2. On Mammals from Northern Australia presented to the National Museum by Sir Wm. Ingram, Bt., and the Hon. John Forrest. By Oldfield Thomas, F.R.S., F.Z.S.*

[Received April 2, 1906.]

(Plate XXXVII.†)

The Northern Territory of South Australia has a Mammalian fauna of a very peculiar type, and one that is far from being worked out, in spite of the labours of Dr. Elsey, Mr. Gould's collectors, and others in early days, and of Dahl, Tunney, and others more recently. Similarly the centre of the continent is badly represented in the National Collection, although Prof. W. B. Spencer, of Melbourne, who first went there with the Horn Expedition, has laid the foundation of a proper knowledge of it.

Now, thanks to the liberality of Sir William Ingram, Bart., and of the Hon. John Forrest, of Brisbane, a zoological collector has been put to work at Alexandria, a station intermediate in position between the two areas above referred to, and therefore in a district possessing a very special interest to the student of Australian zoology.

Alexandria is situated about lat. 19° S., long. 137° E., about 200 miles inland from the S.W. coast of the Gulf of Carpentaria, and lies in an area draining inwards to the Polygonum swamp. The watershed-boundaries would, however, appear to be low, and unlikely to act as barriers to the dispersal of species, so that in this region the question of drainage is not likely to be of great zoological importance. Collections have also been made near Alroy, about 100 miles to the west of Alexandria. Perhaps later the exploration may be extended still further west to the ranges along the Trans-continental Telegraph-line.

Mr. W. Stalker, the collector employed, has naturally found immense difficulties in the way of collecting in this desert region, owing to the long-continued drought, no rains of any value having fallen for several years, and the fauna being therefore at its lowest ebb.

For this reason the collection of which I here give a list is a most creditable one for the time in which it was obtained, and as rain has since fallen in the district we may hope that Mr. Stalker will now be enabled to capture many further forms of interest that have hitherto escaped him.

The present collection contains examples of 16 species, of which five are new. The most interesting of these is the peculiar little flat-headed Marsupial mouse which I have named *Phascogale*

* [The complete accounts of the new species described in this communication appear here; the names and preliminary diagnoses of two of the species were published in the 'Abstract,' and these are distinguished by the names being underlined.—Editor.]

† For explanation of the Plate, see p. 543.

H. Goodchild, del. et lith. Huth, imp.

1. MUS FORRESTI. 2. PHASCOGALE INGRAMI.

ingrami, after Sir William Ingram, though a new species of *Mus* (*M. forresti*) has such peculiarities of dentition that their study has resulted in a recent rearrangement of the murine genera of Australia.

1. Nyctophilus geoffroyi Leach.

♂. Alexandria.
Forearm 35 mm.

2. Chalinolobus gouldi Gray.

♂. 122, 127. ♀. 125, 128. Bluff Hole, Alexandria, 21–24 May, 1905.

3. Scoteinus greyi Gould.

Ten specimens. Alexandria.

4. Nyctinomus plicatus colonicus, subsp. n.

♂. Alexandria. B.M. No. 6.3.9.16. *Type.*

Similar in all essential particulars to the true Indian *plicatus*, but rather larger in body and limb dimensions, and markedly larger in the skull, the cranial crests, sagittal and lambdoid, very well developed.

Dimensions of the type, measured on the spirit-specimen:—

Forearm 50 mm.

Head and body 67 mm.; tail 42; ear 22; third finger, metacarpal 50, 1st phalanx 21, 2nd phalanx 22; lower leg 18.

Skull—greatest length to occipital crest 22; basal length 17·7; zygomatic breadth 13·5; mastoid breadth 12; palate length 8·7; front of upper canine to back of m^3 8; front of lower canine to back of m_3 9.

Hab. and *Type* as above.

A South-Australian specimen of *N. plicatus* received from Prof. Leche in 1890 also belongs to this larger race. On the other hand, examples from New Guinea and the Fiji Islands correspond in size with Javan and Indian specimens.

