



## Annals and Magazine of Natural History: Series 8

Publication details, including instructions for authors and subscription information:  
<http://www.tandfonline.com/loi/tnah14>

### XLIII.—On some of the external characters of the genus *Linsang*, with notes upon the genera *Poiana* and *Eupleres*

R. I. Pocock F.R.S. <sup>a</sup>

<sup>a</sup> Zoological Society's Gardens  
Published online: 11 Sep 2009.

To cite this article: R. I. Pocock F.R.S. (1915) XLIII.—On some of the external characters of the genus *Linsang*, with notes upon the genera *Poiana* and *Eupleres*, *Annals and Magazine of Natural History: Series 8*, 16:94, 341-351, DOI: [10.1080/00222931508693725](https://doi.org/10.1080/00222931508693725)

To link to this article: <http://dx.doi.org/10.1080/00222931508693725>

PLEASE SCROLL DOWN FOR ARTICLE

Taylor & Francis makes every effort to ensure the accuracy of all the information (the "Content") contained in the publications on our platform. However, Taylor & Francis, our agents, and our licensors make no representations or warranties whatsoever as to the accuracy, completeness, or suitability for any purpose of the Content. Any opinions and views expressed in this publication are the opinions and views of the authors, and are not the views of or endorsed by Taylor & Francis. The accuracy of the Content should not be relied

upon and should be independently verified with primary sources of information. Taylor and Francis shall not be liable for any losses, actions, claims, proceedings, demands, costs, expenses, damages, and other liabilities whatsoever or howsoever caused arising directly or indirectly in connection with, in relation to or arising out of the use of the Content.

This article may be used for research, teaching, and private study purposes. Any substantial or systematic reproduction, redistribution, reselling, loan, sub-licensing, systematic supply, or distribution in any form to anyone is expressly forbidden. Terms & Conditions of access and use can be found at <http://www.tandfonline.com/page/terms-and-conditions>

*Limneria garrulum*, Cam. Rec. Albany Mus. i. 1905, p. 315, judging solely from the type (in poor condition), is a *Nemeritis*, sensu Thoms.

*Helictes longipes* (Cam.), from Mexico, was described under the genus *Paipila*.

*Talorga spinipes*, Cam. (Entom. xlv. 1911, p. 64).—The type is a ♂ with mutilated anus; it belongs to the *Plectiscides*, near *Helictes*, and not to the *Mesoleptini*, as stated by Cameron.

**HYMENOPHARSALIA**, Morl. Revis. Ichn., Feb. 1913, p. 97 = *Parophonellus*, Brues, Bull. Amer. Mus., Oct. 1913, p. 495 = *Pharsalia*, Cross. Trans. Amer. Ent. Soc. 1872, p. 177 (nec Thoms. 1864; cf. Schulz, Zool. Ann. iv. p. 22).

