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TREUBIA

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Editor's note

It is great that *Treubia* volume 37 can be published in year 2010. Recently, it was difficult to get appropriate papers since animal taxonomy has not been an attractive subject in the field of biology. There was a lack of submitted manuscripts in 2009 that made *Treubia* could not be published in year 2009.

This volume of *TREUBIA* contains five papers of vertebrates and invertebrates. Three papers (nematode, rats and land snail) were from the results of field works in eastern part of Indonesia i.e. West Papua which was rarely explored.

Also, this year Indonesian zoologist' community lost the pioneer and expert in parasite taxonomy, Dr. Sampurno Kadarsan. His name has been used to name new species of leeches, tick, rat, lizard and frog by his successors to acknowledge his impact and contribution. He served as an editor of *Treubia* from 1992 to 1997 and was a proof reader for some years until his permanent retarded eye sight. So, his death was a great lost for all of us especially for the Museum Zoologicum Bogoriense.

Finally, I would like to thank all of the co-editors, referees, computing assistant, secretary and administrative assistant for their collaborative work. I acknowledge financial support from the Director of Research Centre for Biology LIPI to publish this precious journal.

Cibinong, 15 December 2010

Dewi M. Prawiradilaga
Chief Editor

**REDESCRIPTION OF LAND SNAIL
LEPTOPOMA (LEUCOPTYCHIA) LAMELLATUM SYKES, 1903
FROM RAJA AMPAT, WEST PAPUA
(MOLLUSCA, GASTROPODA, CYCLOPHORIDAE)**

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ABSTRACT

The land snail *Leptopoma (Leucoptychia) lamellatum* Sykes, 1903 was reported from the Raja Ampat Islands, West Papua. The type locality of this snail is Waigeo Island, but it also occurs on Salawati island. Based on specimens collected in 2007 and 2008 from Waigeo, Salawati and Batanta, we present a re-description of the shell including new information on body coloration, radular morphology and habitat. The known range of the species is extended to include Batanta Island.

Key words: land snail, *Leptopoma*, description, Raja Ampat, West Papua.

INTRODUCTION

The Raja Ampat islands encompass over 4 million hectares of land and sea area off the far north-western tip of the Papua Province of Indonesia. They consist of approximately 600 islands, including the four largest: Waigeo, Batanta, Salawati and Misool (also known as Batanme) islands (Ammer 2009).

Thirty two species of *Leptopoma* have been reported from New Guinea (including West Papua), eight of these species are from Raja Ampat islands: Waigeo, Batanta, Salawati, and Misool (Tapparone - Caneffri 1883 & 1886, Kobelt 1902, Schepman 1919, Thiele 1931, Wenz 1935, Iredale 1941, Van

Bentham Jutting 1963, Dharma 2005). The systematic relationships of the species in the genus *Leptopoma* from Papua are still not clear yet. Most authors only examined and described the shape, size, sculpture, except Sarasin & Sarasin (1898) who described radula and operculum of the genus *Leptopoma*. Based on shell sculpture Kobelt (1902) recognized four different subgenera of *Leptopoma*, two of them are subgenus *Leptopoma* and subgenus *Leucoptychia*. The subgenus *Leucoptychia* with type species *L. (Leucoptychia) tissotianum* is characterized by axial varices (“varix-artigen Lamellen”), that do not occur in the subgenus *Leptopoma* type species *L. (Leptopoma) vitreum*. Then, in 1903, Sykes described a new species *Leptopoma (Leucoptychia) lamellatum* from Waigeo (or Waigiou). Thiele (1931) and Wenz (1938) only reported *L. (Leucoptychia) tissotianum* from Waigeo without any record of *Leptopoma (Leucoptychia) lamellatum*.