5. Canis dingo Blum.

Skin and two skulls. Alexandria.

6. Mus villosissimus Waite.

M. longipilis Gould *nec* Waterh.

♂. 86, 87, 89, 101, 106, 108, 139, 140, 142. ♀. 114, 137, 141, 143. Alexandria.

♂. 145, 186, 187. ♀. 147, 148, 184, 185. S.W. of Alroy.

This species is so common at the station as to be a serious pest.

The type locality of Gould's *M. longipilis* was the Victoria River, about 400 miles to the west of Alexandria, but in the same faunal area.

7. Mus forresti Thos. (Plate XXXVII. fig. 1.)

Abstr. P. Z. S. No. 32, p. 6, May 22, 1906.

♀. 92, 101, 104, 117, 118, 119. Alexandria.

"Caught on dry grassy plain. Native name 'Keragenga.' Mammæ 4."—*W. S.*

Size medium, intermediate between "rat" and "mouse." Fur of medium length; hairs of back 9–10 mm. long, fairly coarse, but not spinous. General colour above pale "drab-grey," paling to a creamy drab on the sides. Some specimens are, however, more buffy in tone. Under surface pure sharply defined white throughout, the hairs white to their bases. Ears rather short, their proectote pale brown, not darker than the general colour of the head; a tuft of creamy-drab hairs at their anterior base. Upper surface of hands and feet pure white. Tail well-haired, greyish white, little darker along the upper side.

Skull rather lightly built, with a slender muzzle. Interorbital region narrow, parallel-sided, its centre concave upwards, its edges rounded anteriorly, squared behind, but without ridges. Palatal foramina long, reaching backward to the anterior fourth of m^1, unusually narrow, especially posteriorly, their edges rounded. Palate extending in middle line some way behind m^3, the interpterygoid fossæ commencing further forward than the mesopterygoid one between them; the former very broad, the latter narrow. Bullæ comparatively little swollen.

Incisors slender, even in old specimens. Molars of rather unusual structure as compared with typical *Mus* (*ratius*, &c.), but there is a great deal of variation among the Australian Muridæ in this respect, and the characters of *M. forresti* are led up to by other described species—e. g., *M. nanus* and *M. gouldii*. M^1 with a very strongly marked cingular ledge at its antero-internal corner, practically forming a small supplementary anterior lamina; the normal anterior and second laminæ very strongly slanted backwards internally, their outer cusps hardly perceptible. M^2 with the large antero-internal cusp ("6" of Winge) about equal to the postero-external ("5"), the normal main lamina between them strongly tilted, as in m^1, and with its inner and median cusps subequal, the outer practically absent; a minute antero-external supplementary cusp present. Lower teeth unusually brachyodont; m_1 and m_2 each with a small median supplementary cusp behind.

Dimensions of the type:—

Head and body 104 mm.; tail 72; hind foot 19; ear 15.

Skull—greatest length 25; basilar length 21; zygomatic breadth 13·5; nasals, length 8·5; interorbital breadth 3·6; palatilar length 13; diastema 7·6; palatal foramina 5·5 × 1·4; length of upper molar series 4·4.

Hab. Alexandria.

Type. Old female. B.M. No. 6.3.9.39. Original number 118. Collected 10 May, 1905.

This striking species may be readily distinguished from all others by its intermediate size, pale colour, pure white belly, peculiarly narrowed palatal foramina, and the unusual dental characters above described. *Mus fieldi* Waite, in other respects apparently near it, has a very much longer tail. I have named it in honour of the Hon. John Forrest, who has shared with Sir William Ingram the expense of supporting a collector at Alexandria station.

8. Mus hermannsburgensis Waite.

♂. 126, 131. ♀. 124, 130. Bluff Hole, Alexandria, May 1905.

♂. 160, 161, 162, 163, 164, 165, 166, 169, 179, 182. ♀. 167, 168, 170, 180, 181, 183. 35 miles S.W. of Alroy, Alexandria. Alt. 800′.