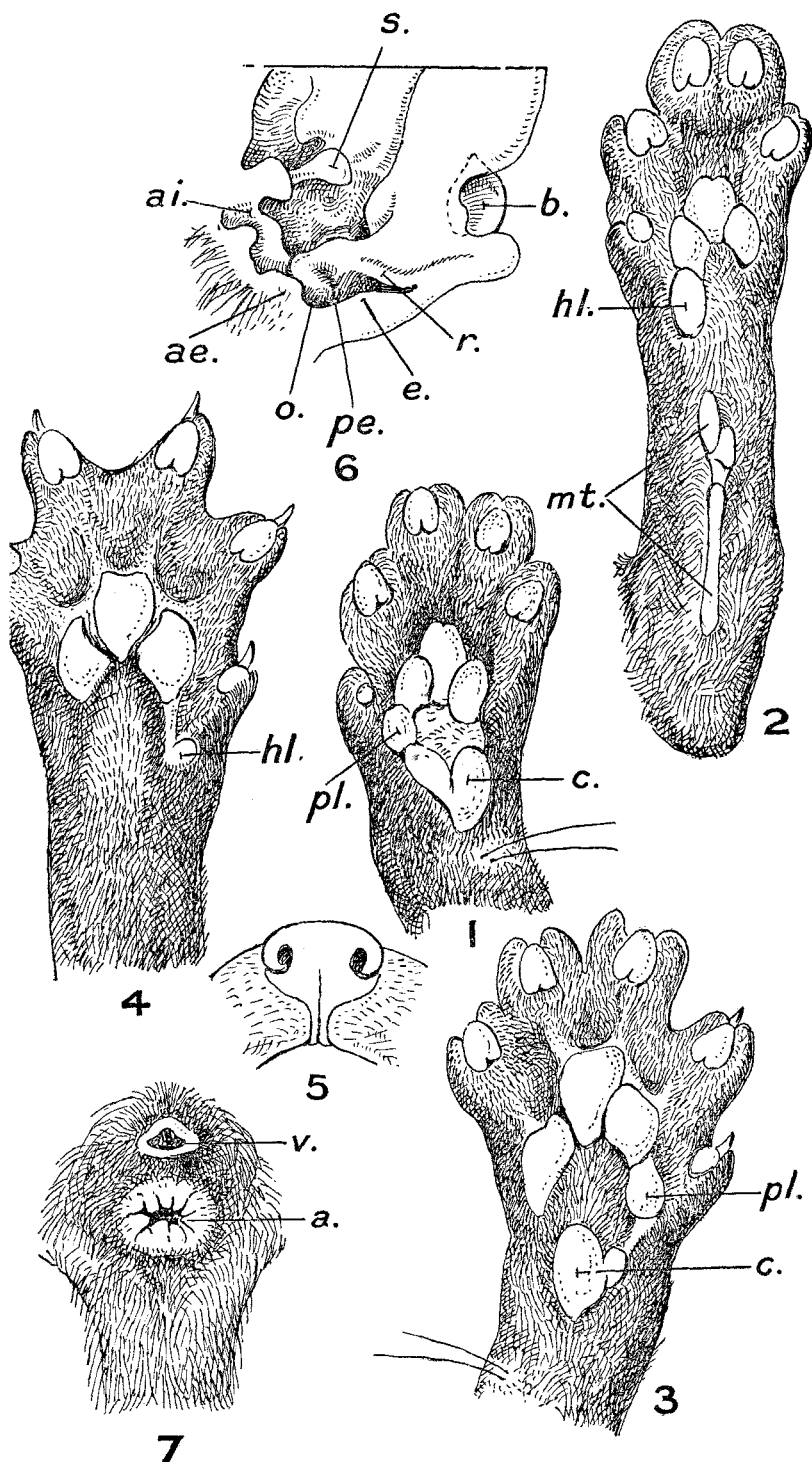
**XLIII.**—*On some of the External Characters of the Genus Linsang, with Notes upon the Genera Poiana and Eupleres.*  
By R. I. Pocock, F.R.S., Superintendent of the Zoological Society's Gardens.

[Plates XII. & XIII.]

IN addition to a number of skins of the three described species of *Linsang*—better, but erroneously, known as *Prionodon*—there are in the British Museum a spirit-preserved example of the genotype, *L. linsang* (= *gracilis*), collected in Sumatra by H. O. Forbes, and Blanford's type of *L. maculosus* from Tenasserim. The following notes, containing particulars about certain cutaneous characters, not described, or only imperfectly described previously, are based upon this material. Of the other genera referred to in this paper, namely *Poiana*, *Fossa*, and *Eupleres*, only dried skins are available for examination. It has not been possible therefore to add many new facts in connection with these forms.

#### *The Genus Linsang* (= *Prionodon*).

The *rhinarium* (Pl. XII. fig. 5) recalls that of *Genetta*. Its upper margin, seen from the front, is mesially flattish, with obtusely rounded angles. The anterior apertures of the nares are small and widely separated; the infranarial portion is quite shallow laterally, does not extend beyond the narial slits, and its inferior border inclines obliquely upwards on each side. The groove which cleaves the upper lip passes about half-way up the anterior surface of the rhinarium, stopping short approximately between the nostrils.



The ear of *L. pardicolor* was figured by Hodgson (Calc. Journ. Nat. Hist. viii. pl. i. 1847); but the illustration suggests inaccuracy in several respects and cannot be relied upon.

The ear of *L. linsang* (Pl. XII. fig. 6), which has never been described, is peculiar in one or two respects. The anterior and posterior ridges arising from the inferior orifice of the meatus (*o.*), are developed as in Viverrine and Paradoxurine genera. On the antero-external ridge (*ae.*), there is a distinct but small lobate prominence above the tragus; but the antero-internal ridge, the post-tragus of Mivart (*ai.*), carries above a large valvular flap, directed backwards and overlapping and concealing the anterior end of the supratragus (*s.*). This recalls the somewhat similar lobe I have described in *Hemigalus* \*. On the outer side of the postero-external ridge (*pe.*), there is a moderately strong crest (*e.*), forming a groove. This crest is continuous in front with the ridge of the tragus; behind it meets another crest or low flap of skin (*r.*), which is placed above it, the two forming together the roof and floor of the aforesaid groove. Nothing resembling the superior ridge, which extends backwards beneath the bursa, has been seen by me on the ear in any genus of Viverridæ, but the lower ridge is comparable to that of *Viverricula* and *Hemigalus*. The bursa (*b.*) is well developed. Its posterior flap is semicircular and arises behind the rim of the pinna, as in *Paradoxurus*, *Genetta*, &c.; the anterior flap is very deeply excavated and the rim of the ear below it is produced into a prominent backwardly projecting lobe, similar to, but better marked than, that of *Paradoxurus hermaphroditus* and *Hemigalus derbyanus*.

