

me to confirm my description of the metatarsal glands and to substantiate the correctness of my supposition as to the structure of the fore feet, published in 1910. The fore feet are exactly like the hind feet, except for the absence of the metacarpal glands. Pedal glands are absent. A piece of the skin of the inguinal region of the same specimen showed two pairs of mammæ, but no trace of inguinal glands, thus agreeing with the dried skins in the British Museum. Hence it may be concluded that Owen's statement that inguinal glands are present in the genus is erroneous; and since he affirmed at the same time the existence of large preorbital glands, which, according to universal testimony, are absent, it seems obvious that the specimen he examined did not belong to the genus *Æpyceros* at all, but was probably some large form of *Gazella*.

XXXIV.—*Diagnoses of new Bats of the Families Rhinolophidæ and Megadermatidæ.* By KNUD ANDERSEN.

[AT the request of Dr. Knud Andersen, who expects to be absent from his scientific work for some time, the following diagnoses are published, mostly in the form of extracts from the synopses of species prepared by him for the second volume of the 'Catalogue of Chiroptera.'

By this method the exact relationship of the species to their nearest allies is readily seen, together with the characters distinguishing them.

The "groups" in which the species of *Rhinolophus* are placed are those recognized (though under different names) in Dr. Andersen's "List of the Species and Subspecies of the Genus *Rhinolophus*"\*, 1905.—O. T.]

Genus RHINOLOPHUS.

*Rh. megaphyllus* group. (Called *simplex* group in the 'Annals' paper, 1905.)

*a*'. Connecting process higher posteriorly than anteriorly (at junction with sella).

*a*<sup>2</sup>. Ears longer, 16.5–21 mm. (inner margin).  
General size larger; forearm 40–49 mm.

*a*<sup>3</sup>. Nose-leaves larger: breadth of sella at base 2.5–3 mm., of horseshoe 9.10–5.

\* Ann. & Mag. Nat. Hist. (7) xvi. p. 648 (1905).

Constriction at middle of sella always distinct.

- b*<sup>3</sup>. Nose-leaves smaller: breadth of sella at base 2-2.3 mm., of horseshoe 7.7-9. Constriction of sella often obsolescent.
- c*<sup>4</sup>. Lancet cuneate or subcuneate.
- d*<sup>4</sup>. Lancet hastate or subhastate (constriction of sella obsolescent or absent).
- e*<sup>5</sup>. Nasal swellings 5.2-5.5 mm.; *c-m*<sup>3</sup> \* 6.7-7.2 ..... *borneensis*
- f*<sup>6</sup>. Nasal swellings 4.9-5.2 mm.; *c-m*<sup>3</sup> 6.2-6.7. Lancet peculiarly shortened (probably nearest hastate), looking as if broader at base than long. Forearm 40-40.5 mm. (S. Java.) ..... *javanicus*, sp. n.
- b*<sup>2</sup>. Ears shorter, 15-16.5 mm. on inner margin. General size smaller; forearm 37-39 mm.
- c*<sup>3</sup>. Connecting process as usual. Nasal swellings 4.6-4.8 mm.; *c-m*<sup>3</sup> 6.3-6.5. Forearm 38-39. (Madura.) ..... *madurensis*, sp. n.
- d*<sup>3</sup>. Connecting process rather more pronounced than usual. Nasal swellings 4.3 mm.; *c-m*<sup>3</sup> 5.9-6.3. (Luzon.) .... *virgo*.
- b*<sup>1</sup>. Connecting process broadly rounded off, as low posteriorly as anteriorly (at junction with sella). Sella distinctly expanded at middle, narrower at base than across expansions, constriction (at or above middle) very distinct.
- c*<sup>2</sup>. Forearm 46 mm.; tibia 20. Sella broader. (Bandon, Lower Siam.) ..... *robinsoni*, sp. n.
- d*<sup>2</sup>. Forearm 40-44 mm.; tibia 16-17. Sella narrower. (Pulo Tioman; P. Pemangil.) *klossi*, sp. n.