"These Mice make large burrows in the hard stony ridges, piling up the excavated stones on the surface. The entrance is about 15 or 20 feet from the pile of stones, and is a small hole surrounded by a ring of stones."—*W. S.*

Many of the dental peculiarities of *M. forresti* are present in this species, notably the strong development of the antero-internal cingular cusp of m^1, and the slanting position of the inner part of the laminæ of the same tooth. There is, however, an unusual amount of variability in the development of the different cusps, especially in the degree to which the outer cusp of the upper molars is separated from the main middle one. The palatal foramina are not specially narrowed behind.

No skins of this interesting species had been previously sent to Europe.

9. Notomys mitchelli Og.

♂. 153, 154, 157, 158, 172, 177, 178. ♀. 149, 150, 151, 152, 156, 171, 173, 176; and one in spirit. S.W. of Alroy, Alexandria.

Mammæ 0—2 = 4.

The range of *N. mitchelli* seems to extend through the western part of New South Wales and Queensland. The British Museum contains examples collected by Sir Thomas Mitchell in Central New South Wales, while the type, now in the Sydney Museum, was obtained near the junction of the Murrumbidgee with the Murray.

My reasons for applying the name *Notomys* to the Jerboa-footed members of the *Conilurus* group have been explained elsewhere *.

All these specimens have an indication of a glandular organ on the throat, but whether it is such a "pouch" as that on which Mr. Waite founded the genus *Ascopharynx*, the condition of the specimen does not enable me to state.

* Ann. & Mag. N. H. (7) xvii. p. 81 (1906).

10. Macropus rufus Desm.

♀ (young). Alexandria.

11. Trichosurus vulpecula arnhemensis Coll.

♀. 123, 133. Alexandria.

12. Dasyurus hallucatus Gould.

♀. 138. Alexandria, 800′.

"Trapped near water. Lives in lakes under and in rocks."—*W. S.*

13. Phascogale mimulus, sp. n.

♀. Skinned from spirit. Alexandria. (B.M. No. 6.3.9.75.)

A small species with a red patch behind each ear. No lower secator *.

Size small, the general bulk far less than in *Ph. macdonnellensis*, with which alone comparison is needed. Fur short and fine; hairs of back only about 5 mm. in length, as compared with 8 mm. in the allied species. General colour above rather browner than "smoke-grey," rather greyer than "broccoli-brown," but some slight alteration may have occurred during the few months the specimen has been in spirit. Under surface dull cream-buff, probably whiter originally, the hairs dark slaty for three-fourths their length. Head clearer grey than back, a light line edging the eyes above and below. Ears of medium length, their fine hairs rufous brown. Behind each ear a large and prominent patch of light rufous hairs, contrasting strongly with the general colour. Upper surface of hands and feet dull whitish; soles with the main pads arranged as in *Ph. macdonnellensis*, but the general surface less granulated and the foot itself markedly narrower, measuring in the type only 3·4 mm. in breadth as compared with 5·2. Tail nearly the length of the head and body, slightly incrassated at base, thinly haired, not tufted or crested, dull rufous brown above, rather paler below.

Skull considerably smaller than that of *Ph. macdonnellensis*, but of the same general proportions. Nasals rather shorter and broader. Bullæ conspicuously smaller.

Teeth as in the allied species, with the remarkable exception that the last premolariform tooth, the "secator" (p^4 of the Catalogue of Marsupials), while similarly absent in the lower jaw, is in the upper well developed, two-rooted, barely smaller than the tooth in front of it, and slightly larger than p^1. In *Ph. macdonnellensis* this tooth is minute and single-rooted above in the usual correlation to its total absence below.

* The secator is the changing premolar, "p^4" of the Catalogue of Marsupials, but probably more correctly homologised with the tritus, or p^3 of other mammals: *cf.* Ann. & Mag. N. H. (7) xvi. p. 425 (footnote) (1905). In that footnote the words "or more probably mp^3" should be deleted.