The *facial vibrissæ* are normally Viverrine in the number and distribution of their tufts, as Hodgson's figure of *L. pardicolor* shows.

The *feet* (Pl. XII. figs. 3, 4), in the example of *L. linsang*, are, broadly speaking, like those of *Genetta*, with certain exceptions pointed out by Mivart, namely, the absence of naked metatarsal ridges of skin on the hind foot and the deep segmentation of the plantar pads of both fore and hind limbs. In the latter particular these pads differ from those of all the genera of Viverrinæ, where the three lobes are defined merely by shallow grooves and thus constitute a continuous cushion, such as is seen in the Felidæ and Canidæ. The digital pads are small and surrounded by velvety hair, the claws are completely retractile and probably guarded basally by skin-lobes, although this feature could not be substantiated without

\* Ann. & Mag. Nat. Hist. (8) xvi., Sept. 1915, p. 155.

cutting away the hair at the tips of the digits. The interdigital web extends up to the proximal ends of the digital pads and, like the underside of the digit, is clothed with short hair except close to the pad, where the skin is nearly naked and gives off short streaks along the proximal portion of the four main digits. The pollex and hallux are short, their small digital pad being set almost on a level with the posterior angle of the internal lateral lobe of the plantar pad. Attached to this posterior angle in the fore foot is a large ovate pollical lobe (*pl.*). The main portion of the carpal pad (*c.*) is large, cordate or ovate. On its inner side is a small supplementary lobe, from which a naked strip of skin extends up to the pollical lobe. The hallucal lobe (*hl.*) on the hind foot is much smaller than the pollical lobe, and is separated by a space at least equalling its own diameter from the nearest point of the plantar pad, a narrow strip of naked skin passing between the two.

The feet of the example of *L. maculosus*, from Tenasserim, differ in one or two small particulars from those described above. In the fore foot the points of contact between the lateral and median lobes of the plantar pad are a little shorter, the internal lateral lobe is longer and is separated by a deeper constriction from the smaller pollical lobe, and the carpal pad is not connected with the pollical lobe by a naked strip of skin. In the hind foot, on the other hand, the hallucal lobe is closer to the posterior angle of the internal lateral lobe of the plantar pad, and the median lobe of this pad projects nearly as far backwards as the posterior angle of the external lateral lobe.

The feet of an unnamed species, figured by Mivart (P. Z. S. 1882, p. 158), agree on the whole with those of *L. maculosus* above described; but those of *L. pardicolor*, depicted by Hodgson (Calc. Journ. Sci. viii. pl. i. 1847), are distinguished by having both the pollical and hallucal lobes quite small (no larger, indeed, than the digital lobes of those digits), and separated by a space about equalling their own diameter from the plantar pad, and this space appears to be entirely overgrown with hair. Blandford, indeed (Mamm. Brit. India, p. 102, 1888), mentions this as a feature distinguishing *L. pardicolor* from *L. maculosus*. Hodgson, however, had previously given a figure of the hind foot of *L. pardicolor* (Calc. Journ. Nat. Hist. ii. pl. i. 1842); and this differs from the later illustration, taken from a different specimen, not only in the shape of the plantar pad, but in the greater proximity of the hallucal lobe to the nearest point of the plantar pad. These differences may be due to errors

in drawing or to individual variation; but until this has been ascertained by further observations upon the feet in specimens freshly killed or preserved in alcohol, I think it would be unwise to make use of the recorded differences in the pads in discriminating the species of this genus, especially as dried skins from Sikkim and Burma in the British Museum do not bear out the view that the pollical and hallucal lobes are separated by hairy tracts from the plantar pads. Nevertheless, on morphological grounds, the upward migration of the hallucal element of the plantar pad, which, at all events, has taken place in *L. linsang*, whatever may be the case in *L. pardicolor*, only occurs in one other genus of the Viverridæ—namely *Fossa*, from Madagascar.

