche's figure and description of "*G. damarensis*," and also, except in being a little darker coloured, with the type of *G. ochraceo-cinereus*.

37. *ATHERURA AFRICANA*, Gray.

a-d. 2 ♂, ♀ and young. Monbuttu.

"Very common. Monbuttu name 'Kolia.' Is eaten by the natives."—E.

The peculiar fimbriation of the lower sides of the spines in this species, previously noticed by Waterhouse¹, is unusually well-marked in these specimens, the spines being as it were finely feathered on their edges and inferior² surfaces³. This animal is one of the most distinctly West-African forms in the whole collection, the genus *Atherura* being, so far as Africa is concerned, entirely confined to that district, and only reappearing again in the Malay part of the Oriental Region.

38. *DENDROHYRAX EMINI*, sp. n.⁴ (Plate II.)

a. Yg. sk. Tingasi, 6/7/83. *Type.*

"Iride fusca."—E.

Fur long, extraordinarily soft and fluffy. General colour pale yellowish white, wholly different from that of any other species of the group, and indeed scarcely to be matched as a general body colour in any other mammal; its tint all over the body something like that of the centre of the belly of *D. arboreus*. Hairs of upper side dull brown for three fourths of their length, their tips pale yellow, whiter on the head, deeper yellow on the rump. Hairs of underside and limbs similar, but the brown gradually decreasing in extent downwards, those of the chin, chest, and belly wholly pale yellow; cheeks, a ring round each eye, hands and feet, and hairs on ears white; hairs of the dorsal spot also white.

This most remarkable species is unfortunately only represented by a single young individual, in which the milk-dentition is still in position. The only adult dimension that I am able to give is, therefore, that of the first true molar (7·2 millim. long externally, and 5·6 broad anteriorly above, and 6·6 long below); but comparing the specimen with equally young individuals of *D. arboreus*, it is evident that its size when adult would be just about the same as in that species. Its actual dimensions are:—Head and body 295 millim.; hind foot 48; ear (above crown) 13. Skull—basal length 55; interparietal length 11, breadth 16·2; diastema between incisors 4·7, behind incisors 5·3; lengths of upper milk premolars: m.pm.² 5, m.pm.³ 6·2, m.pm.⁴ 7.

¹ N. H. Mamm. ii. p. 477, 1848.

² *I. e.* posterior, when they are set vertically in the skin.

³ Prof. Stewart has been kind enough to examine the fringes on these spines microscopically for me, and he tells me that "they are only extensions of the cuticular layer of the spines. On the under surface of the spines they are thin and scale-like, becoming simple and hair-like at the margins."

⁴ Preliminary diagnosis given, Ann. Mag. N. H. [5] xx. p. 440, Dec. 1, 1887.

The peculiar pale colour of this Coney is evidently neither due to its youth, for young specimens of the other species are, if anything, darker and not lighter than the adults, nor to albinism, as is shown by the brown bases to the hairs; and I am therefore compelled to look upon it as representing a new species, distinguished from all other members of the group by the colour and fluffiness of its fur.

I have very great pleasure in connecting with this interesting animal the name of its discoverer, to whom science is indebted for so large a contribution to our knowledge of the fauna of Central Africa.

39. *MANIS TRICUSPIS*, Raf.

a. Kudurma, Makraka, 1/84.

b. Kabajendi, Makraka, 8/84.

c. Monbuttu, 5/84.

“ Monbuttu, ‘ Nakito.’ Sandeh, ‘ Kiro.’ ”—E.

These specimens all agree in having 21 longitudinal series of body-scales. Specimen c, the only one with a perfect tail, has 37 marginal, 33 central single, and 6 pairs of terminal caudal scales.

In considering the geographical relations shown by the present collection, it will be advisable at first only to take into consideration the species obtained in Monbuttu. These (excluding two unnamed) are the following:—

1. <i>Anthropopithecus troglodytes</i> .	*	15. <i>Xerus erythropus</i> .	†
2. <i>Galago demidoffi</i> .	*	16. <i>Cricetomys gambianus</i> .	†
3. <i>Felis servalina</i> .	*	17. <i>Malacomys longipes</i> .	*
4. „ <i>caligata</i> .	†	18. <i>Mus (Isomys) barbarus</i> .	†
5. <i>Poiana richardsoni</i> .	*	19. „ <i>gueinzii</i> .	N
6. <i>Crossarchus zebra</i> .	A	20. „ <i>kaiseri</i> .	†
7. „ <i>obscurus</i> .	*	21. „ <i>rufinus</i> .	*
8. <i>Epomophorus monstrosus</i> .	*	22. „ <i>univittatus</i> .	*
9. „ <i>franqueti</i> .	*	23. „ (<i>Leggada</i>) <i>minutoides</i> .	†
10. <i>Anomalurus pusillus</i> .	†	24. <i>Lophuromys sikapusi</i> .	*
11. <i>Sciurus stangeri</i> .	*	25. <i>Georychus ochraceo-cinereus</i> .	†
12. „ <i>rufobrachiatus</i> .	*	26. <i>Atherura africana</i> .	*
13. „ <i>pyrrhopus</i> .	*	27. <i>Dendrohyrax emini</i> .	†
14. „ <i>boehmi</i> .	†	28. <i>Manis tricuspis</i> .	*

Of these 28 species, no less than 16 (marked with a *) are wholly West-African, 14 of them having never been hitherto recorded out of the West-African region at all, and therefore Dr. Emin has extended the known ranges of every one of these 14 by something like a thousand or twelve hundred miles. Of the others, 5 (marked with a †), although found in other regions, also occur in West Africa; 5 (‡) are either peculiar or only otherwise known from neighbouring Central-African localities; one only is Abyssinian (A); and one is as yet elsewhere only known from Natal (N).

The collection as a whole is therefore distinctly West-African in character, and presents no appreciable intermixture of other forms.





Thomas, Oldfield. 1888. "On a Collection of Mammals obtained by Emin Pasha in Equatorial Africa, and presented by him to the Natural History Museum." *Proceedings of the Zoological Society of London* 1888, 3–17.
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