Van Bentham Jutting (1963) listed seven species of *Leptopoma* i.e. *L. massena massena*, *L. papuanum*, *L. decipiens*, *L. latilabre*, *L. multilabre scalare*, *L. multilabre lamellatum* and *L. diplochilus* from Waigeo, Salawati, Misool and placed the *L. (Leucoptychia) lamellatum* from Waigeo and Salawati as a subspecies of *L. multilabre* based on the number of axial ridges. Dharma (2005) presented a photograph of shell and named it *Leucoptychia lamellatum* without any explanation, except the size and the locality is Batanta.

During the EWIN (Ekspedisi Widya Nusantara) expedition in Raja Ampat, conducted by the Research Center for Biology – Indonesian Institute of Sciences in 2007 and 2008, we collected 29 specimens of *Leptopoma* which have axial ridges from Waigeo, Salawati, and Batanta islands (Fig. 1). In this paper we presented shell description by using additional the characters of the animal (head-foot, tentacle) and the radula, as well as its habitat and distribution.



Figure 1. A map of Raja Ampat and the localities of collected snails (indicated by the black spots)

MATERIALS AND METHODS

Samples have been fixed and preserved in 70% ethanol. Shells were measured to 0.10 mm using electronic calliper Mitutoyo. Radula was studied by scanning electron microscopy (SEM) type JEOL model JSM-5310LV. The radula was cleaned enzymatically with proteinase K (Holznagel 1998 *in* Rintelen *et.al.* 2007). All the specimens are deposited at the Museum Zoologicum Bogoriense (MZB), Research Center for Biology - Indonesian Institute of Sciences.

RESULTS & DISCUSSION

Shells of *Leptopoma* that we examined have axial ridges as a main character for the sub genus *Leucoptychia* as explained by Kobelt (1902), and have 9 – 16 axial ridges, similar with *Leptopoma (Leucoptychia) lamellatum* described by Sykes, 1903.

Leptopoma (Leucoptychia) lamellatum Sykes, 1903.

Leptopoma (Leucoptychia) lamellatum Sykes, 1903: 64-67, pl.6.

Material examined: MZB Gst.13.842, MZB Gst. 13.889 (Indonesia. West Papua, Raja Ampat, District Teluk Mayalibit, Pulau Waigeo, Desa Lopintol, 00 18'48.3"S 130 54'03.6"E); MZB Gst. 14.248, MZB Gst. 14.251, MZB Gst. 14.253 (District Selat Sagawin, Pulau Batanta, Desa Wailebet, 00°53' 55.6" S 130°38'31.2" E); MZB Gst. 14.249, MZB Gst. 14.250, MZB Gst. 14.254, MZB Gst. 14.255, MZB Gst. 14.256 (Pulau Batanta, Desa Yenanas, 00°50' 17.7" S 130°53'16.0" E); MZB Gst. 14.252 (District Selat Sagawin, Pulau Salawati, Desa Kaliyam, 00°56' 46.5" S 130°43'0.8" E).

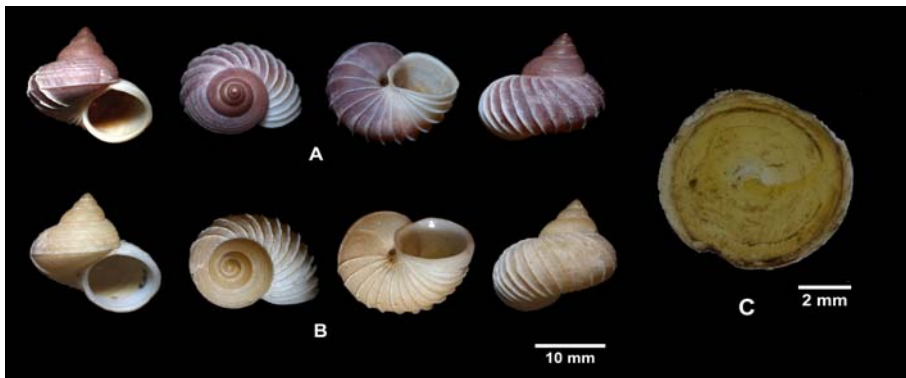


Figure 2. *L (Leucoptychia) lamellatum* A. From Desa Yenanas, Batanta (MZB. Gst.14. 255); B. From Desa Lopintol, Waigeo (MZB. Gst.13. 889); C. Operculum

