

The shell-less slugs of Seychelles (Veronicellidae and Urocyclidae)

Justin Gerlach

The Nature Protection Trust of Seychelles
53 River Lane Cambridge CB5 8HP, U.K.

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ABSTRACT

Four shell-less slugs from the Seychelles are known: three veronicellids are considered native, the single urocyclid species is probably an introduced species. The four species are here described, commented and figured and a key for identification is provided.

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INTRODUCTION

The Seychelles islands support a diverse fauna of terrestrial molluscs, however, only four species of shell-less slugs are known. Of these, three are native species belonging to the family Veronicellidae. The fourth is an introduced urocyclid slug. The four species are described and illustrated below with short notes on their behaviour and a key for identification.

SYSTEMATIC ACCOUNT

subclass G Y M N O M O R P H A

order SOLEOLIFERA

Family Veronicellidae
=Vaginulidae

Genus *Semperula*

This genus is predominantly Asian but one species reaches Seychelles, Madagascar and the Mascarenes.

Semperula maculata Templeton, 1858

(Figs 5-7)

Vaginula parva Heynemann, 1885

Vaginula plana Simroth, 1913

This species is less variable than the other Veronicellidae with only three recognisable colour forms. It is light brown with varying degrees of light spotting. A pale dorsal stripe may be present. The underside is pale brown, sometimes with dark speckling toward the posterior part. The tentacles are dark blue. It is 22-35 mm long, extending to 42 mm.

Behaviour. This species is an un-specialised detritivore, consuming decaying leaves, lichens and fungi. It is slow moving and for defence relies on the copious production of extremely sticky mucus.

The Veronicellidae have been identified after dissections with reference to the review by Hoffmann (1925). The western Indian Ocean genera have not been reviewed recently and generic changes will probably be needed in the future. The single urocyclid species was identified by Dr. J.L. Van Goethem.

Distribution. This species is known from Madagascar, Rodrigues, Seychelles, Sri Lanka, Malaysia, Singapore, Indonesia and the Philippines. In Seychelles it has been identified from Mahe and Silhouette. It appears to be restricted to mid-altitude sites (100-250 m above sea level) and has been recorded in secondary forest and gardens.

The Seychelles form has been described as *Vaginula parva* Heynemann, 1885 and *Vaginula plana* Simroth, 1913.

Genus *Vaginula*

This is primarily a western Indian Ocean genus (Seychelles, Madagascar and Comores) although one Indonesian species (*V. bleekeri*) has been referred to the genus (Hoffmann, 1925).

Vaginula seychellensis (Fischer, 1871)

(Figs 10-21)

Vaginula bicolor Heynemann, 1885

Vaginula elegans Heynemann, 1885

Vaginula tristis Heynemann, 1885

This species is highly polymorphic with at least twelve recognisable colour forms. It is a large species (40-74 mm contracted, up to 155 mm extended length). Its tentacles are dark blue and its background colour varies from pale grey to pale brown. On the dorsal surface this is often obscured by dark brown or

black spots or streaks. There may be beige, reddish, dark brown or black patches covering most of the body. The underside tends to be less heavily marked than the dorsum but may be spotted.

Behaviour. In general behaviour is as for *Semperula maculata*. It is often seen feeding on the male flowers of the coco-de-mer palm (*Lodoicea maldivica*) on Praslin; only the white/grey form has been observed doing this.

Distribution. This species is endemic to Seychelles and has been recorded on the islands of Mahe, Silhouette and Praslin. It is widely distributed on these islands, being found from coastal areas to 700 m above sea level in habitat from coastal forest and suburbs to primary palm and mist forest. Some forms have been described as *Vaginula bicolor* Heynemann, 1885, *V. elegans* Heynemann, 1885 and *V. tristis* Heynemann, 1885.