*The Perineal Region.*—In the characters considered hitherto, there is nothing in the structure of *Linsang* warranting its separation from the group containing *Genetta*, *Civettictis*, *Viverra*, and *Viverricula*, with which it is by common consent associated. That is to say, *Linsang* does not differ from those genera more than they differ from each other, except in the character of the ear.

But there is one character, in my opinion important and fundamental, which enforces the exclusion of *Linsang* from that category—namely, the absence of the scent-pouch. The evidence for this, which is, I think, conclusive, may be briefly given. Of *L. pardicolor*, Hodgson wrote, “like the cats, *Prionodon* is void of either anal\* or pubic glands or pores, so that the living animals are perfectly free from all offensive odour or peculiar scent” (Calc. Journ. Nat. Hist. viii. p. 42, 1847). This statement, so far as the scent-gland is concerned, was confirmed by Mivart on a specimen which I judge by its feet belonged to *L. maculosus* (P. Z. S. 1882, p. 158). He wrote:—“Not only was there no opening between the penis and testes, but no glandular stricture in that situation beneath the skin could be detected either by me or by Mr. William Pearson, who assisted me in the dissection.” Finally, Blanford, who had in 1878 a specimen of *L. maculosus* preserved in alcohol (Journ. As. Soc. Bengal, xlvii. pt. 2, p. 152, 1878), said ten years later, “No prescrotal glands.”

In the female example of *L. linsang*, from Sumatra, in the British Museum, the vulva is close to the anus, being separated therefrom by a narrow strip of hairy skin exhibiting no trace whatever of glandular lobes or pouch (Pl. XII. fig. 7). There are thus two particulars in which this region differs

\* The anal glands, as a matter of fact, are present. Possibly Hodgson was referring to the glandular anal pouch he was probably familiar with in mongooses.

from that of the Viverrines, the absence of the gland and the proximity of the vulva to the anus, both being characters in which *Linsang* resembles the Felidæ and differs from the Viverrinæ. Mivart unfortunately failed to note the position of the prepuce with regard to the scrotum in the male he examined. I suspect, however, that resemblance will be found between the Felidæ and *Linsang* in this respect also.

In view of the constancy of the occurrence and the high degree of development of the scent-glands in the Viverrinæ, it seems to me to be impossible to maintain that *Linsang* is nearly related to any genus of that group. Nor does it seem to me to be reasonable to suppose that the ancestors of *Linsang* possessed the gland. A specialised organ of that kind would not, it may be supposed, abort without some radical change in mode of life, depriving it of its usefulness. But, so far as can be judged from their teeth, feet, pattern, and other external features, the *Linsangs* do not differ in habits from *Genetta* or *Viverra* \*.

#### *The Genus Poiana.*

On structural grounds, cranial, dental, pedal, etc., the genus *Poiana*, restricted to the tropical forest-region of Africa, is always, and unavoidably from available data, associated with *Linsang*. I am not aware, however, that there is any direct evidence that *Poiana* is without the scent-glands; and there are no alcohol-preserved examples whereon this character may be observed. The inference as to their absence is provisionally justified; but the uncertainty of its truth must be borne in mind. If *Poiana* prove to possess this organ, the genus will, according to my views, take a place in the Viverrinæ with *Genetta*, *Viverra*, and the others. For the time being, however, it may be kept with *Linsang*.

The feet of *Poiana* (Pl. XII. figs. 1, 2), judging from dried skins, differ from those of *Linsang* in one or two particulars which recall the feet of *Genetta*. In the fore foot the carpal lobe (*c.*) is very manifestly double. Its external moiety is large, long, and fusiform; its internal moiety is much smaller, but quite well defined, and is wedged in between the external moiety and the elongated pollical lobe (*pl.*) of the plantar pad, which anteriorly touches the posterior angle of the internal lateral lobe of the plantar pad. In most of the dried skins the area between the plantar and carpal pads

\* In my paper upon *Cynogale* (Ann. & Mag. Nat. Hist. (8) xv. p. 359, 1915), I have suggested the possibility of the simple structure of the scent-gland in that genus being attributable to the adoption of an amphibious life and to the modifications in habits thereby enforced.



is naked, but in some it is partially hairy, suggesting that the nakedness is due to post-mortem "slipping" of the hair. This is, I think, the probable, but not the certain, explanation.

In the hind foot the hallucal lobe (*hl.*) is very large, as large as the internal lateral lobe of the plantar pad, with the posterior angle of which it is in contact. A little way above this and separated from it by a hairy tract is a small, narrow, bilobed, metatarsal pad like that of *Civettictis* and representing the area of the double metatarsal streak, where it bifurcates inferiorly, in *Genetta*. Above this little metatarsal pad in *Poiana* there is a narrow streak of naked integument which extends about as far along the underside of the metatarsus as the manifestly double ridge in *Genetta*.

The digital pads in both fore and hind feet are small and surrounded by velvety hairs; the claws are completely retractile and are probably guarded basally by skin-lobes.

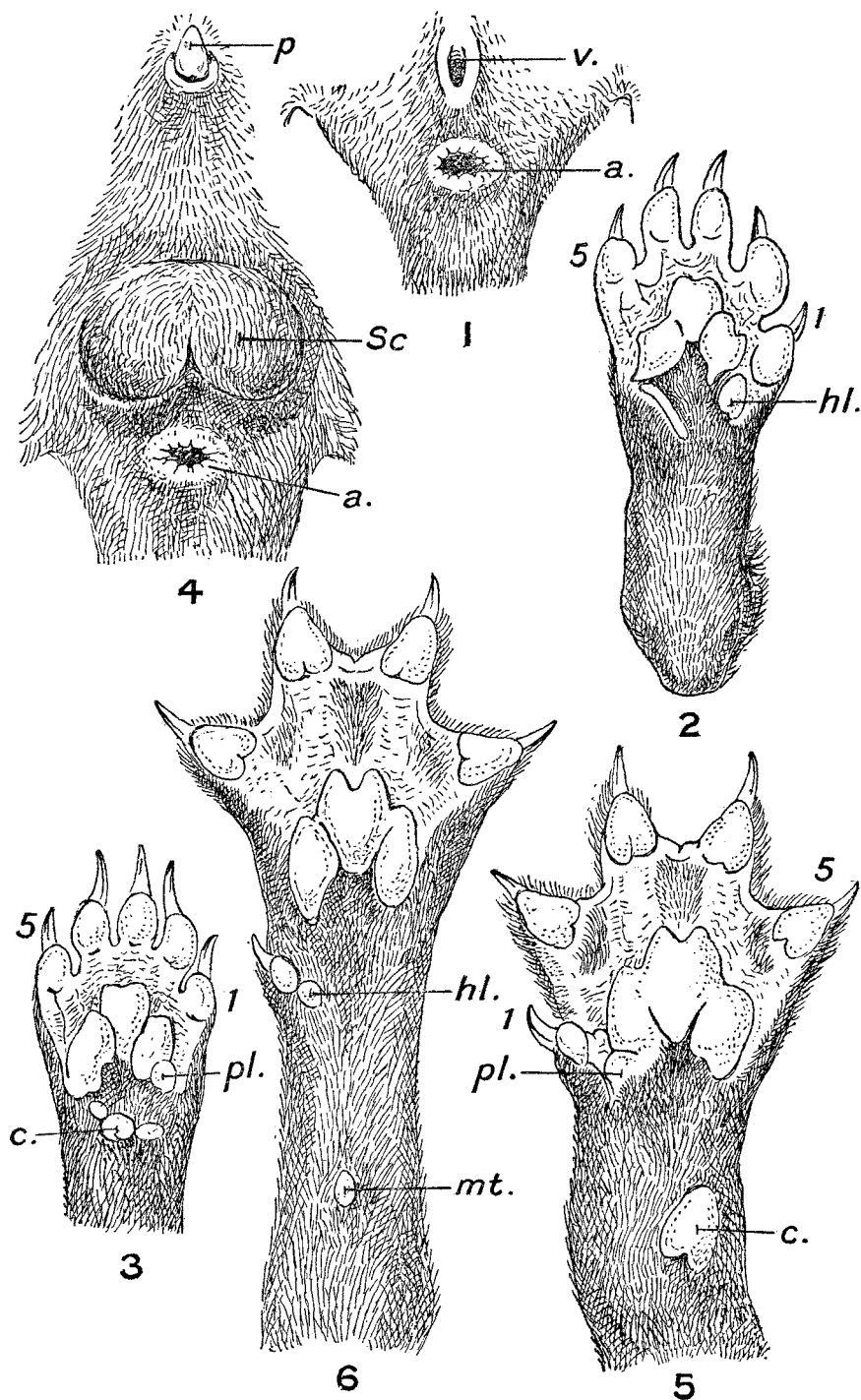
#### *The Genus Fossa.*

Disregarding the absence of the scent-pouch, Mivart classified *Linsang* and *Poiana* with *Viverra*, *Viverricula*, and *Genetta*. He also placed in that category the Mascarene genus *Fossa*, which also has no scent-pouch, comparing it more particularly, but for no very obvious reason, with *Viverricula*. Although unable to give a diagnosis of any value of this group, he yet spoke of it as an assemblage of closely allied forms, a claim which, in my opinion, cannot be maintained.

Of the genus *Fossa* I have seen only three dried skins of adult animals—namely, two of *F. fossa* and one of *F. majori*, all in the British Museum. I can find no trace of the gland in these. In the best-preserved example (Pl. XIII. fig. 4) the area between the anus and the prepuce is continuously hairy, and special attention must be drawn to the position of the prepuce far in advance of the scrotal area, as in *Cryptoprocta*, which also has no such pouch. I believe the first-recorded evidence as to the absence of these glands in *Fossa* is the statement of M. Poivre, quoted by Mivart, that he discovered no scent-pouch and observed no perfume in a freshly killed example\*.

In *Fossa* the legs (Pl. XIII. figs. 5, 6) are slender and elongate, the paws are much less furry than in *Poiana* and *Linsang*,

\* M. Poivre also said, however, that the natives of Madagascar assured him that the male "fossane," when "on heat," has a strong odour of musk. I strongly suspect that this apparent contradiction is due to confusion between two animals, and that the Malagasy natives were referring, not to *Fossa*, but to *Viverricula*, which also occurs, but doubtless by importation, in Madagascar.



and the digital pads are larger. If the term "feline" be applied to the feet of the African and Asiatic genera, "canine" would better express the character of those of *Fossa*. The claws appear to be very imperfectly, if at all, retractile, and the space between the plantar and digital pads is naked or bears three patches of hair. The plantar pad is trilobed, subsymmetrical, and smooth and the lateral lobes of the pad project some distance behind the median lobe. Attached to the posterior angle of the internal lateral lobe of the fore foot is a small pollical lobe (*pl.*), close to which lies the digital pad of the pollex, the pollex itself being short and separated by a comparatively long interval from the digital pad of the second digit. There is a single, undivided, conical, carpal pad some distance above the plantar pad, the intervening space being entirely covered with hair, completely isolating the carpal pad (*c.*).

In the hind feet the short hallux is set higher above the plantar pad than in any genus of Viverridæ, not excepting *Viverricula*, and the very small hallucal lobe (*pl.*) of the plantar pad is withdrawn from that pad in company with the hallux and simulates a second digital pad for that digit. The metatarsus is entirely covered with hair, except for a very small submedian pad (*mt.*) lying nearly midway between the plantar pad and the heel.

Judging from the limbs, *Fossa* is the most digitigrade of the Viverridæ, and appears to be adapted for swift running rather than for climbing; but it does not appear to me that the differences between its feet and those of *Linsang* and *Poiana* are greater or of higher systematic value than those between the feet of the Viverrine genera *Civettictis* and *Genetta*, the former being a terrestrial and the latter an actively scansorial animal. On the other hand, it must be remembered that *Fossa* and some of the species of *Linsang* are the only representatives of the Viverridæ in which the hallucal element of the plantar pad is separated by a hairy tract from that pad.

Provisionally, therefore, but quite provisionally pending the examination of fresh material, *Fossa* may be classified with *Linsang* and *Poiana*, despite its more generalized dentition, attested by the presence of two well-developed upper molars behind the carnassial, *pm*<sup>4</sup>, which is situated well in advance of the posterior root of the maxillary portion of the zygomatic arch—broadly speaking, a Paradoxurine as opposed to a Viverrine character. In *Linsang* and *Poiana*, on the contrary, there is only one small upper molar behind the carnassial, which is set close to the posterior root of the maxillary portion of the zygomatic arch, as in the Viverrinæ.

The pattern of *Fossa* may be briefly referred to. In the typical species, *F. fossa*, it consists of spots on the body and bands on the neck; but in *F. majori*, Dollm., there are four longitudinal dark stripes on each side. The uppermost of these runs from just behind the occiput to the root of the tail, the spinal area being without a median stripe. The second follows a parallel course, but extends farther forwards to the root of the ear, and becomes more broken up on the thigh. The third is shorter and only reaches the base of the neck. The fourth and lowest is quite short and thinner. It extends from the outside of the thigh about halfway along the line where the flank passes into the belly. The general resemblance of this pattern to that of *Galidictis* \* is obvious, despite the great differences between the two genera.

A newly born young, probably belonging to *F. majori*, but referred by Mivart to *F. fossa*, resembles the adult of the former species, except that there is a pair of very narrow parallel stripes in the lumbar region. These, I suspect, represent the median spiral stripe seen in *Genetta*. If so, they suggest that this stripe has been suppressed in *Fossa* as in *Galidictis*.

### *The Genus Eupleres.*

One other genus may be briefly considered in this connection, namely *Eupleres*, a Mascarene form so aberrant in dentition that Mivart made it the representative of a special subfamily, Euplerinæ, a view with which I am not prepared to disagree.

Of this animal I have only seen one stuffed example in the British Museum, but according to Miss Carlsson (Zool. Jahrb. Syst. xvi. pp. 218-236, 1902) the genus is more Viverrine than Mungotine (Herpestine). To this author's list of characters affiliating *Eupleres* with the Viverrines may be added the presence of the bursa on the ear. As she has shown, there is no perineal scent-pouch, no anal sack, the vulva is tolerably close to the anus (Pl. XIII. fig. 1), the hind foot is covered with hair down to the plantar pad, in the fore foot the area between the carpal pads and the plantar pad is hairy, the paws are broad and short, the digital pads are wide and not compressed, and the web joining the toes extends to their proximal ends (Pl. XIII. figs. 2, 3). In all these respects *Eupleres* resembles *Linsang* and *Fossa*. The claws are longish and not retractile, or only imperfectly so, as in *Fossa*; and, as in some examples, at all events, of the latter, the area between the digital and plantar

\* See Ann. & Mag. Nat. Hist. (8) xvi. pl. vii. (1915).

pads is quite naked. The plantar pads are large and normally trilobate, and the internal lateral lobe has a moderately large pollical (*pl.*) or hallucal lobe (*hl.*) attached to its posterior angle. There is no metatarsal pad, but a strip of naked skin runs obliquely inwards and upwards to the middle line from the angle of the external lateral lobe of the plantar pad. The carpal pad (*c.*) is double and closer than usual to the plantar pad, its subspherical external or ulnar moiety being larger than the internal; between the former and the external lateral lobe of the plantar pad there is a small area of naked skin.

In the characters so far enumerated there is nothing to distinguish the feet of *Eupleres*, otherwise than generically, from those of the genera previously discussed in this paper, or, indeed, from those described in my paper upon the Viverrinæ (P. Z. S. 1915, pp. 131-149); but in one character they are peculiar, namely, the comparatively large size and low position of the hallux and pollex—a primitive feature, suggesting that, although truly digitigrade, *Eupleres*, when standing, has the five digital pads instead of four in contact with the ground.

### Conclusion.

Assuming provisionally the absence of perineal scent-glands in *Poiana*, the four genera discussed in this paper differ by that negative character from those I have recently dealt with elsewhere, which may be referred to the four subfamilies of Viverridæ, namely, the Viverrinæ (*Viverricula*, *Viverra*, *Civettictis*, *Genetta*), the Hemigalinæ (*Hemigalus*, *Chrotogale*, *Diplogale*), the Cynogalinæ (*Cynogale*), and the Paradoxurinæ (*Paradoxurus*, *Paguma*, *Macrogalidia*\*, *Arctictis*, *Arctogalidia*, *Nandinia*). I do not think it is placing a too high value upon the characters distinguishing these groups to assign them the rank of subfamilies. The Paradoxurinæ, indeed, may be susceptible of finer subdivision, *Nandinia* especially having strong claims to be regarded as the representative of a special group of that standing. However that may be, the fourteen genera so classified agree, so far as is known†, with each other in possessing the scent-gland in diverse forms and positions in both sexes‡; and this is a very special organ probably inherited from a common

\* Proposed by Schwarz (Ann. & Mag. Nat. Hist. (8) v. p. 423, 1910) for *Paguma mussenbroeki* from Celebes.

† Not verified in *Chrotogale* and *Diplogale*.

‡ Not verified in the male of *Arctogalidia*.

ancestor, and presumably not likely to be lost when once acquired and elaborated.

The three genera *Linsang*, *Poiana*, and *Fossa*, which are without the scent-gland, I propose to allocate to the subfamily Linsanginæ, with the proviso that *Fossa*, when better known, may have to be eliminated therefrom, and placed by itself in a subfamily, the Fossinæ.

The Linsanginæ and the Euplerinæ may be characterized as follows :—

- Viverrids with no scent-pouch and the vulva tolerably close to the anus; feet digitigrade and hairy down to the plantar pads, the metatarsal pads being reduced or absent and the carpal pads or pad much smaller and narrower than the plantar pad.
- a. Hallux and pollex with large digital pads and close to the second digit; jaws long and slender, teeth reduced in size, the canines exceedingly small and the premolars widely spaced ..... *Euplerinæ (Eupleres).*
  - a'. Hallux and pollex very short, with small digital pads and set well above the second digit; skull and teeth unmodified ..... *Linsanginæ.*
  - b. Feet with large digital pads, not imbedded in velvety hair; claws at most partially retractile, unguarded by lobes of skin; area between plantar and digital pads naked or mostly so; hallux high above plantar pad, with accessory pad close to it ..... *Fossa.*
  - b'. Feet with small digital pads imbedded in velvety fur; claws completely retractile and probably guarded by skin-lobes; area between plantar and digital pads thickly hairy; hallux scarcely higher up than plantar pad, its accessory pad (hallucal lobe) close to or touching the plantar pad.
  - c. No metatarsal pads; hallucal lobe of plantar pad small ..... *Linsang.*
  - c'. A long, narrow, median metatarsal pad, ending inferiorly in a bilobed enlargement; hallucal lobe of plantar pad very large ..... *Poiana.*

#### EXPLANATION OF THE PLATES.

##### PLATE XII.

*Fig. 1.* Left fore paw of *Poiana richardsoni* (from dried skin) from the Benito River (digits not separated). *pl.*, pollical lobe of plantar pad; *c.*, external lobe of carpal pad.

*Fig. 2.* Left hind foot of same. *hl.*, hallucal lobe; *mt.*, metatarsal pad.

*Fig. 3.* Right fore paw of female *Linsang linsang* from Sumatra (digits

partially separated). *pl.*, pollical lobe; *c.*, external lobe of carpal pad.

*Fig. 4.* Right hind foot of the same. *hl.*, hallucal lobe.

*Fig. 5.* Rhinarium of the same.

*Fig. 6.* Base of ear of the same. *s.*, supratragus; *b.*, bursa; *pe.*, postero-external ridge; *e.*, crest on outside of latter; *r.*, supplementary ridge; *o.*, inferior orifice of meatus; *ae.* and *ai.*, antero-external and antero-internal ridges.

*Fig. 7.* Ano-genital area of the same. *a.*, anus; *v.*, vulva.

PLATE XIII.

*Fig. 1.* Anal and genital area of female *Eupleres goudoti* (after Carlsson). *v.*, vulva; *a.*, anus.

*Fig. 2.* Right hind foot of the same. *1* and *5*, first and fifth digits; *hl.*, hallucal lobe attached to plantar pad.

*Fig. 3.* Right fore foot of the same. *1* and *5*, first and fifth digits; *c.*, double carpal pad, with spot of naked integument between the larger or outer lobe and the plantar pad; *pl.*, pollical lobe of pad.

*Fig. 4.* Anal and genital area of male *Fossa fossa* (dried skin). *a.*, anus; *sc.*, scrotum; *p.*, prepuce.

*Fig. 5.* Left fore foot of *Fossa majori* (dried skin). Lettering as in fig. 3.

*Fig. 6.* Left hind foot of the same. Lettering as in fig. 2, with addition of *mt.*, metatarsal pad.

---

XLIV.—On some External Characters of *Galidia*, *Galidictis*, and related Genera. By R. I. POOCK, F.R.S., Superintendent of the Zoological Society's Gardens.

[Plates XIV. & XV.]

THE indigenous Mascarene carnivores *Cryptoprocta*, *Fossa*, *Galidia*, *Salanoia* (*Hemigalidia*), *Galidictis*, and *Eupleres* were referred by Mivart to the Viverridæ under the sub-families *Cryptoproctinæ* (*Cryptoprocta*), *Viverrinæ* (*Fossa*), *Galidictinæ* (*Galidia*, *Galidictis*, and *Salanoia*), and *Euplerinæ* (*Eupleres*). Although his definitions were not altogether convincing, the groups themselves will no doubt be admitted by modern systematists, possibly with elevation to the higher rank of families. With *Cryptoprocta* I am not now concerned; *Fossa* and *Eupleres* I suggest (see the preceding paper) may be regarded respectively as divergent types of a primitive group of Viverrids, antedating the ancestor of the groups now characterised by the possession of the scent-gland. With *Fossa* I associate *Linsang*, for the reason that it also is without that organ; and *Poiana* inferentially, and therefore provisionally, goes with *Linsang*, pending the examination of fresh material to establish, or disprove, its possession of the gland.