*Types*:—

*javanicus*. Female. B.M. no. 9. 1. 5. 174. Original number 1655. Collected 18th March, 1908, by G. C. Shortridge at Pangandaran, Dirk de Fries Bay, S. Java. Presented by W. E. Balston.

*madurensis*. Female. B.M. no. 10. 4. 7. 9. Original number 2164. Collected 4th November, 1909, by G. C. Shortridge at Soemenep, E. Madura. Presented by Oldfield Thomas.

*robinsoni*. Female. B.M. no. 18. 8. 2. 1. Original number 527/13. From Kao Nawng, Bandon, Lower Siam, 13th June, 1913. Presented by the Federated Malay States Museum.

*klossi*. Female. B.M. no. 18. 8. 2. 2. From Pulo Pemangil, June 1915. Presented by the Federated Malay States Museum.

\* *c-m*<sup>3</sup> = front of canine to back of *m*<sup>3</sup>.

*Rh. pusillus* group. (Called *lepidus* group in 1905.)

- a.* Connecting process like an erect (nearly equilateral) triangle, its front margin practically straight (non-concave).
- a'*. Smaller; forearm 33.5-43 mm. . . . . (*pusillus* subgroup.)
- a*<sup>2</sup>. Skull and teeth larger; skull to front of canine 16.5-18.7 mm.; cond.-can.\* 14.4-16.9; mandible 11-13.2; *c-m*<sup>3</sup> 6.2-7.5. . . . . (*lepidus* series.)
- a*<sup>3</sup>. Base of fur of back paler, contrasting with the darker tips . . . . . *lepidus*.
- a*<sup>4</sup>. Skull and teeth averaging larger; total length to front of canine 16.8-18.7 mm.; cond.-can. 15-16.9; *c-m*<sup>3</sup> 6.5-7.5. Forearm 38-42.5. (Upper Burma.) . . . . . *l. shortridgei*, subsp. n.
- b*<sup>3</sup>. Fur of back uniform from base to tip . . . . . *refulgens*.
- f*<sup>4</sup>. Sella subacute, its tip forming an equilateral triangle in front view. (Sumatra.) . . . . . *r. cuneatus*, subsp. n.
- b*<sup>2</sup>. Skull and teeth smaller; skull to front of canine 15.3-16.7 mm.; cond.-can. 13.5-14.8; mandible 9.8-11; *c-m*<sup>3</sup> 5.5-6.4. . . . . (*pusillus* series.)
- (Fur of back pale at base. Sella conspicuously constricted at middle, markedly narrower at tip than at base.)
- a*<sup>3</sup>. Smaller, with relatively shorter tibia and smaller foot. Skull 15.3-16 mm.; cond.-can. 13.5-14.2; forearm 35.5-39.7; tibia 14-16; foot (c. u.) 7-8.
- a*<sup>4</sup>. Canines, *p*<sup>1</sup> and *p*<sub>3</sub> unmodified; *p*<sub>3</sub> sometimes external, but generally half or wholly in row. Forearm 35.5-39.7 mm. . . . . *blythi*, sp. n.
- a*<sup>5</sup>. Fur conspicuously pale above and below. (Kumaon.) . . . . . *b. blythi*.
- b*<sup>5</sup>. Fur conspicuously darker above and below. (Darjiling to China.) . . . . . [subsp. n.]
- b*<sup>4</sup>. Canines much heavier than in *a*<sup>4</sup>; *p*<sup>1</sup> and *p*<sub>3</sub> conspicuously reduced in size; *p*<sub>3</sub> generally external. General size as in *a*<sup>4</sup>.
- c*<sup>5</sup>. Teeth markedly larger; *c-m*<sup>3</sup> 6.4 mm.; *c-m*<sub>3</sub> 6.7. (S. Liu-Kiu; Ishigaki.) . . . . . *perditus*, sp. n.
- d*<sup>5</sup>. Teeth not larger than usual; *c-m*<sup>3</sup> 5.5-5.7 mm.; *c-m*<sub>3</sub> 5.8-6.1. (Middle Liu-Kiu; Okinawa.) . . . . . *pumilus*.
- b*<sup>3</sup>. Larger, with relatively longer tibia and larger foot. Tibia 16.5-17.5 mm. (Japan.) . . . . . *cornutus*.
- b'*. Larger; forearm 44.5-51.5 mm. . . . . (*acuminatus* subgroup.)
- b.* Connecting process like an erect anteriorly curved horn, its front margin conspicuously concave . . . . . (*garoensis* subgroup.)

\* cond.-can. = length of skull from condyle to front of canine.

- a'*. Smaller. Skull, length to canine 15-15·2 mm. . . . . *garoensis*.  
*b'*. Larger. Skull, length to canine 16·4-18 mm., *c-m*<sup>3</sup> 6·3-7; forearm 39-40.  
*c*<sup>2</sup>. Smaller. Skull, length to canine 16·4-17 mm., condyle to canine 14·6-15·3, mandible 11·2-11·7, *c-m*<sup>3</sup> 6·3-6·7; forearm 39-39·5. (North Central Island, Andamans.) . . . . . *famulus*, sp. n.  
*d*<sup>2</sup>. Larger. Skull, length to canine 18 mm. (Port Blair, S. Andamans.) . . . . . *cognatus*.

*Types* :—

- lepidus shortridgei*. Male. B.M. no. 18. 8. 3. 1. Original number 4015. Collected 12th October, 1913, at Pagan, R. Irrawaddy, Burma, by G. C. Shortridge. Presented by the Bombay Natural History Society. A large series examined. Also one from Kindat, Chindwin.  
*refulgens cuneatus*. Male. B.M. no. 7. 1. 9. 3. From Sukaranda, Deli, Sumatra. Collected by Dr. H. Dohrn. Presented by the Museo Civico, Genoa. Paratype in Genoa Museum.  
*blythi*. Female. B.M. no. 18. 8. 3. 2. Original number 3879. Collected 23rd October, 1913, at Almora, Kumaon, 5500', by C. M. Crump. Presented by the Bombay Natural History Society.  
*blythi szechwanus*. Female. B.M. no. 13. 1. 26. 2. Collected at Chung-King, Sze-chwan, 27th Sept., 1912, and presented by Mr. W. R. Brown. Other specimens from Darjiling, Tahò, Burma, Yunnan, other localities in Sze-chwan, and Foochow.  
*perditus*. Female. B.M. no. 5. 11. 3. 15. From Ishigaki, southern Liu-Kiu. Purchased of Alan Owston.  
*famulus*. Female. B.M. no. 9. 4. 4. 8. From North Central Island, Andamans. Presented by the Indian Museum, Calcutta.

*Rh. hipposideros* group. (*midas* group, 1905.)

*Rh. hipposideros*—synopsis of subspecies :—

- a*. Infraorbital bridge linear (very rarely somewhat broadened) . . . . . *minimus*, *hipposideros*, & *minutus*.  
*b*. Infraorbital bridge broadened.  
*d'*. Infraorbital bridge as a rule somewhat, though not often much broadened. Size about as in *minimus*. Forearm of *type* 37·5 mm. Skull, length to front of canine 15·5, condyle to canine 13·8, *c-m*<sup>3</sup> 5·6. (Corsica and Sardinia.) . . . . . *majori*, subsp. n.

- e'*. Infraorbital bridge nearly always much broadened.
- a*<sup>2</sup>. *p*<sub>3</sub> nearly always present. Size as *hipposideros*. (Gilgit to Cyprus.) . . . . . *midas*.
- b*<sup>2</sup>. *p*<sub>3</sub> nearly always absent. Size as *minimus*. Forearm of type 37 mm. Skull, length to front of canine 15·3, condyle to canine 13·6, *c-m*<sup>3</sup> 5·5. (Morocco.) . . . . . *escalerae*, subsp. n.

*Types* :—

- majori*. Male. B.M. no. 6. 4. 14. 3. Patrimonio, N. Corsica. Collected and presented by Dr. C. I. Forsyth Major.
- escalerae*. Female. B.M. no. 10. 11. 24. 2. Ha-ha, Mogador, Morocco. Collected by M. de la Escalera. Presented by Oldfield Thomas.

*Rh. luctus* group. (*philippinensis* group, 1905.)

- c*. Smaller; skull to front of canine less than 25 mm.; forearm 42·5–54.
- c'*. Ears shorter; from base of inner margin 20–23 mm. Nose-leaves smaller; breadth of horseshoe 9·5–10. Fur dark. Skull smaller and narrower, to front of canine 20·5–22; mandible 13·8–15; across *m*<sup>3</sup> 7·2–7·8. Forearm 42·5–50.
- a*<sup>2</sup>. Considerably smaller. (Borneo.) . . . . . *sedulus*.
- b*<sup>2</sup>. Considerably larger; canine to *m*<sup>3</sup> 8·4–8·5 mm.; forearm 48·5–50. Infraorbital canal longer. (Malay Peninsula.) . . . . . *edax*, sp. n.
- d'*. Ears larger; &c. . . . . *trifolius*, *niasensis*, [*solitarius*].
- d*. Larger; skull to front of canine more than 25 mm.; forearm 57–75·5.
- e*. Ear shorter, 28–30·5 mm.; forearm 57–63. . . . . *beddomei*.
- e*<sup>2</sup>. Averaging smaller; *c-m*<sup>3</sup> 9·7 mm.; forearm 57. (Ceylon.) . . . . . *b. sobrinus*, subsp. n.
- f*<sup>2</sup>. Averaging larger; *c-m*<sup>3</sup> 10·2–10·8 mm.; forearm 59·5–63. (Indian Peninsula.) . . . . . *b. beddomei*.
- f'*. Ear longer, 34–39 mm.; forearm 63·5–75·5.
- g*<sup>2</sup>. Ear smaller; &c. . . . . *morio*.
- c*<sup>3</sup>. Ears averaging smaller. Colour generally darker. (Malay Peninsula.) . . . . . *m. morio*.
- d*<sup>3</sup>. Ears averaging larger. Colour generally lighter. (Borneo.) . . . . . *m. foetidus*, subsp. n.

*Types* :—

- edax*. Female. B.M. no. 7. 4. 18. 1. Singapore. Collected and presented by H. N. Ridley.
- beddomei sobrinus*. Female. B.M. no. 18. 8. 3. 3. Original number 1137. Collected at Kala Oya, N.C.P., Ceylon,

by Major E. W. Mayor. Presented by the Bombay Natural History Society.

*morio fœtidus*. B.M. no. 89. 1. 8. 4. Baram, E. Sarawak. Collected by Dr. Charles Hose.

*euryotis* group. (*arcuatus* group, 1905.)

- a. No special modification of hairing of posterior leaf ..... *euryotis* subgroup.
- b. Median (intercellular) portion of posterior leaf clothed with long, semi-rigid, densely set hairs ..... *creaghi* subgroup.
  - a<sup>2</sup>. Posterior connecting process unmodified; hairs of posterior leaf bushy, not specially arranged ..... *canuti*.
  - b<sup>2</sup>. Posterior connecting process practically absent; hair of posterior leaf arranged in a conical tuft pointing towards posterior face of sella.
    - a<sup>3</sup>. P<sub>3</sub> and p<sup>1</sup> not smaller than usual; ears longer; forearm 48.5 mm. (Madura)... *pilosus*, sp. n.
    - b<sup>3</sup>. P<sub>3</sub> rudimentary or wanting, p<sup>1</sup> reduced; ears smaller ..... *creaghi*.

*Type of R. pilosus*:—Male. B.M. no. 10. 4. 7. 5. Original number 2162. Collected at Marengan, Soemenep, E. Madura, Java, 4th November, 1909, by G. C. Shortridge. Presented by Oldfield Thomas.

*Asellia tridens diluta*, subsp. n.

Like *A. tridens tridens*, but averaging larger, and colour of fur conspicuously paler.

Forearm 52.2 mm.

Skull: length to foot of canine 18.7; cond.—can. 16.6; c—m<sup>3</sup> 7; c—m<sub>3</sub> 7.7.

*Hab.* (of type). El Golea, Algerian Sahara. Other specimens from Biskra.

*Type*. Female. B.M. no. 12. 11. 14. 2. Original number 42. Collected 16th May, 1912, by Dr. E. Hartert. Presented by Lord Rothschild.

## Genus HIPPOSIDEROS.

*H. bicolor* group.

- a. P<sub>1</sub> comparatively large, from  $\frac{1}{2}$  to practically the full antero-posterior length of p<sub>4</sub>, its cusp always reaching above middle of cusp of p<sub>4</sub>; internasal septum thick or even pear-shaped (thicker posteriorly).

- a'*. Smaller forms. Skull, cond.-can. 13-15.1 mm., *c-m*<sup>3</sup> 5-6; forearm 34-42.5.
- a*<sup>2</sup>. Smallest. Skull, cond.-can. 13-13.8 mm., *c-m*<sup>3</sup> 5-5.5; forearm 34-40.2.
- a*<sup>3</sup>. Forearm 34-36.7 mm. (India, Burma, Borneo.) ..... *cineraceus*.
- b*<sup>3</sup>. Forearm 37-40.2 mm. (Philippines.) ..... *anticola*.
- b*<sup>2</sup>. Larger. Skull, cond.-can. 13.8-15.1 mm., *c-m*<sup>3</sup> 5.5-6; forearm 37-42.5.
- c*<sup>3</sup>. Skull somewhat narrower in front; across canines 3.5-3.7 mm.
- a*<sup>4</sup>. Decidedly paler. Forearm 37-42 mm. (Sumatra, Java.) ..... *bicolor*.
- b*<sup>4</sup>. Decidedly darker.
- a*<sup>5</sup>. Skull averaging smaller, cond.-can. 13.8-14.6 mm. Forearm 38-41.8. (Ceram, New Guinea, Port Albany.) ..... *albanensis*.
- b*<sup>5</sup>. Skull averaging longer, cond.-can. 15.1 mm. Forearm 40-42. (Key Is.) ..... *albanensis* [subsp. n. *sævus*,
- d*<sup>3</sup>. Skull somewhat broader in front; across canines 4-4.1 mm. Forearm 38.8-42.5. (Nicobars.) ..... *nicobarulæ*.
- b'*. Larger forms. Skull, cond.-can. 15-16.7 mm., *c-m*<sup>3</sup> 6-6.8. Forearm 38.5-46.2.
- c*<sup>2</sup>. Nose-leaves broader than usual. Horseshoe 5.8 mm., sella 5.2. Forearm 40.5. (Coorg.) ..... *pomona*, sp. n.
- d*<sup>2</sup>. Nose-leaves not broader than usual. Horseshoe 4.5-5.5 mm., sella 3.7-4.8 .. *gentilis*, sp. n.
- e*<sup>3</sup>. Smaller. Skull, cond.-can. 15-15.5 mm., *c-m*<sup>3</sup> 6-6.2; forearm 38.5-41.5. (Masuri, Burma, Pegu.) ..... *g. gentilis*.
- f*<sup>3</sup>. Medium. Cond.-can. 15.7-16.3 mm., *c-m*<sup>3</sup> 6.2-6.7; forearm 40-46.2.
- c*<sup>4</sup>. Smaller: forearm 40-43 mm. (Siam, Fokien.) ..... *g. sinensis*, subsp. n.
- d*<sup>4</sup>. Larger: forearm 42-46.2 mm. (Malay Peninsula.) ..... *g. atrox*, subsp. n.
- g*<sup>3</sup>. Largest. Cond.-can. 16-16.7 mm., *c-m*<sup>3</sup> 6.5-6.8; forearm 44.8-46. (Nias, Engano.) ..... *g. major*, subsp. n.
- b*. *P*<sub>1</sub> small, from a little less than  $\frac{1}{3}$  to about  $\frac{1}{2}$  the length (ant. post.) of *p*<sub>4</sub>, its cusp below, or at most at the middle of the cusp of *p*<sub>4</sub>; internasal septum very thin, narrowing into a sharp edge posteriorly.
- c'*. Forearm less than 44 mm.; *c-m*<sup>3</sup> below 6. Nose-leaves smaller.
- c*<sup>2</sup>. Smaller. Forearm 35-37.3 mm. Ears shorter. (Ceylon and S. India.) ..... *atratus*.
- d*<sup>2</sup>. Larger. Forearm 38.5-43 mm. Ears larger. (Indian Peninsula.) ..... *fulvus*.
- h*<sup>3</sup>. Colour of fur averaging darker. (Indian Peninsula as far north as Nasik.) ..... *f. fulvus*.

- i*<sup>3</sup>. Colour of fur paler. (Kathiawar, Cutch, Sind, Rajputana.) . . . . . *f. pallidus*, subsp. n.  
*d*' . Forearm 46 mm.; *c-m*<sup>3</sup> 6·8. Nose-leaves larger, 6×8 mm. (Selangor.) . . . . . *nequam*, sp. n.

*Types*:—

- albanensis scævus*. Female. B.M. no. 99. 12. 4. 12. From Key Is. Purchased of Rolle.  
*pomona*. Male. B.M. no. 18. 8. 3. 4. Original number 2605. Collected by G. C. Shortridge at Haleri, N. Coorg, 15th February, 1913. Presented by the Bombay Natural History Society.  
*gentilis*. Male. B.M. no. 93. 11. 15. 2. From Thayetmyo, Burma. Presented by Lieut. E. Y. Watson.  
*g. sinensis*. B.M. no. 92. 2. 1. 3. From Foo-chow, Fo-kien. Presented by J. de La Touche, Esq.  
*g. atrox*. Female. B.M. no. 1. 3. 9. 4. From Semangko Gap, Selangor, 2800'. Presented by A. L. Butler, Esq.  
*g. major*. Male. B.M. no. 94. 1. 7. 6. From Bua-Bua, Engano Island. Collected by Dr. E. Modigliani. Presented by the Museo Civico, Genoa.  
*fulvus pallidus*. Male. B.M. no. 18. 8. 3. 5. Original number 1636. Collected at Junagadh, Kathiawar, 21st Sept., 1912, by C. A. Crump. Presented by the Bombay Natural History Society.  
*nequam*. Male. B.M. no. 85. 8. 1. 369. From Klang, Selangor. Collected by W. Davison. Presented by A. O. Hume.

*H. diadema* group.

- A. Skull in front of sagittal crest concave; mesopterygoid space broader, palatine angle broadly rounded off; lateral vertical ridges of posterior leaf obsolescent . . . . . *diadema* subsection.  
*a*. Smaller . . . . . *demissus*.  
*b*. Larger . . . . . *diadema*.  
*a*<sup>2</sup>. Averaging smaller: *c-m*<sup>3</sup> 11·3–13·6 mm. Three supplementary leaves. [tus.  
*a*<sup>3</sup>. Forearm 73–82·5 mm. . . . . *d. oceanites*, *d. pulla*-  
*b*<sup>3</sup>. Forearm 76–87·5 mm.  
*c*<sup>4</sup>. Ears not larger than usual: length 27–28·5 mm., breadth 25–26·5.  
*a*<sup>5</sup>. Colour more brownish above and beneath. (Key Is.) . . . . . *d. custos*, subsp. n.  
*b*<sup>5</sup>. Colour powdered with greyish above and still greyer below . . . . . *d. griseus*.  
*d*<sup>4</sup>. Ears larger: length about 30 mm., breadth 28·5–29·8.  
*c*<sup>5</sup>. Skull and dentition weaker: *c-m*<sup>3</sup> about 12·3 mm. (Celebes.) . . . . . *d. speculator*, subsp. n.

- d*<sup>5</sup>. Skull and dentition heavier: *c-m*<sup>3</sup> 13·2-13·6 mm. (Gilolo.) . . . . . *d. euotis*.
- B. Skull in front of sagittal crest convex or flattened; mesopterygoid space narrower; palatine angle acute or subacute; upper border of posterior leaf trilobate; lateral vertical ridges strong . . . . . *lankadiva* subsection.
- c*. Larger. (Ceylon.) . . . . . *lankadiva*.
- d*. Smaller. (Indian Peninsula.) . . . . . *indus*, sp. n.
- e*<sup>1</sup>. Skull larger, length to front of canine 29·8-32·2 mm.; *c-m*<sup>3</sup> 12·5-13·5. General colour dark brown or grey-brown.
- e*<sup>2</sup>. External dimensions averaging smaller: forearm 77-84·5 mm.
- e*<sup>3</sup>. General colour above dark brown, base of hairs not white. (Kanara.) . . . . . *indus indus*.
- f*<sup>3</sup>. General colour above grey-brown, base of hairs white. (E. Mysore.) . . . . . *i. mixtus*, subsp. n.
- d*<sup>2</sup>. External dimensions larger: forearm 82-88 mm. Colour as *f*<sup>3</sup>. (Hoshan-gabad, Saugor.) . . . . . *i. unitus*, subsp. n.
- f*<sup>1</sup>. Skull smaller, to front of canine 28·5-28·8 mm.; *c-m*<sup>3</sup> 11·5-11·1. General colour above slaty, with white bases to hairs. (Bellary.) . . . . . *schistaceus*, sp. n.

*Types*:—

- H. diadema custos*. Male. B.M. no. 10. 3. 1. 27. Original number 850. Collected July 1909 at Ara, Key Island, by W. Stalker. New Guinea Expedition.
- d. speculator*. Female. B.M. no. 97. 1. 3. 20. From Kalao, S. Celebes. Collected by A. Everett.
- indus*. Female. B.M. no. 12. 11. 28. 20. Original number 1109. Collected at Gersoppa, Kanara, 19th May, 1912, by G. C. Shortridge. Presented by the Bombay Natural History Society.
- i. mixtus*. Male. B.M. no. 13. 4. 11. 19. Original number 1747. Collected 18th September, 1912, at Kolar, E. Mysore, by G. C. Shortridge. Presented by the Bombay Natural History Society.
- i. unitus*. Female. B.M. no. 12. 11. 29. 20. Original number 1201. Collected 25th April, 1912, at Mundra, Saugor, C.P., 1600', by C. A. Crump. Presented by the Bombay Natural History Society.
- schistaceus*. Male. B.M. no. 13. 4. 10. 3. Original number 1462. Collected 26th July, 1912, at Vijayanagar, Bellary, by G. C. Shortridge. Presented by the Bombay Natural History Society.

*H. speoris* group.

The subspecies of *speoris* :—

- a. Skull, length to foot of canines 19–20·3 mm. (average of 108 specimens 19·7 mm.); forearm 49·8–54 (average 52). (Ceylon, Kanara, Bombay, Khandeish, Mysore.) ..... *s. speoris*.
- b. Skull, length 18–19·8 mm. (average of 34 specimens 18·8 mm.); forearm 45·8–51·5 (average 49·4). (Bellary.) ..... *s. pulchellus*, subsp. n.

*Type* of *H. s. pulchellus* :—Female. B.M. no. 13. 4. 10. 13. Original number 1473. Collected 27th July, 1912, at Vijayanagar, Bellary, by G. C. Shortridge. Presented by the Bombay Natural History Society.

*H. calcaratus* group.

*H. cupidus*, sp. n.

Nearly allied to *H. calcaratus*, but with teeth considerably smaller, canine to  $m^3$  7·3–7·5 mm. as compared with 8·2–8·3 in *calcaratus*. Forearm in the immature type 46·2; in an adult from Jobi Island 49·2.

*Type*. Immature male. B.M. no. 97. 12. 6. 4. From Eaga, British New Guinea. Collected by A. S. Anthony. Presented by Lord Rothschild.

Genus MEGADERMA.

Subspecies of *M. spasma* :—

- a<sup>2</sup>. Tibia averaging shorter, 27–28 mm. (Celebes, Philippines.) ..... *M. s. spasma*.
- b<sup>2</sup>. Tibia averaging longer, 28·5–33·5 mm.
  - a<sup>3</sup>. Length of skull 24·4–26·3 mm.; lower jaw 16·9–18;  $c-m^3$  9·5–10. Forearm 54–58·5. (Java, Kangean, Sumatra, Borneo.) .... *s. trifolium*.
  - b. As *trifolium*, but averaging perceptibly larger. Forearm 55–61·5 mm. (Malay Peninsula, S. Tenasserim.) ..... *s. medium*, subsp. n.
  - c. Maximum of size in the species; lower jaw 17·8–19 mm.;  $c-m^3$  10–10·8. Forearm 62–63. (Lower Chindwin.) ..... *s. majus*, subsp. n.
  - d. As *trifolium*, but more delicately built; lower jaw 16·6–17·3 mm.; zygomatic breadth of skull 13·7–14·3 mm. (against 14·3–15·5). Forearm 53·5–56·5. (Siam, Camboja.) ..... *s. minus*, subsp. n.

- e. Much like *trifolium*, but with narrower skull; zygomatic breadth 13·8–14·8 mm. Forearm 54–58·5. (Indian Peninsula.) . . . . . *s. horsfieldi*.
- f. As *s. horsfieldi*, but averaging smaller externally. Forearm 52–56·5 mm. . . . . *s. ceylonense*, subsp. n.

*Types* :—

- M. s. medium*. Female. B.M. no. 96. 4. 15. 1. From Singapore. Collected and presented by H. N. Ridley.
- s. majus*. Female. B.M. no. 18. 8. 3. 6. Original number 5354. Collected at Kin, Lower Chindwin, by G. C. Shortridge. Presented by the Bombay Natural History Society.
- s. minus*. B.M. no. 78. 6. 17. 42. From Camboja. Presented by M. Pierre.
- s. ceylonense*. Male. B.M. no. 18. 8. 3. 7. Original number 1317. Collected at Trincomalee by Major E. W. Mayor. Presented by the Bombay Natural History Society.

XXXV.—*Descriptions and Records of Bees*.—LXXX.

By T. D. A. COCKERELL, University of Colorado.

*Xylocopa collaris*, Lepeletier.♂. Sandakan, Borneo (*Baker*).

This is the form which Lepeletier described from Java as *X. dejeanii*. His *collaris* was based on females, doubtless of more than one race, but it may be restricted to the Malayan form, with Sumatra as the type locality.

*Xylocopa collaris penangensis*, subsp. n.

♂. (Type.)—Similar to the Philippine *X. fuliginata*, Pérez, in having the light hair covering first and basal two-fifths of second segments of the abdomen, the lower margin straight. Otherwise it is like *X. collaris*, with pale hair on thorax above, except a narrow band along anterior edge of scutellum. The metathorax has black hair. In the colour of the hair on legs and apex of abdomen it resembles *X. collaris* var. *bryanti*, Ckll., from Java, but the wings are not darker than in typical *collaris*. The thorax dorsally is very faintly greenish. The pleura has pale hair on upper part and black on the lower. The insect is a little smaller than typical *collaris*.



Andersen, Knud. 1918. "Diagnoses of new bats of the families Rhinolophidae and Megadermatidae." *The Annals and magazine of natural history; zoology, botany, and geology* 2, 374–384.

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