Dimensions of the type, measured in spirit:—

Head and body 76 mm.; tail 74; hind foot 13·5; ear 16.

Skull—greatest length 24·7; basal length 22; zygomatic breadth 14·6; nasals 9; interorbital breadth 5·3; height of crown above basion 5·6; palate length 13; breadth at outer corners of penultimate molar 8·8; antero-posterior length of bullæ 5·8 (6·8 in *Ph. macdonnellensis*); combined length of three anterior molariform teeth 5·2.

Hab. and *Type* as above.

This species shows affinity to the Central-Australian *Ph. macdonnellensis* by its absent lower secator and its rufous ear-patches, but is distinguished by its smaller size, shorter fur, greyer colour, smaller bullæ, and by the increased development of its upper secator, a development quite anomalous in the case of a species without a lower one. In *Ph. macdonnellensis* Prof. W. B. Spencer records that in every one of 13 specimens examined this tooth is either absent or very minute, so that the presence of a well-developed double-rooted upper secator clearly indicates specific distinction.

14. Phascogale ingrami Thos. (Plate XXXVII. fig. 2.)

Abstr. P. Z. S. No. 32, p. 6, May 22, 1906.

♂. 110, 111. ♀. 109, 113. Buchanan, Alexandria, 600′.

♂. 120. Bluff Hole, Alexandria, 600′.

A remarkably small species, with minute teeth and flattened skull.

Size very small, slightly smaller even than in *Ph. minutissima*. Fur soft, close, and fine; hairs of back about 4 mm. in length. General colour above not unlike that of the paler wild-living forms of *Mus musculus*, something between Ridgway's "wood-brown" and "broccoli-brown," the hairs slaty grey with pale tips. A younger specimen is clearer grey, without the drabby tone. Under surface paler, with a yellowish tinge, not sharply defined, the hairs slaty at base except on the chin. Crown like back. Cheeks and chin whitish. A whitish-buffy line just over each eye. Ears of medium length, their fine hairs buffy whitish. Upper surface of hands and feet whitish. Tail of medium length, uniformly short-haired, about as in *Mus musculus*, not pencilled, pale brownish white, scarcely lighter below.

Skull remarkable for its extraordinary flattening, a flattening only equalled in 4 other mammals *, three being bats, the height in profile view from the base of the skull in front of the bullæ to the crown only 3·3 mm., as compared with 4·7 mm. in a skull, otherwise little larger, of *Ph. minutissima*. Zygomata evenly convex outwards. Nasals well expanded in their posterior half. Interorbital region flat, its edges without ridges. Occipital crests almost obsolete. Anterior palatine foramina reaching to the level

* *Graphiurus platyops*, *Tylonycteris pachypus*, *Mimetillus moloneyi*, and *Platymops macmillani*.

of the front of the canines. Posterior palate practically without vacuities. Anterior portion of bullæ considerably larger than posterior.

Teeth with the same relative proportions to each other as in *Ph. minutissima*, but conspicuously smaller throughout, both absolutely and in proportion to the size of the skull. Upper secator (last premolar, the "p^4" of the Catalogue of Marsupials) about twice the size of the subequal anterior and median premolars. Lower secator about half the size of the anterior premolar, which is in turn about half the size of the median one.

Dimensions of the type, measured in the flesh :—

Head and body 80 mm. ; tail 60 ; hind foot 10 ; ear 9.

Skull—greatest median length 18 ; basal length 17 ; zygomatic breadth 9·7 ; nasals 6·6 × 3 ; interorbital breadth 3·8 ; breadth of brain-case 8·5 ; palate length 8·7 ; length of upper tooth-row 8 ; combined length of three anterior molariform teeth 3·1 ; length of lower tooth-row 7·2.

A female skull is smaller, 16 mm. in greatest length.