Shell (Figs. 2,3) usually small, globose conic, white to yellowish, greenish or pale red to purple. Rather thick and somewhat shining. Whorls 5 – 5½, apex smooth, the third whorls sculptured by 4-5 strong spiral ribs that become prominent at the penultimate. About half part of the penultimate there are 9 – 16 axial ridges with regularly distinct (about 1.35 mm) each other. Apex acute and sharp. Spire regularly increasing in size. Body whorl well rounded. Suture deep. Aperture rounded. Apertural lip convex and reflected. Umbilicus slightly open. Operculum multispiral with central nucleus, rounded, rather thick but translucent.

Animal with head black, pale at the base part, sole white to bright grey. Antenna long pointed usually black or orange. Mantle edge straight white with dark band at the margin. Body coiled 4 whorls.

Table 1. Measurements of shell from Waigeo, Batanta, Salawati (in mm), n = number of specimens.

Dimension	Locality		
	Waigeo (n:13)	Batanta (n:15)	Salawati (n:1)
Length of shell	15.49 ± 0.82	14.66 ± 0.78	14.82
Width of shell	15.18 ± 0.88	14.43 ± 0.71	14.52
Length of body whorl	12.00 ± 0.65	11.18 ± 0.49	11.45
Length of aperture	7.49 ± 0.49	7.42 ± 0.46	7.75
Width of aperture	7.42 ± 0.52	7.12 ± 0.43	7.16



Figure 3. Alive snail *L. (Leucoptychia) lamellatum* (A) from Batanta, bright brown head, pointed tentacles, (B) Animal with bright orange tentacles from Batanta, (C) from Waigeo (pale sole)

Radula (Fig. 4) Taenioglossate, length of radular ribbon is about 6 mm. Central tooth has 5 cusps, median cusp is squarish flanked by 2-3 accessory very smaller cusps that taper in size. Both inner and outer lateral tooth has 4 cusps, consist 1 squarish cusp and 3 smaller triangular cusps. Marginal teeth spoon-shape, with 3 cusps.