Vaginula voeltzkowi (Simroth, 1913)

(Figs 24-33)

Vaginula braueri Simroth, 1913

Vaginula parva Simroth, 1913

Eight colour forms of this polymorphic species can be recognised. The tentacles are usually blue. Most forms are pale brown with darker speckling. Some forms may have a darker background colour or may have a reddish overlay. Pigment patterns are highly variable but pale areas tend to be down the mid-line and around the edges. There are two bright yellow variants, one with white spots on the mid-line and edges. The tentacles in these forms are yellow. The underside is always paler than the dorsum and is un-marked. It is 30-50 mm contracted length and up to 63 mm extended length.

Behaviour. As for *Semperula maculata*. The large eggs of this species (elongate 9 mm X 5 mm) have been found in holes in trees 1 m above the ground and under large leaves. The eggs (numbering 20-30) are thick but not shelled. Hatchlings measure 10 mm.

Distribution. This species is found in Madagascar, The Comoros and Seychelles. In Seychelles it has been recorded from Mahe and Praslin where it is

found in a wide range of habitat from sea level to 500 m asl. It has not been located in mist forest. Seychelles forms have been described as *Vaginula braueri* Simroth, 1913, and *V. parva* Simroth, 1913.

subclass P U L M O N A T A
order STYLOMMATOPHORA
Family Urocyclidae

Genus *Leptichnoides*

This is a monotypic genus within the African-Madagascar-Comores subfamily Urocyclinae (Van Goethem, 1977). It was probably introduced to Seychelles (Van Goethem, pers. comm.).

Leptichnoides verdcourtii (Forcart, 1967)

(Figs 1-4)

This is a typical slug with a keeled tail and distinct mantle region. It is pale brown with dark brown, grey and black speckling. The dark marks are usually concentrated into diagonal lines on the tail. There is a small, ovate shell plate within the mantle and a distinct caudal horn.

Behaviour. This species is unusual innusing the depression caused by the pneumostome as a suction cap. When resting it is usually found suspended under leaves, attached by this suction cap. In this pose the tentacles are retracted and the sides of the body contracted over the sole of the foot. It is an omnivorous species and has been observed attacking living snails (*Pachmodus niger* X *velutinus*) in captivity. It is not known whether it is normally predatory in the wild. In captivity it was unable to kill adult snails, but may have been preying on hatchlings. Eggs are spherical, 0.8 mm in diameter. They are laid in clutches of 25-30 and connected by mucous threads. They are thin shelled. Hatchlings measure 2.5 mm and appear 11-18 days after laying.

Distribution. The only Seychelles localities for the species are on Mahe Island. It is widely distributed in natural, secondary and suburban habitat. This species is also found in Mozambique and Zimbabwe; it is believed to be an accidental introduction to Seychelles. It was first recorded on Mahe, in 1986.

REFERENCES

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Key to the species

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| 1. High body, distinct mantle region, lateral pneumostome
Flattened, no distinct regions, ventral pneumostome | <i>Leptichnoides verdcourti</i>
2. (Veronicellidae) |
| 2. Underside spotted
Underside un-spotted | 3.
4. |
| 3. Spots densest in posterior half
Spots all over underside | <i>Semperula maculata</i>
<i>Vaginula seychellensis</i> |
| 4. Colour uniform white/grey
Colour brown to reddish | <i>Vaginula seychellensis</i>
5. |
| 5. Main pale markings on dorsum restricted to a narrow central line
Pale markings absent, scattered or concentrated in three broken lines | <i>Semperula maculata</i>
<i>Vaginula voeltzkowi</i> |

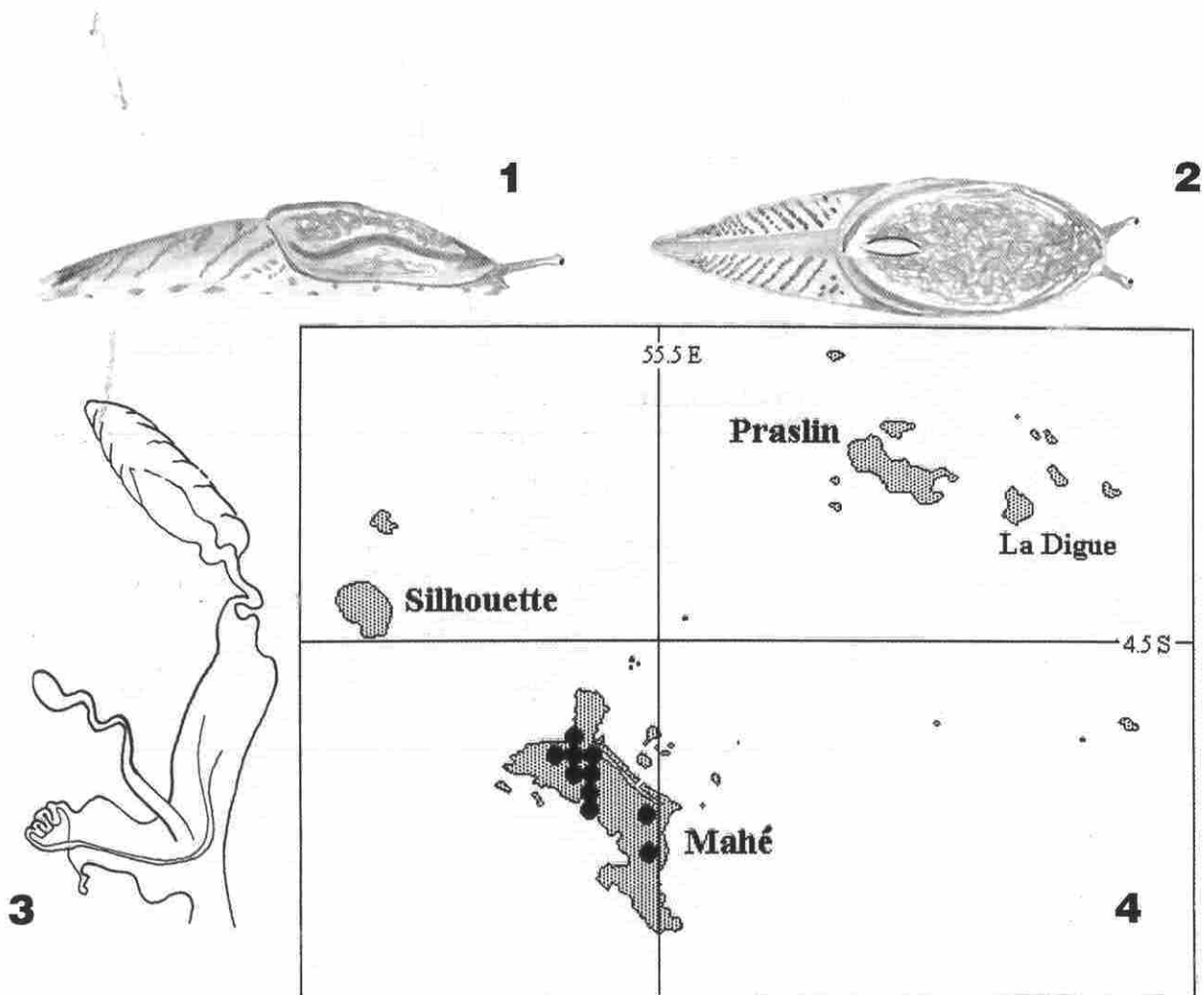


Figure 1-4. *Leptichnoides verdcourti*. 1, 2 - lateral and ventral view; 3 - reproductive anatomy; 4 - distribution map.

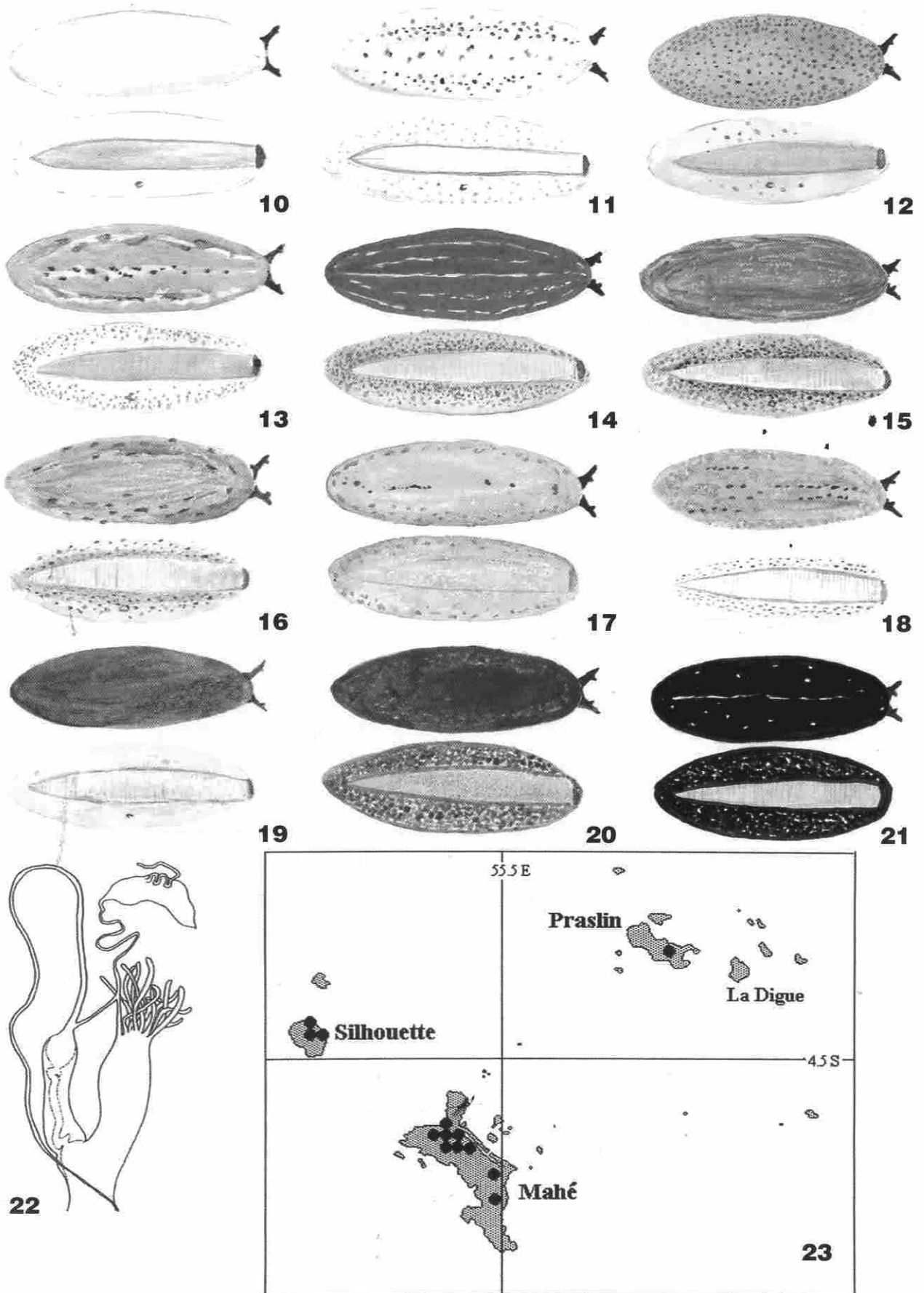


Figure 10-23. *Vaginula seychellensis*. 10-21 - twelve colour forms in dorsal and ventral views; 22 - reproductive anatomy; 23 - distribution map.

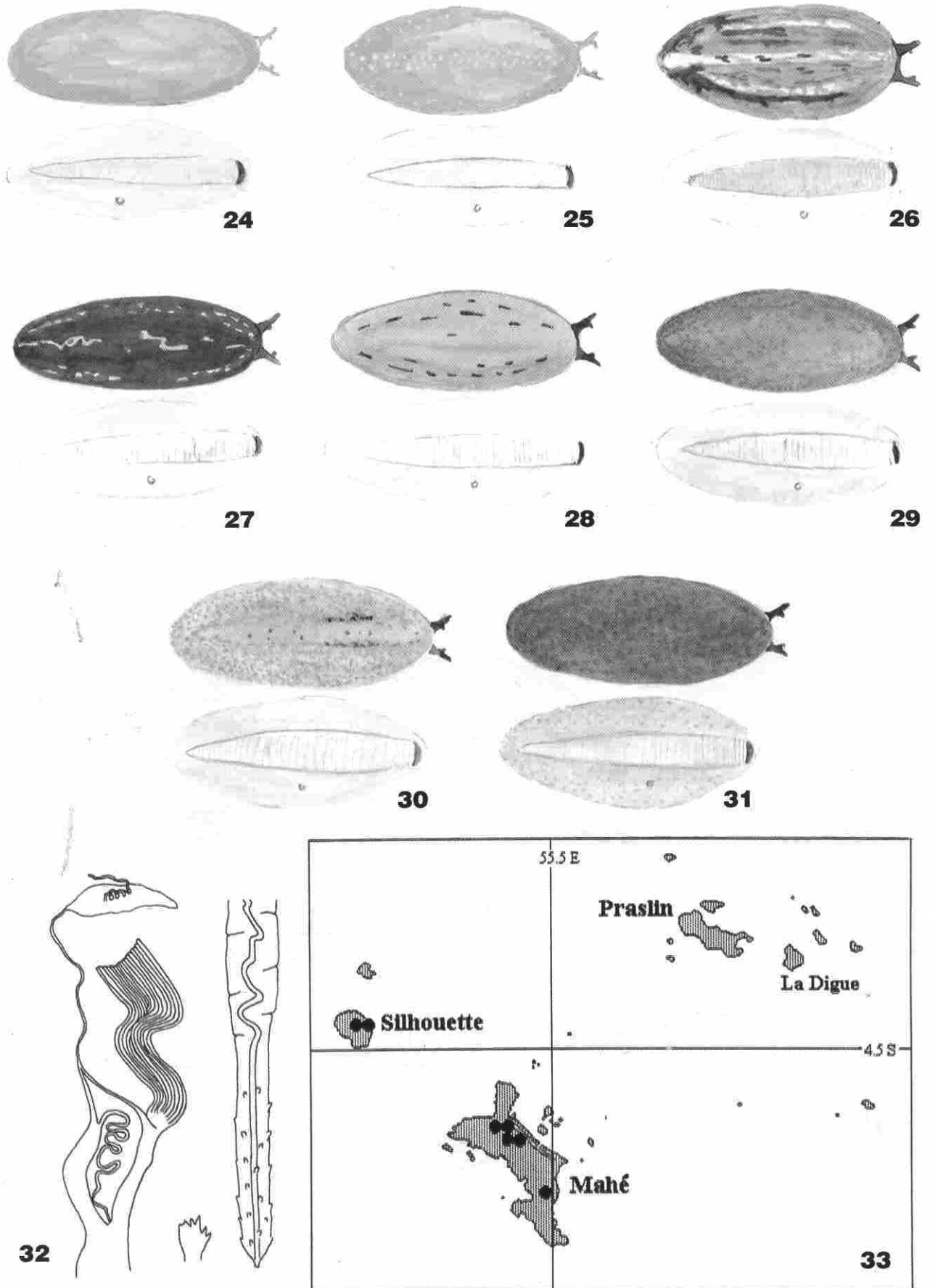


Figure 24-33. *Vaginula voeltzkowi*. 24-31 - eight colour forms in dorsal and ventral views; 32 - reproductive anatomy; 33 - distribution map.