Hab. Alexandria, central part of Northern South Australia. Alt. 600′.

Type. Male. B.M. No. 6.3.9.77. Original number 111. Collected 30 April, 1905. Three specimens.

This remarkable little species looks externally like a more pallid representative of *Ph. minutissima*, but the peculiar characters of its skull and teeth show that it is really a quite distinct animal. I have much pleasure in naming it after Sir William Ingram, to whose initiative and generosity the Museum is indebted for the sending of a collector to this most interesting locality.

15. Sminthopsis larapinta Spencer.

♂. 101, 102, 112, 116. ♀. 93, 100, 119, 144. Alexandria, 600′.

♂. 146. S.W. of Alroy, Alexandria.

"Native name 'Baraga.' Caught among dead timber on plain."—*W. S.*

This is a very beautiful drab-grey species, with a contrasted dark line running down the muzzle, and with the centre of the sole naked as far back as a point equidistant between the heel and the tip of the hallux. It was first obtained at Charlotte Waters, Central Australia, during the Horn Expedition, and was described by Prof. Spencer, who unfortunately, working only from spirit-specimens, did not mention the dark facial line, which is, however, clearly marked in a metatype in the Museum collection.

S. nitela Collett *, of which we have a co-type, would appear to be the same animal, Dr. Collett having been misled by the absence of all reference to the facial line in the original description, and the metatype in the Museum having only been received

* P. Z. S. 1897, p. 334.

after his description was published. Dr. Collett's examples were from the Daly River, so that Alexandria is to a certain extent intermediate between the two localities.

16. Sminthopsis stalkeri, sp. n.

♂. 174, 175. S.W. of Alroy, 800′.

A small species coloured like *S. larapinta*, but with more hairy soles and shorter tail.

Size rather less than in *S. larapinta*, but neither of the two specimens is more than just adult. Fur soft and fine, about 6 mm. long on the back. General colour above more buffy than in *S. larapinta*, the light rings on the hairs dull cream-buff, their fine tips dark brown. Under surface creamy white, the extreme bases of the hairs slaty. Head like back, a dark line on the forehead between the eyes, not so distinct or so long as in *S. larapinta*. Ears of medium length, quite unlike the long ears of *S. hirtipes*, pale grey throughout. Upper surface of hands and feet white. Palms and soles intermediate in their characters between those of the hairy-footed *S. hirtipes* and of the ordinary naked-footed species; the palms apparently with low granulated cushions, but these cannot be accurately described on dried specimens, even when re-damped; the soles with a compound cushion at the end of the metatarsus, as in *S. hirtipes*, but this is naked and granulated as in other species, and has three minute non-lineated pads upon it; the centre of the foot is finely hairy to beyond the tip of the hallux, a few hairs even extending to the back of the large compound pad. Tail shorter than in *S. larapinta*, incrassated at base; finely hairy, greyish white above and below, the tip not darkened.

Skull and teeth very much as in *S. larapinta*, the muzzle rather shorter; bullæ much smaller than in *S. hirtipes*.

Dimensions of the type, measured in the flesh:—

Head and body 70 mm.; tail 65; hind foot 15; ear 17.

Skull—greatest length 23·2; basal length 21·4; zygomatic breadth 13; nasals 8; combined length of three anterior molariform teeth 4·7.

The other specimen has head and body 72 mm.; tail 70.

Type. Subadult male. B.M. No. 6.3.9.91. Original number 175. Collected 1 August, 1905.

This pretty species forms an interesting link between the hairy-soled *S. hirtipes* Thos., described from Charlotte Waters, and the ordinary naked-soled species of the genus. Its shorter tail and more buffy colour will also distinguish it from *S. larapinta*.

Prof. Spencer's *S. psammophilus* would appear to have a similar foot-structure, but is considerably larger.

EXPLANATION OF PLATE XXXVII.

Fig. 1. *Mus forresti*, p. 538.
2. *Phascogale ingrami*, p. 541.