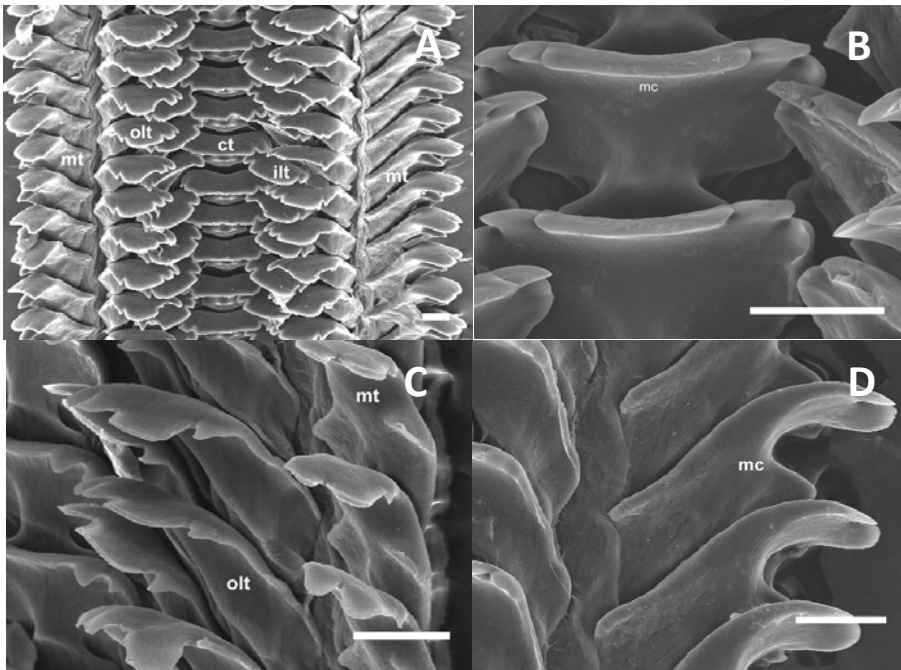


Figure 4. Radula of *L. (Leucoptychia) lamellatum* from Desa Lopintol, Waigeo (MZB. Gst.13 889): (A) Radula ribbon, (B) Central tooth, (C) Lateral and marginal tooth, (D) Marginal tooth (scale bar = 50 μ m)

Habitat Usually found in leaf litter on the ground in secondary forests. Sometimes climbing and attached on the surface of the leaves or trunks of the trees.

Distribution Waigeo, Salawati, Batanta.

Remarks The shell of *L. (Leucoptychia) lamellatum* is easily recognized by its axial ridges. The shell size of *L. (Leucoptychia) lamellatum* from Waigeo, Batanta, Salawati that we examined (see Table 1) are larger compared to that of *L. multilabre scalare* from Waigeo studied by Van Benthem Jutting (1963) (also see Table 2).

Table 2. Comparison of shell size and axial ridges number of *Leptopoma*

Species	Characters		
	Shell Size (mm)		Axial ridges number
	Height	Width	
<i>L. multilabre</i>	-	-	5
<i>L. scalare</i>	9.5	9-11	12
<i>Leucoptychia tissotiana</i>	13	max 12.5	12
<i>L. (Leucoptychia) lamellatum</i>	16	max 16	12
<i>L. multilabre multilabre</i>	12-14	12-14	3-5
<i>L. multilabre scalare</i>	9.5-13.5	11-15	12-14
<i>L. multilabre lamellatum</i>	16	16	± 12

Van Benthem Jutting (1963: 672) also discussed that the differences between so-called *L. scalare* (see Adams 1865), *L. tissotianum* (see Crosse 1879) and *L. lamellatum* with *L. multilabre* (see Lamarck 1839) is not only the size but also the number of axial ridges behind the peristome (see Table 2) that varies from 3 or 5 axial ridges in *L. multilabre multilabre*, 12-14 in *L. multilabre scalare*, and 9 – 16 in *L. (Leucoptychia) lamellatum*. Sykes (1903:66) also stated that *L. (Leucoptychia) lamellatum* is closely related to *L. scalare* but much larger and slightly depressed. The smaller size of *L. multilabre scalare* H.Adams, 1865 from Waigeo was also mentioned by Van Benthem Jutting (1963) who noted that the size is between 9.5 to 13.5 mm height (see Table 2).

The radula is typical of the genus *Leptopoma* presented by Sarasin & Sarasin (1899), for *L. (Leucoptychia) lamellatum* the figure of its radula was

presented here for the first time and it is similar with *L. vitreum* described by Sarasin & Sarasin (1899).

The snail *L. (Leucoptychia) lamellatum* is common in Raja Ampat, however, it does not occur in Misool island. The occurrence of *L. (Leucoptychia) lamellatum* in Batanta only noted by Dharma (2005) without any detail information and here we extend the known range in Batanta (also see material examined). We assumed that Waigeo, Salawati, Batanta are suitable for this snail. In general Waigeo is richer in species diversity of *Leptopoma* than other islands. Five species have been listed from Waigeo, two species from Misool, three species from Salawati, and only one species from Batanta (Adams 1865, Tapparone - Canefri 1883, Kobelt 1902, Sykes 1903, Thiele 1931, Wenz 1938, Van Benthem Jutting 1963). The absence of *L. (Leucoptychia) lamellatum* in Misool is still in question and should be studied further to figure out its distribution in Papua.

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This study was supported by the Research Center for Biology – Indonesian Institute of Sciences (LIPI). We are very grateful to reviewers who read and made suggestions on this manuscript. