

NOTES ON SCINCID LIZARDS

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With plate VI and three text-figures

Lygosoma (Sphenomorphus) florense barbouri Dunn (Pl. VI fig. 1)

Sphenomorphus florense barbouri Dunn, Amer. Mus. Nov., no. 288, 1927, p. 5, and Dunn, in: Burden, Dragon Lizards of Komodo, 1927, p. 203.

1 ♂, Noil Toko, Timor, 1937, leg. P. F. van West, Mus. Leiden, reg. no. 7033.

5 ♂♂, 6 ♀♀, Timor, leg. Müller & Macklot, Mus. Leiden, reg. no. 2535.

3 ♂♂, 7 ♀♀, 2 ??, Samao, leg. Müller & Macklot, Mus. Leiden, reg. no. 2534.

These specimens are provisionally referred to the subspecies *barbouri*, described by Dunn from Wetar Id. The dark colour of the throat apparently is a character dependent on age; with four exceptions all specimens of a head and body length above 51 mm have black throats or at least some black spots on the throat. Of the four exceptions three specimens have a length of less than 55 mm (cf. table 1). There is no light and dark post-tympanic mark as described for the Wetar specimens by Dunn. A light vertebral stripe is present in some specimens, but absent in others. It is possible that the populations on Samao and Timor represent a distinct subspecies, but a revision of the subspecies recognized by Dunn is necessary to settle whether these all can be maintained. Pl. VI fig. 1 shows the coloration in life of a black-throated specimen for which Müller used the name *melanopogon* (Duméril & Bibron, 1839, p. 724).

Two females from Timor each contained two eggs.

Lygosoma (Sphenomorphus) emigrans Lidth de Jeude

1 ♂, 3 ♀♀, cotypes, Soemba, leg. Dr. H. ten Kate, Mus. Leiden, reg. no. 4351.

1 ♂, Kambara, Soemba, III.1925, leg. Dr. K. W. Dammerman, Zool. Mus. Amsterdam.

1 ♀, Pajeti, Soemba, leg. P. J. Lambooij, Zool. Mus. Amsterdam.

1 ♂, 1 ♀, Samao, leg. S. Müller, Mus. Leiden, reg. no. 2600.

Van Lidth de Jeude (1894, p. 126) mentioned the two specimens from Samao in the description of *Lygosoma emigrans*. These specimens were

re-examined by me. They are labelled *Lygosoma temminckii*, and probably the records for both this species and for *Lygosoma emigrans* from Samao by De Rooij (1915, pp. 180, 212, 351) were based on these specimens. It

Table 1

| | scales | lamellae under 4th toe | | head + body in mm | tail in mm | throat |
|-------------------------|--------|---------------------------|----|--------------------------------|---------------------------------|-------------------------|
| | | r | l | | | |
| Timor, reg. no. 7033, ♂ | 42 | 30 | 31 | 54 | 108 | white |
| Timor, reg. no. 2535, ♂ | 40 | 31 | 32 | 66 ¹ / ₂ | — | black |
| ♂ | 42 | 31 | 30 | 63 | — | white |
| ♂ | 44 | 35 | 33 | 61 | — | few spots near sides |
| ♂ | 44 | 32 | 31 | 56 | — | black |
| ♂ | 42 | 31 | 33 | 54 ¹ / ₂ | — | white |
| ♀ | 42 | 35 | 33 | 57 | — | black |
| ♀ | 40 | 30 | 31 | 53 | 85 | spots |
| ♀ | 42 | 32 | 31 | 53 | — | spots |
| ♀ | 40 | 30 | 32 | 51 ¹ / ₂ | — | white |
| ♀ | 42 | 31 | 30 | 51 | — | spots |
| ♀ | 42 | 29 | 31 | 45 | — | white |
| Samao, reg. no. 2534, ♂ | 42 | — | 33 | 67 | 91 | black |
| ♂ | 42 | 31 | 30 | 66 | — | black |
| ♂ | 42 | 31 | 31 | 65 | 96 ¹) | black |
| ♀ | 42 | 26 | 29 | 62 ¹ / ₂ | 102 ¹ / ₂ | black |
| ♀ | 42 | 32 | 32 | 62 | — | black |
| ♀ | 42 | 30 | 29 | 61 | 67 | black |
| ♀ | 42 | 30 | 31 | 59 | — | black |
| ♀ | 40 | 28 | 28 | 57 ¹ / ₂ | — | black |
| ♀ | 44 | 31 | 31 | 46 ¹ / ₂ | — | white |
| ♀ | 42 | 32 | 32 | 46 | — | white |
| ? | 44 | 30 | 30 | 45 | — | white |
| ? | 42 | 27 | 27 | 41 | — | white |

is certain that they do not belong to *Lygosoma temminckii*. The male agrees well with *Lygosoma emigrans*, but the female shows some differences which might easily have been accepted as of specific or subspecific value if the specimen were the only one from the island. This female is very slender, the distance from the tip of the snout to the forelimb being contained more than twice in the distance from axilla to groin; the hindlimb is as long as the distance from the forelimb to the posterior corner of the orbit, its length is contained 2.6 times in the distance from axilla to groin. The fourth toe is only slightly longer than the third toe (distinct-

1) Partly regenerated.

ly longer in the male), and the digits are plumper than in the male. The frontal is wider than the supraocular region, and it is in contact with the first supraciliary. In other characters, e.g., the large temporals, and the row of scales between the upper labials and the orbit it agrees with other *emigrans* specimens. The coloration of both Samao specimens has faded. In the female a trace of the dark lateral streak is still visible, as well as some dark spots on the back, which appear to be arranged in two or three longitudinal lines. In this respect it resembles specimens from Soemba, and provisionally I refer the Samao specimens to *Lygosoma* (*Sphenomorphus*) *emigrans emigrans* Lidth.

The scale counts and measurements are given in table 2.

Mertens (1928, p. 229) mentions that the specimen from New Guinea which Van Lidth de Jeude (1897, p. 253) referred to *Lygosoma emigrans* certainly belongs to a distinct subspecies. Re-examination of this specimen showed that it does not belong to *emigrans* at all, but that it is a specimen of *Lygosoma* (*Sphenomorphus*) *pardalis* (Macleay)¹). The specimens from Teoen, Dammer Ids., collected by Dr. F. Kopstein, do belong to a distinct subspecies.

***Lygosoma* (*Sphenomorphus*) *emigrans kopsteini* nov. subsp.**

Lygosoma [(*Hinulia*)] *emigrans*, Kopstein, Zool. Meded. Mus. Leid., vol. 9, 1926, p. 82.

1 ♂, type, 1 ♀, paratype, Teoen, Dammer Ids., 20.IV.1923, leg. Dr. F. Kopstein, Mus. Leiden, reg. no. 5519.

1 ♀, Teoen, Dammer Ids., IV.1923, leg. Dr. F. Kopstein, Mus. Leiden, reg. no. 5082.

From *Lygosoma* (*Sphenomorphus*) *emigrans emigrans* Lidth and from *Lygosoma* (*Sphenomorphus*) *emigrans wetariense* (Mertens, 1928, p. 228) the subspecies from the Dammer Ids. differs in the body being less slender, the adpressed limbs slightly overlapping. The distance from the tip of the snout to the forelimb is contained 1.3-1.6 times in that from axilla to groin (1.6-1.9 in *emigrans emigrans*, 2.1-2.2 in *emigrans wetariense*); the length of the forelimb is contained 2.2-2.5 times in the distance from axilla to groin (*e. emigrans* 2.6-3.8, *e. wetariense* 3.7-3.8); the length of the hindlimb is contained 1.5-1.6 times in the distance from axilla to groin (*e. emigrans* 1.7-2.6, *e. wetariense* 2.3-2.5). 28 scales round the middle of the body, 65-69 scales from the parietals to the level of the posterior border of the hindlimbs; 19-22 lamellae beneath the fourth toe. Nuchals present, varying in number. The scale counts for these specimens, as well as those of eight specimens of *emigrans emigrans* and of two specimens of *wetariense* are given in table 2.

1) I follow Boulenger (1904) in regarding *Lygosoma* (*Sphenomorphus*) *elegantulum* Peters & Doria as a synonym of this species.

Table 2. *Lygosoma (Sphenomorphus) emigrans* L. d. J.

| sex | scales round body | dorsal scales | lamellae under 4th toe | | nuchals | | width of frontal: supraocular region | measurements in mm | | | | | length of hindlimb // distance forelimb to ... 1) | axilla-groin snout-forelimb | axilla-groin forelimb | hindlimb | axilla-groin head+body | |
|-----|-------------------|---------------|------------------------|----|---------|---|--------------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|---|-----------------------------|-----------------------|----------|------------------------|-----|
| | | | r | l | r | l | | head + body | snout to forelimb | axilla to groin | forelimb | hindlimb | | | | | | |
| ♂ | 26 | 66 | 21 | 22 | 1 | 0 | ≡ | 54 ¹ / ₂ | — | 18 ¹ / ₂ | 31 | 10 ¹ / ₂ | 17 | n | 1.7 | 3.0 | 1.8 | 1.8 |
| ♀ | 28 | 70 | 20 | 22 | 2 | 2 | ≡ | 51 ¹ / ₂ | 80 ¹ / ₂ | 16 ¹ / ₂ | 29 | 10 | 15 | nn | 1.8 | 2.9 | 1.9 | 1.8 |
| ♀ | 26 | 62 | 22 | — | 0 | 1 | ≡ | 50 ¹ / ₂ | 78 ¹ / ₂ | 16 ¹ / ₂ | 28 | 9 ¹ / ₄ | 16 | n | 1.7 | 3.0 | 1.8 | 1.8 |
| ♀ | 26 | 65 | 19 | 20 | 3 | 2 | ≡ | 39 | 63 | 12 ¹ / ₂ | 21 ¹ / ₂ | 7 ¹ / ₂ | 12 ¹ / ₂ | sn | 1.7 | 2.9 | 1.7 | 1.3 |
| ♀ | 26 | 65 | 20 | 20 | 1 | 1 | ≡ | 51 | — | 16 | 30 ¹ / ₂ | 10 | 14 ¹ / ₂ | nn | 1.9 | 3.1 | 2.1 | 1.7 |
| ♂ | 24 | 65 | 22 | 22 | 1 | 0 | ≡ | 54 | 98 | 17 ¹ / ₂ | 31 | 10 ¹ / ₂ | 16 | o-n | 1.8 | 3.0 | 1.9 | 1.7 |
| ♂ | 28 | 67 | 20 | 19 | 0 | 0 | ≡ | 48 | — | 16 | 26 | 10 | 15 ¹ / ₂ | n | 1.6 | 2.6 | 1.7 | 1.8 |
| ♀ | 28 | 64 | 16 | 16 | 1 | 2 | > | 52 | — | 15 ¹ / ₂ | 30 | 8 | 11 | p.o. | 1.9 | 3.8 | 2.6 | 1.7 |
| ♀ | 26 | 70 | 17 | 17 | 1 | 1 | ≡ | 61 ¹ / ₂ | — | 17 | 37 | 10 | 15 | 0 | 2.2 | 3.7 | 2.5 | 1.7 |
| ♀ | 26 | 66 | 19 | 19 | 1 | 2 | ≡ | 68 ¹ / ₂ | — | 20 | 42 | 11 | 18 | nn | 2.1 | 3.8 | 2.3 | 1.6 |
| ♂ | 28 | 69 | 22 | 22 | 0 | 3 | ≡ | 46 | 61 | 16 ¹ / ₂ | 25 ¹ / ₂ | 11 | 16 ¹ / ₂ | sn | 1.5 | 2.3 | 1.5 | 1.8 |
| ♀ | 28 | 65 | 22 | 22 | 4 | 2 | ≡ | 44 | — | 16 ¹ / ₂ | 22 | 10 | 15 | n | 1.3 | 2.2 | 1.5 | 2.- |
| ♀ | 28 | 67 | 19 | 20 | 3 | 2 | ≡ | 45 ¹ / ₂ | — | 16 | 25 | 10 | 15 ¹ / ₂ | n | 1.6 | 2.5 | 1.6 | 1.8 |

Lygosoma (Sphenomorphus) e. emigrans
L. d. J.

Soemba
reg. no 4351

Pajéti, Soemba

Kambara, Soemba

Samao, reg. no. 2600

Lygosoma (Sphenomorphus) e. wetariense
Mertens

Great Bastard Id.

Pulau Sukur

Lygosoma (Sphenomorphus) e. kopsteini
nov. subspec.

reg. no 5519

reg. no 5082

1) n: nostril; nn: close to nostril; o: orbit; o-n: between orbit and nostril; p.o.: posterior corner of orbit; sn: tip of snout.

Lygosoma (Sphenomorphus) hallieri Lidth de Jeude

Lygosoma hallieri Van Lidth de Jeude, Notes Leyden Mus., vol. 25, 1905, p. 197; De Rooij, Rept. Indo-Austr. Arch., vol. 1, 1915, p. 210.

1 ♂, type, Poetoes Sibau, Borneo, Borneo exp., Mus. Leiden, reg. no. 4456.

Both Van Lidth de Jeude and De Rooij referred this species to the section *Homolepida* of the genus *Lygosoma*, which section has the hindlimb not longer than the distance between the anterior corner of the eye and the forelimb. Re-examination of the type proved that it does not agree in this respect with the descriptions given by these authors. The hindlimb is slightly longer than the distance from the forelimb to the tip of the snout. In the classification given by M. A. Smith (1937) *hallieri* must be placed with group II B of the section *Sphenomorphus*. A character mentioned by Van Lidth de Jeude, but not by De Rooij is the fact that a shield is intercalated between the frontoparietals and parietals of each side; this shield separates the parietal from the fourth supraocular; on its outer side it is bordered by three scales. In this respect *Lygosoma (Sphenomorphus) hallieri* bears a strong resemblance to *Lygosoma (Sphenomorphus) biparietalis* (Taylor, 1922, p. 177, fig. 22) from the Philippine Islands. From *biparietalis* the species from Borneo differs in the length of the legs, as these overlap when adpressed, while in *biparietalis* they are widely separated. Moreover in *hallieri* the fourth toe is somewhat longer than the third toe; fourth toe with 15, third toe with 11 lamellae. The number of scales round the body is given as 40 by both Van Lidth de Jeude and De Rooij; I do not count more than 36 scales, however. There are two loreals between the nasal and the preoculars; two preoculars, the lower in contact with the second and third upper labial. The tail is quadrangular in cross section at its base, being as broad as high, but distally it is distinctly compressed, the width being contained about once and a half in its height.

Length of head and body 41 mm, length of tail 61 mm, distance from the tip of the snout to the forelimb 14½ mm, distance from axilla to groin 21½ mm; forelimb 9¼ mm, hindlimb 15 mm.

Lygosoma (Sphenomorphus) temminckii Dum. & Bibr., and allied forms

Re-examination of a number of lizards from Buitenzorg (W. Java), which had been entered in the register of our herpetological collection as *Lygosoma temminckii*, I arrived at the conclusion that two different forms had been confused. For comparison I used a large series of specimens from western Java, collected and presented by Jhr. W. C. van Heurn, as well as other specimens in our collections and in the collections of the

Amsterdam Zoological Museum. The result was that matters proved to be even more complex than I first supposed. In the present paper four forms are recognized, viz., the true *Lygosoma (Sphenomorphus) temminckii* Dum. & Bibr., represented by 122 specimens from Java and 2 from Sumatra, *Lygosoma (Sphenomorphus) necopinatum necopinatum* nov. spec. et subspec., represented by 26 specimens from Buitenzorg, *Lygosoma (Sphenomorphus) necopinatum garutense* nov. subspec., based on 15 specimens from Garoet, and *Lygosoma (Sphenomorphus) vanheurni* nov. spec., based on a single specimen from the Ijang Mts., E. Java. Although the differences on which these forms are separated may seem to be slight, I think it best to describe these forms under distinct names. It is not impossible that further researches, based on a much larger series, will show that the differences between *necopinatum necopinatum* and *necopinatum garutense* are too small to recognize them as distinct subspecies, but I feel sure that *necopinatum* and *vanheurni* are certainly distinct from *temminckii*.

The coloration of all four forms is strikingly similar, but there are some morphological characters which make it possible to separate the specimens in several groups. *Lygosoma (Sphenomorphus) temminckii* and *Lygosoma (Sphenomorphus) necopinatum* can easily be distinguished from *vanheurni* by the scales on the dorsal surface of the fourth toe. In *vanheurni* the fourth toe is covered above by two single scales at the apex, followed by four paired scales, and from there on towards the base of the toe the scales are placed in three longitudinal series (cf. Brongersma, 1942, text-fig. 1c); in the other two species the fourth toe is covered above by two single scales at the apex, followed immediately by scales in three longitudinal series.

The specimens without paired scales on the upper surface can be divided into two groups. The first group, comprising the true *temminckii*, has the fourth and third toes of equal length; the length of the suture between frontonasal and rostral is half or less than half the breadth of the rostral (text-fig. 2c); in adult specimens the adpressed limbs fail to meet by a wide interspace; the length of the hindlimb is equal to the distance from the forelimb to the posterior or anterior border of the eye (generally to the centre of the eye).

In the second group the fourth toe is slightly, but distinctly longer than the third toe; the length of the suture between rostral and frontonasal is more than half the rostral breadth (text-fig. 2d); the adpressed limbs are separated by a narrow space or they even touch; the length of the hindlimb equals the distance from the forelimb to a point between the orbit

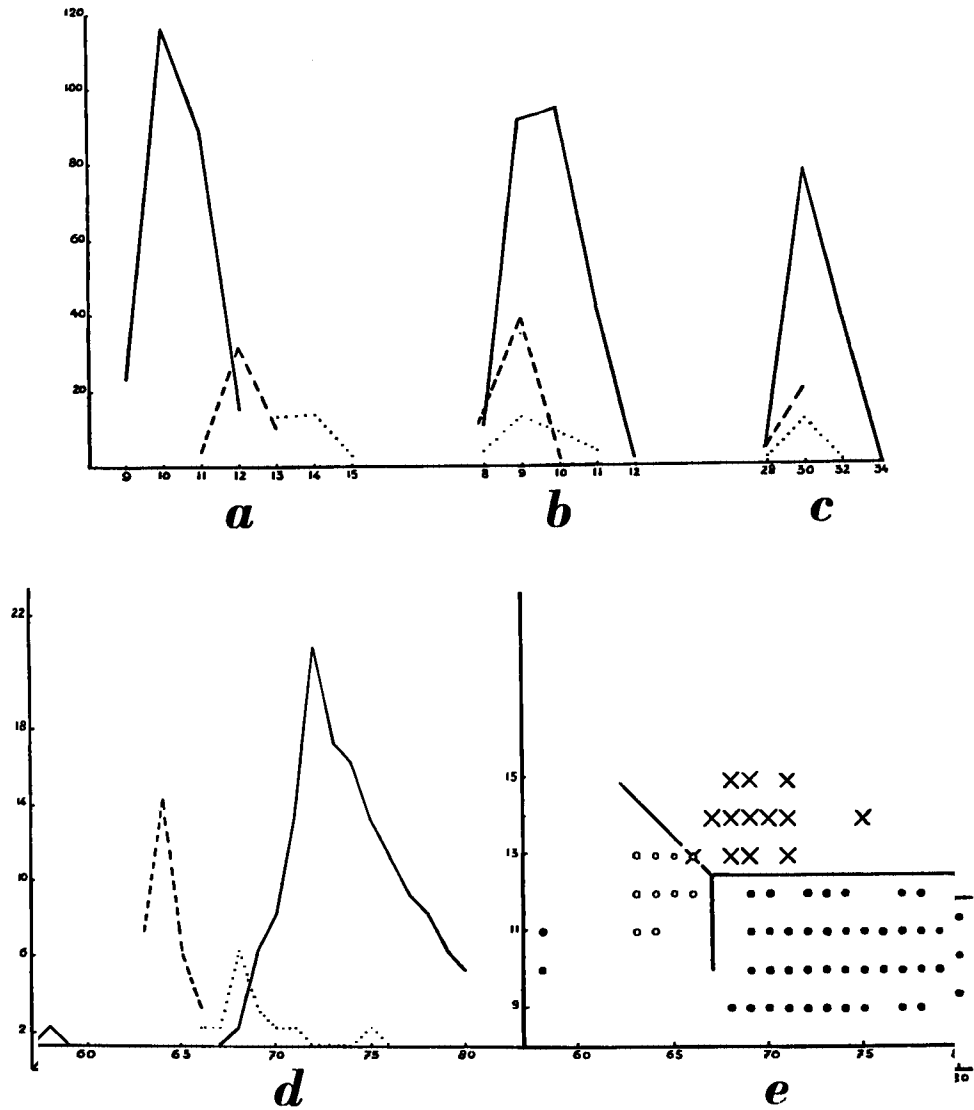


Fig. 1. Graphics demonstrating the variation of some characters in *Lygosoma (Sphenomorphus) temminckii* Dum. & Bibr., *Lygosoma (Sphenomorphus) necopinatum necopinatum* nov. spec. et subspec., and in *Lygosoma (Sphenomorphus) necopinatum garutense* nov. subspec. *a*, number of lamellae beneath the fourth toe, total number of cases from both sides; *b*, number of supraciliaries, both sides together; *c*, number of scales round the middle of the body; *d*, number of dorsal scales (from parietals to a line connecting the posterior sides of the thighs); *e*, number of dorsal scales combined with that of the infradigital lamellae, showing the way in which the specimens from Java can be divided into three groups.

In *a-d* the number of scales has been indicated on the abscissa, the number of cases in which these counts were observed on the ordinate; — *temminckii*; ---, *necopinatum necopinatum*; ... *necopinatum garutense*; in *e* the number of dorsal scales has been indicated on the abscissa, the number of infradigital lamellae on the ordinate;

- *temminckii*; ○ *necopinatum necopinatum*; × *necopinatum garutense*.

and the nostril, or to the nostril. For these specimens I propose the name *Lygosoma (Sphenomorphus) necopinatum* nov. spec.

In the number of infradigital lamellae and in that of the body scales the two species overlap, but nevertheless these numbers combined are of some value to distinguish between the different forms (text-fig. 1b).

Of the two Sumatran specimens of *temminckii* one (from Gng. Sahilan) differs from all the other specimens in the low number (58) of dorsal scales, as counted from the parietals to a line connecting the posterior sides of the hindlimbs; the other Sumatran specimen (from Padang) with 69 dorsal scales comes just within the range of variation of the Javan series. It is possible that the Sumatran specimens may prove to belong to a distinct subspecies; *Lygosoma parvum* Blgr. probably is a subspecies of *temminckii*.

The specimens referred to *Lygosoma (Sphenomorphus) necopinatum* can, in their turn, be divided into two groups. Those from Buitenzorg have 63-66 dorsal scales, and 11-13 infradigital lamellae, while those from Garoet have 66-75 dorsals and 13-15 infradigital lamellae. In this latter character the Garoet specimens differ from true *temminckii* with the same number of dorsals, as these *temminckii* specimens have only 9-12 infradigital lamellae.

Further differences are found in the size reached by the different species, *temminckii* being larger than *necopinatum*. The largest male of *temminckii* has a head and body length of 54 mm, the largest female measures 56 mm; in *necopinatum necopinatum* the measurements are ♂ 38½ mm, ♀ 38 mm, in *necopinatum garutense* ♂ 41 mm, ♀ 44 mm. In agreement with these differences in size is too, that in *necopinatum necopinatum* females of 37½ mm length (head and body), and in *necopinatum garutense* females of 38 mm contain ripe eggs, while in *temminckii* no ripe eggs were found in specimens under a length of 46 mm.

***Lygosoma (Sphenomorphus) temminckii* Dum. & Bibr. (text-figs. 1, 2c)**

- 4 ♂ ♂, Java, leg. Müller & Macklot, Mus. Leiden, reg. no. 2486.
- 5 ♂ ♂, 3 ♀ ♀, Buitenzorg, W. Java, leg. Dr. H. W. van der Weele, Mus. Leiden, reg. no. 7202.
- 3 ♂ ♂, 9 ♀ ♀, Buitenzorg, W. Java, leg. et don. Jhr. W. C. van Heurn, Mus. Leiden, reg. no. 7959.
- 4 ♂ ♂, 4 ♀ ♀, 1 ?, Garoet, W. Java, 1930-1931, leg. et don. Jhr. W. C. van Heurn, Mus. Leiden, reg. no. 7954.
- 7 ♂ ♂, 8 ♀ ♀, 2 juvs., Garoet, W. Java, leg. et don. Jhr. W. C. van Heurn, Mus. Leiden, reg. no. 7955.
- 3 ♂ ♂, 2 ♀ ♀, Garoet, W. Java, 1929, leg. et don. Jhr. W. C. van Heurn, Mus. Leiden, reg. no. 7957.

- 2 ♂♂, 11 ♀♀, 1 juv., very wide surroundings of Garoet, W. Java, 700-1500 m, 1929, leg. et don. Jhr. W. C. van Heurn, Mus. Leiden, reg. no. 7958.
- 18 ♂♂, 25 ♀♀, 1 juv., surroundings of Garoet, chiefly from Tjiboeloe, Papandajan, W. Java, 1930, leg. et don. Jhr. W. C. van Heurn, Mus. Leiden, reg. no. 7966.
- 1 ♂, Government plantation "Tjinjiroean", Malabar Mts., W. Java, 1600 m, 1.XI.1921, leg. et don. Jhr. W. C. van Heurn, Mus. Leiden, reg. no. 5816.
- 1 neonatus, Tasikmalaja, W. Java, ± 350 m, 1.IX.1928, leg. Dr. F. Kopstein, Mus. Leiden, reg. no. 6817.
- 2 neonati, Tjibodas, Mt. Gedeh, W. Java, 7.VIII.1930, leg. Dr. F. Kopstein, Mus. Leiden, reg. no. 6819.
- 1 ♂, 4 ♀♀, Tjibodas, Mt. Gedeh, W. Java, leg. Prof. Dr. Max Weber, 1888, Zool. Mus. Amsterdam.
- 1 ♀, Mt. Gedeh, W. Java, ± 2000 m, leg. E. Jacobson, III.1911, Zool. Mus. Amsterdam.
- 2 ♀♀, West Java, leg. et don. Jhr. W. C. van Heurn, Mus. Leiden, reg. no. 7956.
- 1 ♂, Moelo, Sewoe Mts., Jogjakarta, Central Java, in teak forest, leg. E. Jacobson, III.1911, Zool. Mus. Amsterdam.
- 1 ♀, Padang, Sumatra's West Coast, leg. Prof. Dr. Max Weber, 1888, Zool. Mus. Amsterdam.
- 1 ♀, Goenoeng Sahilan, Sumatra's East Coast, Sumatra, leg. Kleiweg de Zwaan, Zool. Mus. Amsterdam.

The description given by De Rooij (1915, p. 211) may be supplemented by the following notes on the variation.

The prefrontals are separated from each other in 95 specimens; in four of these specimens the shields are only just separated; in one an azygous shield is present between the prefrontals. Of the remaining 29 specimens, five have the prefrontals touching each other in one point only; in 23 specimens the prefrontals form a distinct suture, while in one specimen they have fused into one single shield.

In 100 specimens the parietals are in contact with one another behind the interparietal, but in 7 of these specimens they meet in one point only; in 23 specimens the parietals are separated by the interparietal and an occipital scale.

The first supraciliary is large. In 112 specimens it is in contact with the frontal, both at the right and at the left; the contact is broad on both sides in 104 specimens; broad on one side and narrow on the other in 2 specimens; narrow on both sides in 4 specimens, while in 2 specimens the contact is limited to one point only. In five specimens the first supraciliary is in contact with the frontal on one side (broad 1, narrow 3, in one point 1), while on the other side it is separated from the frontal. In 7 specimens the first supraciliary is separated from the frontal on both sides.

The number of supraciliaries varies from 8 to 12, that of the lamellae beneath the fourth toe from 9 to 12; 28 to 34 scales round the middle of the body; (58) 68 to 80 scales along the middle of the back from the

parietals to a line connecting the posterior side of the thighs. The frequency of these variations is indicated in the graphics in text-fig. 1.

Nuchals are absent, but in one specimen one broad, transverse shield borders both parietals behind. In one specimen a very small scale is wedged in between the nasal, rostral and frontonasal, but on the left side only.

In 77 specimens the length of the hindlimb is equal to the distance from the forelimb to the centre of the eye; in 33 specimens it is slightly longer, but not longer than the distance to the anterior corner of the eye, while in 13 specimens it is somewhat shorter, but not shorter than the distance to the posterior corner of the eye.

Table 3. *Lygosoma (Sphenomorphus) temminckii* Dum. & Bibr., length of females and development of eggs in uteri ¹⁾

| Length of ♀ | eggs | Length of ♀ | eggs | Length of ♀ | eggs | Length of ♀ | eggs | Length of ♀ | eggs |
|-------------|------|-------------|------|-------------|------|-------------|------|-------------|------|
| 56 | 1/4 | 52 | 1/1 | 49 1/2 | 1/2 | 46 | 0 | 35 | 0 |
| 56 | 1/1 | 51 1/2 | 1/1 | 49 1/2 | 0 | 46 | 1/1 | 34 | 0 |
| 55 1/2 | 1/1 | 51 1/2 | 0 | 49 | 3/4 | 46 | 1/1 | 33 3/4 | 0 |
| 55 1/2 | 1/1 | 51 | 1/2 | 49 | 0 | 45 1/2 | 3/4 | 33 1/2 | 0 |
| 55 | 1/1 | 51 | 0 | 48 | 0 | 44 1/2 | 0 | 33 | 0 |
| 54 1/2 | 1/2 | 51 | 1/2 | 48 | 1/2 | 42 1/2 | 0 | 33 | 0 |
| 54 | 1/4 | 51 | 1/2 | 48 | 1/4 | 41 | 0 | 32 1/2 | 0 |
| 54 | 1/1 | 50 1/2 | 1/4 | 47 | 0 | 39 | 0 | 31 1/2 | 0 |
| 53 1/2 | 1/1 | 50 1/2 | 1/1 | 47 | 1/1 | 38 | 0 | 31 | 0 |
| 53 | 1/1 | 50 | 1/1 | 47 | 0 | 38 | 0 | 30 | 0 |
| 52 1/2 | 1/1 | 50 | 1/1 | 47 | 1/4 | 36 1/2 | 0 | 30 | 0 |
| 52 | 1/2 | 50 | 3/4 | 46 1/2 | 0 | 36 1/2 | 0 | | |
| 52 | 0 | 50 | 1/4 | 46 1/2 | 3/4 | 35 1/2 | 0 | | |

Table 3 shows the head and body length of the females together with notes on the presence and the stage of development of the eggs in the uteri. In no female more than two well developed eggs (one in the right and one in the left uterus) were found at the same time. The smallest female with well developed eggs in its uteri has a head and body length of 46 mm.

As stated on p. 126 the record of this species from Samoa (De Rooij, 1915, pp. 212, 351) is erroneous.

¹⁾1/1: fully developed eggs in uterus; 3/4: eggs of nearly the definite size; 1/2: eggs about half the definite size; 1/4: small eggs; 0: no eggs in uterus. The indications 3/4, 1/2 and 1/4 are fully arbitrary.

Lygosoma (Sphenomorphus) necopinatum necopinatum nov. spec. et subspec. ¹⁾ (text-figs. 1, 2d)

1 ♂, type; 8 ♂♂, 14 ♀♀, 3 juvs., paratypes, Buitenzorg, leg. et don. Dr. H. W. van der Weele, Mus. Leiden, reg. no. 7960, specimens a-z (specimen j is the type).

Snout short, obtuse; lower eyelid scaly; ear-opening large, roundish, its diameter about half that of eye-opening; no auricular lobules. Nostril in the nasal; no supranasals. Frontonasal nearly twice as broad as long, forming a broad straight suture with the rostral; the length of the suture is more than half the breadth of the rostral (text-fig. 2d). Two loreals, one behind the other; in some cases the posterior loreal has become divided into two superposed shields, of which the lower has fused with the lower preocular. Prefrontals separated from each other or in contact (5 out of 26 specimens). Frontal shorter than frontoparietals and interparietal together; about as broad as the supraocular region; the frontal in contact with the anterior two supraoculars. Four supraoculars, the second broadest; 8 to 10 supraciliaries, the first largest and in contact with the frontal. Two frontoparietals and one interparietal, about equal in size. Parietals separated from each other by the interparietal and an occipital scale or forming a suture behind the interparietal (12 out of 26 specimens); the parietals are in contact with the fourth supraocular. No nuchals. The upper labials are separated from the orbit by a single series of scales; third to fifth upper labials (rarely fourth to sixth) below the orbit, with the suture between fourth and fifth labials or the fourth labial (rarely the fifth) below the centre of the eye.

Body rather slender; the distance from the tip of the snout to the forelimb is contained 1.2 (in young specimens) to 1.7 times (1.5-1.6 in most specimens) in that between axilla and groin. 30 or 28 (in 5 out of 26 specimens) smooth scales round the middle of the body; 63 to 66 scales along the middle of the back from the parietals to a line connecting the posterior sides of the hindlimbs. The ventral scales slightly larger than the dorsals; the breadth of two ventrals being equal to that of three dorsals. The preanal scales are slightly enlarged. The body is more or less quadrangular in cross section. The tail is slender, more or less quadrangular in cross section at the base; it becomes somewhat compressed towards the tip. The length of the tail is about 1.4 times the length of head and body in adult specimens, 1.1 to 1.2 times that length in young specimens. Limbs rather short, nearly meeting when adpressed, in young

1) From *nec opinatus*, not expected, as it was hardly to be expected to find an unknown species among collections from Buitenzorg, a region in which so much collecting has been done for over a hundred years.

Table 4. *Lygosoma (Sphenomorphus) necopinatum necopinatum* nov. spec. and subspec.

| specimen 1) | sex | scales round body | | dorsal scales 2) | | lamellae under 4th toe | | supraciliaries | | 1st supraciliary in contact with frontal | | prefrontals in contact | parietals in contact | measurements in mm | | | | | | length of hindlimb = distance from forelimb to ... 3) | in case of females, eggs in uterus 4) |
|-------------|------|-------------------|----|------------------|----|------------------------|----|----------------|---|--|-----------------|------------------------|----------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|-------------------------------|--------------------------------|---|---------------------------------------|
| | | | | | | | | | | | | | | head + body | tail | snout to forelimb | axilla to groin | forelimb | hindlimb | | |
| | | r | l | r | l | r | l | r | l | r | l | | | | | | | | | | |
| h | ♂ | 30 | 64 | 12 | 11 | 9 | 9 | + | + | — | — | — | — | 38 ¹ / ₂ | — | 13 ¹ / ₂ | 20 ¹ / ₂ | 7 ¹ / ₂ | 12 ¹ / ₂ | n | |
| j | ♂ | 30 | 63 | 13 | 13 | 8 | 9 | + | + | + ⁵⁾ | — | — | — | 37 ¹ / ₂ | — | 13 ¹ / ₂ | 20 ¹ / ₂ | 8 | 12 ¹ / ₂ | o-n | |
| i | ♂ | 30 | 64 | 12 | 12 | 9 | 9 | + | + | — ⁶⁾ | + | — | — | 36 | 50 | 13 | 20 ¹ / ₂ | 7 ¹ / ₂ | 11 | n | |
| g | ♂ | 30 | 64 | 12 | 12 | 9 | 9 | + | + | + ⁵⁾ | + ⁵⁾ | — | — | — | — | 13 | — | 7 | 12 | n | |
| m | ♂ | 30 | 64 | 12 | — | 8 | 8 | + | + | — | — | — | + ⁵⁾ | 31 ¹ / ₂ | 45 | 11 ¹ / ₂ | 16 | 6 ¹ / ₂ | 11 | n | |
| r | ♂ | 30 | 65 | 12 | 12 | 9 | 10 | + | + | — | — | — | — | 29 | — | 10 ¹ / ₂ | 15 ¹ / ₂ | 6 | 8 ¹ / ₂ | o-n | |
| v | ♂ | 30 | 64 | 11 | 12 | 9 | 8 | + | + | — | — | — | + | 27 ¹ / ₂ | — | 10 ¹ / ₂ | 15 | 6 | 8 ³ / ₄ | n | |
| u | ♂ | 30 | 63 | 13 | 13 | 9 | 9 | + | + | — | — | — | — | 25 ¹ / ₂ | — | 10 | 13 ¹ / ₄ | 5 ¹ / ₂ | 8 ¹ / ₄ | o-n | |
| l | ♀ | 30 | 63 | 12 | 11 | 9 | 9 | + | + | — | — | — | — | 38 | — | 13 ¹ / ₂ | 21 | 7 ¹ / ₂ | 12 | o-n | 1/1 |
| k | ♀ | 30 | 66 | — | 13 | 9 | 9 | + | + | + ⁵⁾ | — | — | — | 38 | — | 12 ¹ / ₂ | 20 ¹ / ₂ | 8 ¹ / ₂ | 11 | o-n | o |
| e | ♀ | 28 | 65 | 13 | 12 | 9 | 9 | + | + | — | — | — | — | — | — | 13 ¹ / ₂ | — | 8 | 12 | o-n | o |
| a | ♀ | 28 | 63 | 12 | — | 8 | 9 | + | + | + ⁵⁾ | — | — | — | 37 ¹ / ₂ | 53 | 12 ¹ / ₂ | 20 ¹ / ₂ | 7 ¹ / ₂ | 11 ¹ / ₂ | o-n | 1/1 |
| c | ♀ | 30 | 63 | 12 | 12 | 8 | 9 | + | + | — | — | — | + | — | — | 12 ³ / ₄ | — | 7 ¹ / ₄ | 12 ¹ / ₂ | n | 1/2 |
| f | ♀ | 30 | 66 | 12 | 12 | 9 | 9 | + | + | — | — | — | — | 37 | 42 ¹ / ₂ | 12 ¹ / ₂ | 20 | 7 ¹ / ₂ | 11 ¹ / ₂ | n | o |
| d | ♀ | 30 | 65 | 13 | 13 | 9 | 8 | + | + | — | — | — | + | 37 | — | 12 | 20 ¹ / ₂ | 7 | 11 | o-n | o |
| n | ♀ | 30 | 64 | 12 | 12 | 8 | 9 | + | + | — | — | — | + | — | 43 | 12 | — | 7 ¹ / ₂ | 11 | n | o |
| b | ♀ | 28 | 64 | 12 | 12 | 9 | 9 | + | + | — | — | — | + | 35 | — | 13 | 20 | 7 ¹ / ₂ | 12 | o-n | 3/4 |
| s | ♀ | 28 | 64 | 11 | 12 | 9 | 9 | + | + | — | — | — | — | 31 | — | 11 | 17 | 6 ³ / ₄ | 10 ³ / ₄ | o-n | o |
| p | ♀ | 30 | 65 | 12 | 12 | 10 | 9 | + | + | — | — | — | — | 28 ¹ / ₂ | — | 9 ¹ / ₂ | 15 ¹ / ₄ | 6 | 9 ³ / ₄ | o-n | o |
| o | ♀ | 28 | 64 | — | 12 | 8 | 9 | + | + | — | — | — | — | 28 | 40 ¹ / ₂ | 10 ¹ / ₂ | 16 ¹ / ₂ | 6 | 10 ¹ / ₂ | n | o |
| t | ♀ | 30 | 64 | — | 12 | 9 | 9 | + | + | + ⁵⁾ | + ⁵⁾ | — | + | 28 | — | 10 ¹ / ₄ | 15 | 5 ¹ / ₂ | 8 ¹ / ₂ | o-n | o |
| q | ♀ | 30 | 64 | 12 | 12 | 9 | 9 | + | + | — | — | — | + | 26 ¹ / ₂ | 35 | 10 ¹ / ₂ | 13 ¹ / ₂ | 6 | 9 ¹ / ₂ | n | o |
| w | juv. | 30 | 64 | 12 | — | 9 | 9 | + | + | — | — | — | + | 21 ¹ / ₂ | — | 8 ¹ / ₂ | 11 ¹ / ₄ | 5 | 7 ¹ / ₂ | n | |
| x | juv. | 30 | 64 | 13 | 13 | 8 | 8 | + | + | — | — | — | — | 19 ¹ / ₂ | — | 7 ¹ / ₂ | 11 | 4 ¹ / ₂ | 6 ¹ / ₂ | o-n | |
| y | juv. | 30 | 65 | 12 | 12 | 9 | 9 | + | + | — | — | — | — | 18 ¹ / ₂ | 22 | 7 ¹ / ₂ | 9 | 5 | 6 | o-n | |
| z | juv. | 30 | 63 | 12 | 12 | 9 | 9 | + | + | — | — | — | + | 17 | 19 | 7 | 8 ¹ / ₂ | 4 ³ / ₄ | 6 | o-n | |

1) Specimens a-z, reg. no. 7960.

2) counted from the parietals to a line connecting the posterior sides of the thighs.

3) n: nostril; o-n: between orbit and nostril.

4) 1/1: fully developed eggs in uterus; 3/4: eggs in uterus not yet full size; 1/2: eggs in uterus about half developed; o: no eggs in uterus.

5) shields meeting in one point only. 6) shields just separated.

specimens meeting or even slightly overlapping. The hindlimb is as long as the distance from the forelimb to a point between orbit and nostril or to the nostril (10 out of 26 specimens). The digits are rather short, the fourth toe is slightly, but distinctly longer than the third, with 11 to 13 lamellae underneath. The fourth toe is covered above by two single scales at the apex, followed by three longitudinal rows of scales extending towards the base of the toe. The graphics in text-fig. 1 show the frequency of variation in the number of scales, infradigital lamellae and supraciliaries.

Light brown above, head mottled with darker brown; eight longitudinal dark lines on the back, formed by the dark centres of the scales; on the neck only four of such lines. A dark, blackish lateral band along the sides, starting behind the orbit, passing above the ear and above the shoulders, and passing on to the sides of the tail; light scales form a series of whitish dots in this band. The dark band is bordered above by a pale brownish line; below the dark band the sides are whitish with more or less distinct longitudinal lines, consisting of greyish dots. The labials have whitish centres. The tail is light brown above mottled with dark brown. Lower sides of head and body whitish; the lower surface of the tail whitish with longitudinal lines formed by grey dots.

The measurements are given in table 4. The smallest female with well developed eggs has a head and body length of 37½ mm.

Lygosoma (Sphenomorphus) necopinatum garutense nov. subspec. 1)
(text-fig. 1)

- 1 ♀, type, 1 ♂, 4 ♀♀, 1 juv., paratypes, Garoet, W. Java, 1928, leg. et don. Jhr. W. C. van Heurn, Mus. Leiden, reg. no. 7962; specimens cc-ii (cc is the type).
1 ♂, 3 ♀♀, paratypes, Garoet, W. Java, 1930-1931, leg. et don. Jhr. W. C. van Heurn, Mus. Leiden, reg. no. 7961; specimens bbb-eee.
1 ♂, paratype, very wide surroundings of Garoet, W. Java, 700-1500 m, 1929, leg. et don. Jhr. W. C. van Heurn, Mus. Leiden, reg. no. 7963, specimen jj.
1 ♂, paratype, Garoet, W. Java, 1929, leg. et don. Jhr. W. C. van Heurn, Mus. Leiden, reg. no. 7964, specimen aaa.
1 ♂, 1 ♀, paratypes, Garoet, W. Java, 1928, leg. et don. Jhr. W. C. van Heurn, Mus. Leiden, reg. no. 7965, specimens aa-bb.

Snout short, obtuse; lower eyelid scaly; ear-opening large, roundish, its diameter about half that of the eye-opening; no auricular lobules. Nostril in the nasal; no supranasals. Frontonasal nearly twice as broad as long, forming a broad suture with the rostral; the length of this suture is more than half the breadth of the rostral. Two loreals one behind the other;

1) From Garut (Dutch spelling: Garoet), the locality.

sometimes the second loreal is excluded from contact with the upper labials by the first loreal and the lower preocular forming a short suture; in other cases a very small scale is present between the second loreal and the labials, or the second loreal has become subdivided into two superposed shields, of which the lower has fused with the lower preocular. Prefrontals separated from each other, or in contact (4 out of 15 specimens). Frontal shorter than frontoparietals and interparietal together, in contact with the anterior two supraoculars. Four supraoculars, the second broadest; 8 to 11 supraciliaries, the first of these is large, and is in contact with the frontal (only in one specimen it is separated from the frontal). Two frontoparietals and one interparietal, about equal in size. Parietals forming a suture behind the interparietal, or separated from each other by the interparietal and an occipital scale (2 out of 15 specimens); no nuchals. A single series of scales separates the upper labials from the orbit; third to fifth (rarely fourth to sixth) upper labials below the orbit, with the fourth (rarely the fifth) below the centre of the eye.

Body rather slender; the distance between the tip of the snout and the forelimb is contained 1.5—1.9 times in that between axilla and groin (1.1 in a young specimen). 28—32 smooth scales round the middle of the body; 66—75 scales along the middle of the back from the parietals to the line connecting the posterior sides of the hindlimbs. The ventral scales are slightly larger than the dorsals (the breadth of 4 ventrals is equal to that of 5 dorsals); the preanal scales are slightly enlarged. Tail slender, about quadrangular in cross section at the base; its length about once and a half that of head and body (in young specimens the length of the tail is equal to that of head and body). Limbs rather short, not meeting when adpressed, but sometimes separated by a very small space only. The hindlimb is as long as the distance from the forelimb to a point between the orbit and the nostril or to the nostril (5 out of 15 specimens). The digits are rather short, the fourth toe is slightly, but distinctly longer than the third, with 13 to 15 lamellae underneath. The fourth toe is covered by two single scales at the tip, followed by three longitudinal rows of scales extending towards the base.

Light brown above; the head mottled with darker brown; the back with about eight dark longitudinal lines (six on the neck), formed by the dark centres of the scales. A dark, blackish lateral band, starting behind the orbit, but well defined only from above the ear, passing above the shoulder along the sides of the body and on to the sides of the tail. This band is bordered by a pale brownish line above; the black of the band is interrupted by small whitish dots, which are arranged in a regular longitudinal series.

Below the lateral band the sides are whitish with indistinct lines of blackish or greyish dots; only in one adult male (specimen aaa) the sides are very dark, showing more or less distinct black longitudinal lines with white dots. Upper labials with light centres. Lower side of head and body

Table 5. *Lygosoma (Sphenomorphus) nccopinatum garutense* nov. subspec.

| specimen 1) | sex | scales round body | dorsal scales 2) | lamellae under 4th toe | | supraciliaries | | 1st supraciliary in contact with frontal | | prefrontals in contact | parietals in contact | measurements in mm | | | | | length of hindlimb = distance from forelimb to ... 3) | in case of females, eggs in uterus 4) | |
|-------------|------|-------------------|------------------|------------------------|----|----------------|----|--|---|------------------------|----------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|-------------------------------|---|---------------------------------------|----------|
| | | | | r | l | r | l | r | l | | | head + body | tail | snout to forelimb | axilla to groin | forelimb | | | hindlimb |
| | | | | | | | | | | | | | | | | | | | |
| aaa | ♂ | 30 | 68 | 13 | 13 | 10 | 9 | + | + | — | + | 44 | 54 | 14 | 26 | 8 ¹ / ₂ | 13 | o-n | |
| eee | ♂ | 30 | 69 | 14 | 14 | 11 | 11 | — | — | + | + | 33 ¹ / ₂ | 49 | 12 | 18 | 6 | 9 ¹ / ₂ | o-n | |
| ee | ♂ | 30 | 71 | 13 | 13 | 10 | 10 | + | + | — | — | 31 ¹ / ₂ | 48 | 11 ¹ / ₂ | 17 ¹ / ₂ | 6 | 9 ³ / ₄ | o-n | |
| jj | ♂ | 30 | 66 | 13 | 13 | 8 | 9 | + | + | + ⁵⁾ | + | 31 | 42 ⁶⁾ | 11 | 17 ¹ / ₂ | — | 10 | n | |
| aa | ♂ | 30 | 68 | 13 | 13 | 10 | 10 | + | + | — | + ⁶⁾ | 27 | 43 ¹ / ₂ | 9 ¹ / ₂ | 15 ¹ / ₂ | 5 ³ / ₄ | 9 | n | |
| bb | ♀ | 30 | 67 | 14 | 14 | 8 | 8 | + | + | — | + | 4 ¹ | — | 13 ¹ / ₂ | 24 | 6 ¹ / ₂ | 11 ¹ / ₂ | nn | o |
| hh | ♀ | 30 | 71 | 15 | 14 | 9 | 8 | + | + | — | — | 40 | — | 13 | 24 | 7 ¹ / ₂ | 12 | n | 1/4 |
| bbb | ♀ | 30 | 69 | 15 | 14 | 10 | 9 | + | + | + | + | 40 | — | 12 | 22 ¹ / ₄ | 7 ¹ / ₂ | 10 ¹ / ₂ | o-n | o |
| gg | ♀ | 30 | 68 | 15 | 14 | 9 | 9 | + | + | — | + | 39 | 59 ¹ / ₂ | 12 ¹ / ₂ | 24 | 7 | 11 | nn | 1/1 |
| cc | ♀ | 32 | 68 | 13 | 13 | 9 | 9 | + | + | — | + | 38 | 57 | 12 | 22 ¹ / ₂ | 7 | 11 | n | 1/1 |
| ff | ♀ | 30 | — | 14 | 14 | 9 | 9 | + | + | — ⁷⁾ | + | — | — | 13 | — | 8 | 11 | o-n | ? |
| ccc | ♀ | 28 | 69 | 13 | 13 | 10 | 10 | + | + | — | + | 37 ¹ / ₂ | 46 ¹ / ₄ | 12 | 21 | 6 ¹ / ₂ | 10 ¹ / ₄ | o-n | o |
| ddd | ♀ | 28 | 70 | 14 | 14 | 11 | 11 | + | + | — | + | 34 ¹ / ₄ | 52 | 11 ¹ / ₄ | 19 | 6 ³ / ₄ | 10 ¹ / ₂ | n | o |
| dd | ♀ | 30 | 75 | 14 | 14 | 9 | 9 | + | + | + ⁵⁾ | + | 32 | 49 ¹ / ₂ | 11 | 18 | 6 ¹ / ₂ | 10 | o-n | o |
| ii | juv. | 30 | 68 | 13 | 14 | 10 | 9 | + | + | — | + | 17 ¹ / ₂ | 18 | 7 | 7 ¹ / ₂ | 4 ³ / ₄ | 6 | o-n | o |

whitish; in one specimen (aaa) a few dark spots on the throat. Tail light brown above, mottled with darker brown; whitish below with longitudinal series of grey dots, which start from the vent.

The measurements are given in table 5. The graphics in text-fig. 1 show

1) Specimens aa-bb: reg. no. 7965; cc-ii: reg. no. 7962; jj: reg. no. 7963; aaa: reg. no. 7964; bbb-eee: reg. no. 7961.

2) counted from the parietals to a line connecting the posterior sides of the thighs.

3) n: nostril; nn: close to nostril; o-n: between orbit and nostril.

4) 1/1: fully developed eggs in uterus; 1/4: very small eggs in uterus; o: no eggs in uterus.

5) shields meeting in one point only.

6) tip of tail regenerated.

7) an azygous shield between the prefrontals.

the frequency of the variation in the number of scales, infradigital lamellae and supraciliaries.

The smallest female with well developed eggs in its uteri has a head and body length of 38 mm. In no female more than two eggs were found at the same time, and then one in the left, the other in the right uterus.

From the typical subspecies of *necopinatum* this race is distinguished by the higher number of dorsal scales, combined with a higher number of infradigital lamellae; the range of variation of both subspecies slightly overlaps (text-fig. 1e).

Lygosoma (Sphenomorphus) vanheurni nov. spec. (text-fig. 2a, b) ¹⁾

1 ♀, type, shore of the crater lake "Taman Hidoep", above Breml, Ijang Mts., 1900 m, Probolinggo Residency, E. Java. November 1931, leg. et don. Jhr. W. C. van Heurn, Mus. Leiden, reg. no. 7967.

Snout short, obtuse; lower eyelid scaly; ear-opening large, oval, somewhat smaller than the eye-opening; no auricular lobules. Nostril in the nasal; no supranasals. Frontonasal twice as broad as long, forming a broad straight suture with the rostral. Two loreals; one behind the other. Prefrontals separated from each other by an azygous shield ²⁾. Frontal once and a half as long as wide, as broad as the supraocular region, and as long as the frontoparietals and interparietal together. The frontal is in contact with the anterior two supraoculars. Four supraoculars; on the right side the first longer than the fourth, on the left side first and fourth about equal in length; second supraocular widest. On the left side the third supraocular is divided into two shields by a longitudinal suture. Nine supraciliaries, the first large and broadly in contact with the frontal. Six upper labials, the fourth below the centre of the eye. Two frontoparietals and one interparietal, about equal in size. Parietals forming a suture behind the interparietal. No nuchals.

Body long and slender, the distance from the tip of the snout to the forelimb is contained twice in that from axilla to groin. 31 smooth scales round the middle of the body; 81 scales from the parietals to a line connecting the posterior surface of the thighs. The ventral scales are slightly larger than the dorsals; the breadth of three ventrals is about equal to that

1) Named after Jhr. W. C. van Heurn to whom the Museum is greatly indebted for so many valuable specimens.

2) This shield certainly represents an individual variation; a similar shield has been found in one specimen of *Lygosoma (Sphenomorphus) temminckii* Dum. & Bibr. and in one specimen of *Lygosoma (Sphenomorphus) necopinatum garutense* nov. subspec. (pp. 133, 139).

of three and a half dorsal. Preanal scales somewhat enlarged. Tail thick, partly regenerated.

Limbs short, pentadactyle. The adpressed forelimb reaches to between the ear and the eye-opening; the hindlimb is as long as the distance from

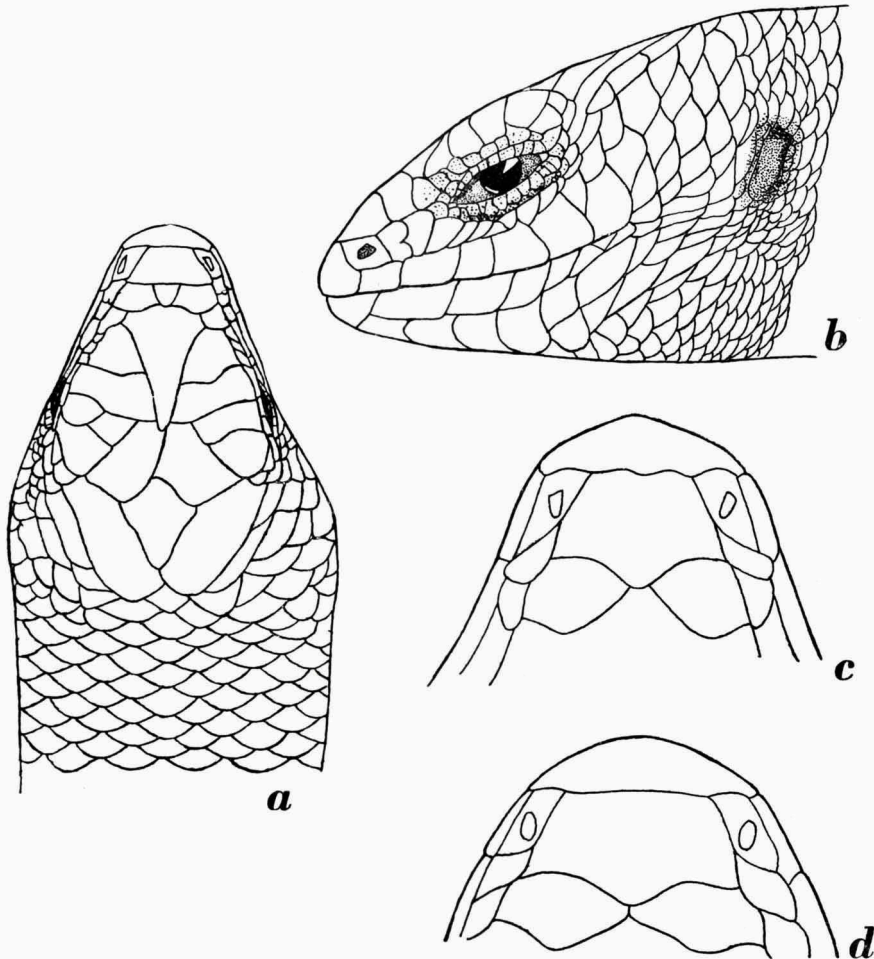


Fig. 2a. *Lygosoma (Sphenomorphus) vanheurni* nov. spec., type, upper view of head; *b*, id. side view; *c*, snout of *Lygosoma (Sphenomorphus) temminckii* Dum. & Bibr., with short suture between rostral and frontonasal; *d*, snout of *Lygosoma (Sphenomorphus) necopinatum necopinatum* nov. spec. et subspec., type, showing the broad suture between rostral and frontonasal. *a* and *b*, $\times 6$; *c*, $\times 10$; *d*, $\times 20$.

the forelimb to the nostril. When adpressed the limbs do not meet; they are separated by a distance equal to about once and a half the length of the foot. Digits rather short and thick; the fourth toe slightly longer than

the third, covered above by two single scales, followed by four pairs of scales, and from there towards the base three rows of scales (cf. Brongersma, 1942, text-fig. 1c). On the right side 14, on the left side 15 smooth lamellae below the fourth toe.

Back light brown with six longitudinal lines formed by series of dark brown dots; the lines here and there irregular and interrupted. Head above light brown mottled with dark brown. Sides of head dark greyish brown with some pale dots on the upper labials. The sides of the body variegated with greyish brown and whitish spots of irregular shape, here and there the spots are confluent with each other; on the anterior half of the body the greyish brown is preponderant, on the posterior half the whitish colour preponders. Chin dark greyish, faintly mottled with whitish; belly whitish with sparse small grey dots.

Length of head and body 64 mm; tail 44, of which 23½ mm are regenerated; snout to forelimb 19 mm; axilla to groin 38 mm; forelimb 13 mm; hindlimb 17 mm.

The species resembles *Lygosoma (Sphenomorphus) temminckii* Dum. & Bibr. in several respects, but it can be separated from this species, as well as from *Lygosoma (Sphenomorphus) necopinatum* nov. spec. (p. 130) by the arrangement of the scales on the dorsal surface of the fourth toe.

***Lygosoma (Leiolepisma) fuscum spinauris* M. A. Smith (Pl. VI fig. 4)**

Lygosoma (Leiolepisma) spinauris M. A. Smith, Proc. Zool. Soc. Lond., 1927, p. 218, fig.

Lygosoma fuscum, De Jong, Treubia, vol. 12, 1930, p. 116.

1 ♀, Noil Toko, Timor, 1937, leg. P. F. van West, Mus. Leiden, reg. no. 7032.

1 ♂, 2 ♀♀, Timor, leg. Müller & Macklot, Mus. Leiden, reg. no. 7943.

1 ♂, 1 ♀, Samao, leg. Müller & Macklot, Mus. Leiden, reg. no. 7941.

Smith (1927, p. 218) described *spinauris* as a separate species allied to *Lygosoma fuscum* (Dum. & Bibr.) and to *L. bicarinatum* (Macleay). The variation of the six specimens before me brings *spinauris* within the range of variation of *fuscum*. Kopstein (1926, pp. 87–89) pointed out that *Lygosoma fuscum* varies geographically, and therefore, I believe it best to place *spinauris* as a subspecies of *fuscum*. From the typical form it differs chiefly in the smaller size, and in the generally fewer infradigital lamellae. Among the drawings made by the artists accompanying Müller and Macklot to Timor I found a water colour drawing showing the coloration in life (pl. VI fig. 4).

In the female from Samao the scales on the shoulders and on the neck are tricarinate, those on the remaining part of the back are bicarinate. In the other specimens all dorsal scales are tricarinate. The length of the

hindlimb appears to vary according to sex; in the males the hindlimb is longer than in females. In males the adressed hindlimb reaches the axilla, while in females it reaches to the wrist or to between the wrist and elbow. A similar variation is present in the other subspecies too.

The female from Noil Toko contained two eggs, both with well developed shells and without any trace of an embryo.

Table 6

| | scales | lamellae under 4th toe | | head + body | tail |
|-------------------------|--------|------------------------|----|---------------------|------------------|
| | | r | l | | |
| Timor, reg. no. 7032, ♀ | 32 | 24 | 25 | 38 $\frac{1}{2}$ mm | 43 + mm |
| Timor, reg. no. 7943, ♂ | 30 | 25 | — | 40 | 59 |
| ♀ | 32 | — | 26 | 44 | — |
| ♀ | 32 | 25 | 26 | 38 | 39 ¹⁾ |
| Samao, reg. no. 7941, ♂ | 32 | 29 | 28 | 45 | — |
| ♀ | 32 | 24 | 24 | 40 | — |

***Lygosoma (Leiolepisma) metallicum* (O'Shaughn.)**

1 ♂, Honolulu, Hawaiian Ids., L.1919, leg. Jhr. W. C. van Heurn, Mus. Leiden, reg. no. 4866.

As far as I know, the species has not yet been recorded from the Hawaiian Islands. Probably it has been introduced in these islands, for this locality is widely separated from the area inhabited by this species (Australia, Tasmania).

The specimen has 28 scales round the middle of the body; right 26, left 25 lamellae beneath the fourth toe; right 7, left 6 supraciliaries; right the fourth, left the fifth upper labial below the orbit. The frontal is as long as the single frontoparietal; a small interparietal is present. 54 scales from the parietals to a line connecting the posterior sides of the thighs. The adressed hindlimb reaches to between the wrist and the elbow.

Head and body 41 mm; tail (partly regenerated) 63 mm; snout to forelimb 15 mm; axilla to groin 22 $\frac{1}{2}$ mm; forelimb 12 $\frac{1}{2}$ mm; hindlimb 18 mm.

The body is olive above, more bronze on the head. Back with three rather faint longitudinal grey bands, formed by the adjoining borders of the scale rows, and with irregular series of black dots. A light line from the supraciliar region along the sides of the body to the hindlimb. Sides with

1) tail regenerated.

a blackish brown lateral band starting from the rostral and passing through the eye; below this band the sides are bluish grey. The lower side of head and body is also bluish grey with a few black dots.

Lygosoma (Leiolepisma) relictum Vinc. (Pl. VI fig. 3)

2 ex., Java, leg. (Kuhl and) Van Hasselt, Mus. Leiden, reg. no. 2541.

This species was described by Vinciguerra (1892, p. 524) from Engano Id.; Boulenger (1895, p. 616) recorded it from Sipora in the Mentawai Ids., while De Rooij (1915, p. 271) added the islands of Simalur and Nias to the localities. All these islands belong to the chain lying off the west coast of Sumatra. Remarkably enough the species has not been found in Sumatra¹⁾. As a species restricted to this island chain it was considered to be of some zoogeographical importance (De Beaufort, 1926, p. 75).

Great was my surprise, therefore, when I discovered in our herpetological collections two specimens with the label "Java, K. v. H." The initials are those of the zoologists Kuhl and Van Hasselt, who made extensive collections in W. Java about 120 years ago. In the case of specimens from such old collections, one is always inclined to doubt the locality record, at least when the species has not been mentioned from the locality in recent literature. Therefore, I searched for further evidence to justify the label. Among the drawings made by the artists, who accompanied Kuhl and Van Hasselt, I found two water colours, which both show a specimen of *Lygosoma (Leiolepisma) relictum*; these drawings are marked with the same manuscript name under which the specimens were entered in the register of our herpetological collection, and which is also mentioned on the label. Although the drawings show some slight errors (e.g., the interparietal is not separated from the frontoparietal, and the supraoculars are not drawn as separate shields) there can be no doubt that they were made from a specimen of *relictum*. The most interesting fact is, however, that on both drawings the locality, where the specimen was taken, is noted, viz., Panimbang, and on one of the drawings a note in pencil reads: "près de la mer". Panimbang was the name of a district bordering the Pepper Bay in the Bantam Residency (western extremity of Java) (Aardrijkskundig en Statistisch Woordenboek van Nederlandsch Indië, vol. 2, 1869, p. 685. Amsterdam, P. N. van Kampen). This region was visited by Van Hasselt (August 1822—September 1823) after Kuhl's death. Therefore, I see no reason to doubt the indication "Java" on the label of the specimens in our collection, and one may even assume with some certainty, that the speci-

1) That Smith (1937, p. 225) mentions the species from Sumatra means only that this author considers Sumatra and the Islands off its west coast as a whole.

mens were collected in Bantam. The only error in the label is that it mentions Kuhl as one of the collectors, for Kuhl had died already in September 1821, thus a year before Van Hasselt started on his journey to Bantam. It must be remembered, that the collections made by Kuhl and/or Van Hasselt were always considered as a whole, and the names of both collectors were mentioned on all labels.

Lygosoma (Leiolepisma) relictum, therefore, loses its position as a species restricted to the West Sumatran Islands and therewith much of its zoogeographical importance. On the other hand the inclusion of Java in the range of this species makes the distribution even more puzzling¹). In all probability the species will turn up in Sumatra too.

Both specimens have 20 scales round the middle of the body; one has 17, the other 16 lamellae under the right fourth toe. The fifth labial is below the centre of the orbit, instead of the fourth as described by De Rooij (1915, p. 270). Length of head and body 40 mm and 33 mm. The larger specimen is a female with two young in the uterus; both are well developed, and probably would soon have been born.

Both drawings apparently show the same specimen, or what is more likely, one of the drawings is a copy of the other. Still they show some slight differences in coloration. In the one reproduced in pl. VI fig. 3 the tail has a slightly more reddish tint than in the other.

Ablepharus boutonii (Desj.)

The Leiden Museum possesses two jars with specimens of *Ablepharus boutonii* from Samoa Id., one of which contains six specimens of *Ablepharus boutonii leschenault* (Coct.), while the other contains thirteen specimens of *Ablepharus boutonii schlegelianus* (Mertens). Several years ago my attention had already been attracted by these specimens, but the fact that both sets were labelled "Samao" made me believe that some error had been made, as the occurrence of two different subspecies in one and the same locality was unlikely²), and, therefore, I paid no further attention to these specimens. Recently, however, I found decisive proofs, that both subspecies had indeed been collected in the island of Samoa. Two drawings, each showing one of the subspecies (pl. VI figs. 2, 5), and both marked Samoa are preserved in our Museum. Moreover I found the

1) In 1934 I (Brongersma, 1934, p. 198) described a young specimen of a snake (*Elaphe subradiata enganensis* (Vinc.)), which was said to have been taken in Java, while the subspecies was believed to be restricted to Engano Id. At that time I doubted the locality record, but perhaps it was correct after all.

2) It is at least a *conditio sine qua non* that forms which are to be recognized as subspecies do not occur in the same locality.

notes made by Salomon Müller during his sojourn in the eastern part of the Indo-Australian Archipelago. Among these, two sheets bear the same (manuscript) names mentioned on the drawings. Müller describes both forms from Samoa Id., and mentions that they occur on Timor too. I believe that there can be no doubt about the occurrence of these two subspecies in these islands, at least in 1829 when they were visited by Müller. The fact is certainly very remarkable, and it will be interesting to learn what happened to these subspecies since they were observed by Müller. From Müller's notes it is clear that both occur in the same habitat (cf. p. 147). The specimens will be discussed under the respective subspecies.

Mertens (1934, p. 41) mentioned already, that *Ablepharus boutonii balinensis* (Barb.) occurs in Madura Id., and (l.c., p. 42) that this subspecies was to be expected in Java too. A series of seventeen specimens from Soerabaia and surroundings collected by Jhr. W. C. van Heurn proves this surmise to be correct.

Table 7. *Ablepharus boutonii* (Desj.), range of variation in different subspecies

| | lamellae beneath 4th toe ¹⁾ | | | | | | | | | | | scales round body | | | | | | palpebrals ¹⁾ | |
|----------------------|--|----|----|----|----|----|----|----|----|----|----|-------------------|----|----|----|----|----|--------------------------|----|
| | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 22 | 24 | 25 | 26 | 28 | 30 | 3 | 4 |
| <i>schlegelianus</i> | 12 | 23 | 22 | 7 | 4 | — | — | — | — | — | — | 2 | 35 | — | 3 | — | — | 78 | 2 |
| <i>leschenault</i> | — | — | 4 | 4 | 4 | 5 | 4 | 9 | 3 | — | 1 | 1 | 6 | 1 | 6 | 2 | 2 | 31 | 5 |
| <i>balinensis</i> | — | — | — | — | 4 | 11 | 14 | 6 | 1 | — | — | — | — | — | 14 | 5 | — | 20 | 17 |
| <i>renschii</i> | — | — | — | — | 4 | 1 | — | 2 | — | — | — | — | 2 | — | 2 | — | — | 6 | 2 |
| <i>novae-guineae</i> | — | — | — | — | — | 1 | 2 | 6 | 3 | — | — | 6 | 1 | — | — | — | — | 14 | — |

| | supraciliaries ¹⁾ | | | | contact frontal/frontoparietal ²⁾ | | | prefrontal suture ³⁾ | | | | | loreal ¹⁾ length: height | | | upper labials in front of subocular ⁴⁾ | | | | |
|----------------------|------------------------------|----|----|---|--|----|------|---------------------------------|----|---|---|------|-------------------------------------|-----|-----|---|-----|-----|-----|-----|
| | 3 | 4 | 5 | 6 | s. | p. | sep. | r | l | p | f | sep. | l>h | l=h | l<h | 3/3 | 3/4 | 4/4 | 4/5 | 5/5 |
| <i>schlegelianus</i> | 1 | 72 | 7 | — | 25 | 13 | 2 | 18 | 17 | 4 | 1 | — | 12 | 33 | 35 | 1 | 3 | 36 | — | — |
| <i>leschenault</i> | — | 1 | 29 | 6 | 16 | 2 | — | 7 | 11 | — | — | — | 32 | 4 | — | — | — | 14 | 3 | 1 |
| <i>balinensis</i> | — | 3 | 29 | 5 | 7 | 11 | 1 | 10 | 9 | — | — | — | 30 | 8 | — | — | — | 18 | 1 | — |
| <i>renschii</i> | — | 2 | 6 | — | 4 | — | — | 1 | 3 | — | — | — | 7 | 1 | — | — | — | 3 | 1 | — |
| <i>novae-guineae</i> | — | 1 | 10 | 3 | 3 | 3 | 1 | 4 | 2 | — | — | 1 | 12 | 1 | — | — | 1 | 6 | — | — |

1) Total number of cases of left and right sides together.

2) s: shields forming a suture; p: shields meeting in one point only; sep.: shields separated.

3) r: the proximal end of the suture between the prefrontals lies to the right of

Ablepharus boutonii leschenault (Coct.) (Pl. VI fig. 5)

Ablepharus boutonii leschenault, Mertens, Zool. Jahrb. Syst., vol. 61, 1931, p. 156, pl. 3 figs. 22, 23.

- 3 ♂♂, 3 ♀♀, Samao, leg. S. Müller, Mus. Leiden, reg. no. 2520.
 2 ♂♂, 1 ♀, Wetar, leg. Schädler, Mus. Leiden, reg. no. 5531.
 1 ♂, 1 juv., Lowololo, Lomblen, 26.VI.1909, leg. Van de Sande, Zool. Mus. Amsterdam.
 1 ♀, Endeh, S. Flores, 1930, leg. Jhr. W. C. van Heurn, Mus. Leiden, reg. no. 7951.
 1 ♂, Endeh, S. Flores, 1888, leg. M. Weber, Zool. Mus. Amsterdam.
 2 ex., Sikka, E. Flores, 1888, leg. M. Weber, Zool. Mus. Amsterdam.
 3 ♀♀, Great Bastard Id., leg. Dr. H. ten Kate, Mus. Leiden, reg. no. 4881, 4881a.

The variation of the different characters is indicated in table 7. The specimens from Samao do not show important differences from those from Flores, except that the number of lamellae beneath the fourth toe appears to be somewhat more to the lower side of the range of variation¹⁾. In his notes Müller wrote in April 1829: "Einzeln in dem durch die Brandung an sandige Ufern geworfenen Unrath auf der Nordküste von Samao; noch seltener auf Timor." (Few in the flotsam washed ashore by the surf on the sandy beaches on the north coast of Samao; rarer still on Timor). Pl. VI fig. 5 shows the coloration in life from a drawing, probably made by P. van Oort, who accompanied Müller on his travels in the East Indian Archipelago.

Ablepharus boutonii schlegelianus (Mertens) (Pl. VI fig. 2)

Ablepharus boutonii schlegelianus, Mertens, Zool. Jahrb., Syst., vol. 61, 1931, p. 151, pl. 3 fig. 20).

- 15 ♂♂, 10 ♀♀, 2 juvs., Timor, leg. S. Müller, Mus. Leiden, reg. no. 2513.
 6 ♂♂, 7 ♀♀, Samao, leg. S. Müller, Mus. Leiden, reg. no. 2511.

The range of variation of the different characters is indicated in table 7. As was to be expected from the examination of a so much larger series (40 specimens against 4 examined by Mertens) the variation is greater than that indicated by Mertens. Thus the loreal may be longer than high, as long as high, or higher than long (this latter condition in the type and paratype).

Müller wrote in his notes in April 1829: "Diese niedliche Scincus scheint

the distal end, 1: proximal end of suture to the left of distal end; p: prefrontals meeting in one point only; f: right prefrontal fused with frontal; sep.: prefrontals separated.

4) ³/₃: both on left and right side 3 labials in front of subocular; ³/₄: 3 on one side, 4 on the other; ⁴/₄: 4 on both sides; ⁴/₅: on one side 4 on the other 5; ⁵/₅: on both sides 5.

1) Samao 19-23 (19: 4 ×; 20: 2 ×; 21: 3 ×; 22: 2 ×; 23: 1 ×), Flores 22-24 (22: 2 ×; 23: 2 ×; 24: 4 ×), Great Bastard 24-25 (24: 2 ×; 25: 3 ×), Lomblen 23-27 (23: 1 ×; 24: 1 ×; 27: 2 ×), Wetar 20-24 (20: 2 ×; 21: 1 ×; 22: 1 ×; 24: 2 ×).

besonders die sandige Ufern der See zu lieben. Ich fand ihn äusserst häufig am nördlichen Seestrande auf der Insel Samao, wo er sich besonders in den von der Brandung ans Ufer geworfenen Unrath, als Gehölz, Blättern aufhält..... Auf Timor traf ich ihn nur einzeln an" (This nice little *Scincus* apparently prefers the sandy beaches. I found it to be extremely common on the northern beach on the island of Samao, where it occurred in the flotsam such as logs, leaves, washed ashore by the surf... On Timor I found a few specimens only). This latter statement concerning Timor seems to be in contradiction with the large series collected by him (27 specimens, not counting those distributed to other museums), but it must be borne in mind that the notes were written in April 1829, and that Müller left Timor only in November of that year.

***Ablepharus boutonii renschi* (Mertens)**

Ablepharus boutonii renschi, Mertens, Zool. Jahrb., Syst., vol. 61, 1931, p. 154, pl. 3 fig. 21.

1 ♂, 1 juv., Kambera, Soemba, III.1925, leg. Dr. K. W. Dammerman, Zool. Mus. Amsterdam.

1 ♀, 1 ♀, Soemba, leg. P. J. Lambooj, received XI.1931, Zool. Mus. Amsterdam.

The range of variation is indicated in table 7.

***Ablepharus boutonii balinensis* (Barb.) (text-fig. 3)**

Ablepharus boutonii balinensis, Mertens, Zool. Jahrb., Syst., vol. 61, 1931, p. 167, pl. 3 figs. 33, 34.

1 ♀, 1 juv., South coast of Madoera, II.1907, leg. Dr. P. Buitendijk, Mus. Leiden, reg. no. 6347.

1 ♂, 2 ♀ ♀, Soerabaia and surroundings, E. Java, second half of 1933, leg. Jhr. W. C. van Heurn, Mus. Leiden, reg. no. 6756.

2 ♂ ♂, 4 ♀ ♀, 1 juv., Soerabaia and surroundings, E. Java, 1933-1934, leg. Jhr. W. C. van Heurn, Mus. Leiden, reg. no. 6755.

1 ♂, 1 ♀, Soerabaia, E. Java, 1935, leg. Jhr. W. C. van Heurn, Mus. Leiden, reg. no. 7948.

3 ♀ ♀, 1 juv., Soerabaia, E. Java, 1933, leg. Jhr. W. C. van Heurn, Mus. Leiden, reg. no. 7949.

1 ♂, surroundings of Soerabaia, E. Java, 1938-1939, leg. Jhr. W. C. van Heurn, Mus. Leiden, reg. no. 7950.

The range of variation of the different characters is indicated in table 7. The variation proves to be somewhat greater than that mentioned by Mertens, who examined 8 specimens. Thus the number of scales round the body may be as high as 28; the number of lamellae beneath the fourth toe varies from 20 to 25.

The colour pattern of all but one specimen agrees with that of the type specimen in that the dark parietal bands do not fuse with the occipital

band. The young specimen from Madoera is more or less intermediate between these specimens and that figured by Mertens (1931, pl. 3 fig. 33)

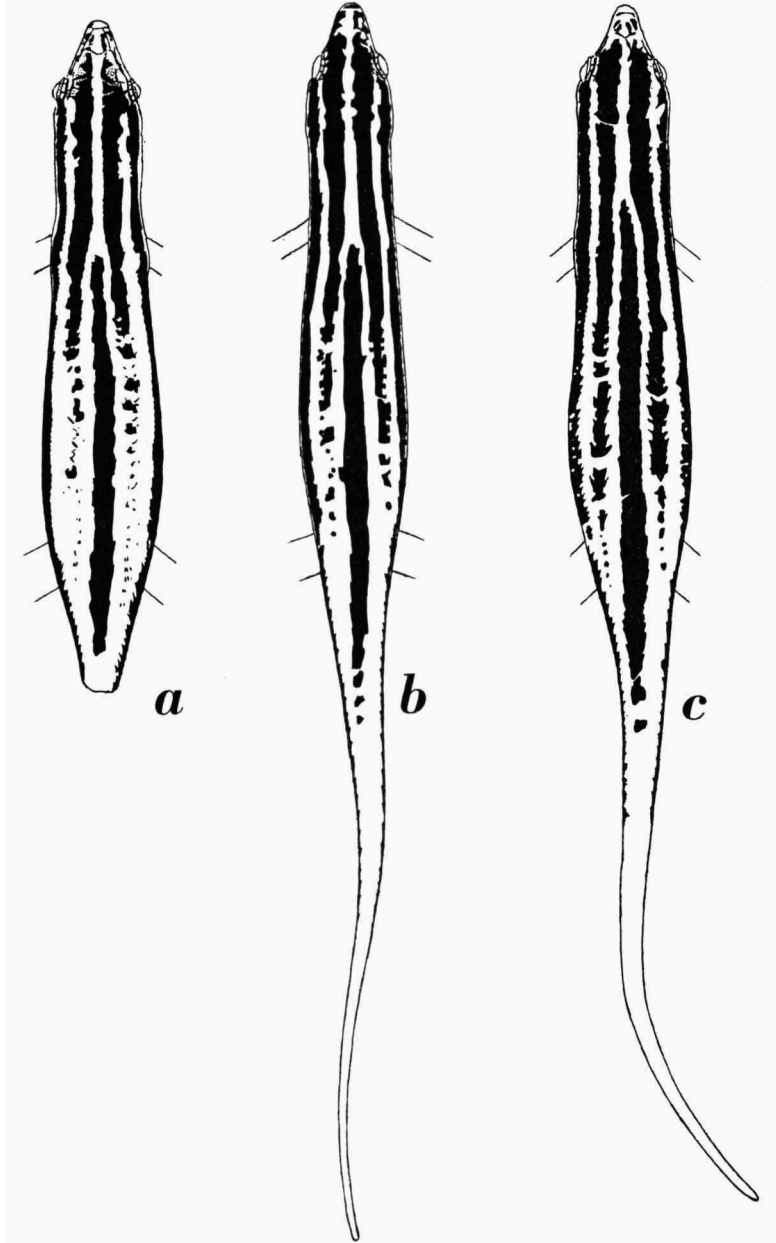


Fig. 3. *Ablepharus boutonii balinensis* (Barb.), drawings to illustrate the colour pattern. *a*, reg. no. 7949; *b*, reg. no. 7950; *c*, reg. no. 6755. All figures $\times 2$.

as the parietal bands are connected with the occipital band, but are continued posteriorly as distinct separate bands. The length of the parietal bands is variable. In some specimens these bands reach only to the level of the 24th vertebral scale (counted from the parietals), in others the bands reach to the 33rd scale. The bands are either followed by a series of black spots, which diminish in size towards the sacral region, or they are continued as a tapering black line, which shows very narrow interruptions. Thus some of the specimens resemble specimens of *Ablepharus boutonii leschenault* (Coct.), the type of which was said to have come from Java. Dr. F. Angel of the Paris Museum kindly re-examined the type of *leschenault* for me, as I believed that it was after all possible that this specimen really was collected in Java, and that it might prove to be a specimen of *balinensis*. However Mr. Angel writes: "Le dessin d'ensemble des bandes dorsales est bien semblable à celui des figs. 22 et 23 de Mertens, mais les bandes parietales ont, vers l'arrière, des bord irréguliers, légèrement déchiquetés qui donnent naissance à quelques rares et fines interruptions (visibles sous la loupe). Elles se dissocient dans leur quart postérieur, prenant l'allure tachetée que l'on voit dans la fig. 25, pl. 3, de Mertens. En arrière, elles atteignent la base de la queue. Malgré ces petites variations, mon opinion est que cet animal ne peut être rapproché qu'aux figs. 22 et 23 c'est à dire à l'*Ablepharus boutonii leschenault* de Mertens".

Comparing this description to the specimen of which the colour pattern is shown in textfig. 3c it still seems possible to me that the type of *leschenault* is an extreme variant of the subspecies inhabiting Java, Madoera and Bali. It is clear that this problem can be settled only by a direct comparison of the specimens.

The range of *Ablepharus boutonii* (Desj.) in Java apparently is greater than proved by the present specimens, for in the manuscript notes by the late Dr. F. Kopstein I read that he was convinced of having seen this species on the dunes at the mouth of the river Bogowonto (South coast of Java).

***Ablepharus boutonii novae-guineae* (Mertens)**

Ablepharus boutonii novae-guineae, Mertens, Zool. Jahrb., Syst., vol. 61, 1931, p. 141, pl. 2 fig. 15.

3 ♂♂, 4 ♀♀, Gebeh Id. and/or Gagi Id., leg. Bernstein, 1866, Mus. Leiden, reg. no. 7968.

These specimens were collected by Bernstein during his last voyage. Unhappily there is no certainty whether they were collected on Gebeh Id., on Gagi Id., or on both these islands. They agree well with the description by Mertens; only in one specimen the colour pattern is less distinct, and

in this as well as in its number of scales (24) it approaches to *Ablepharus boutonii pallidus* (Mertens, 1931, p. 144, pl. 2 fig. 16). The range of variation is indicated in table 7.

The text-figures have been drawn by Mr. P. van 't Zelfde.

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EXPLANATION OF PLATE VI

- Fig. 1. *Lygosoma (Sphenomorphus) florense barbouri* (Dunn), from Samao, pinx. P. van Oort (1829).
Fig. 2. *Ablepharus boutonii schlegeliana* (Mertens), Samao.
Fig. 3. *Lygosoma (Leiolepisma) relictum* Vinc., Panimbang, Bantam Residency, W. Java.
Fig. 4. *Lygosoma (Leiolepisma) fuscum spinauris* M. A. Smith, Timor.
Fig. 5. *Ablepharus boutonii leschenaulti* Coct., Samao.

The drawings reproduced on this plate were made by the artists accompanying the zoologists, who more than a century ago, travelled in the Indo-Australian Archipelago to make collections for the Leiden Museum.

Figs. 1—2, 4—5 were made during the visit to Timor and neighbouring islands (1828—1829); fig. 1 is signed by P. van Oort, and probably figs. 2, 4—5 were made by the same artist.

Fig. 3 was made during Van Hasselt's visit to the Pepper Bay in W. Java (1822—1823), and probably was drawn by J. A. Bik.

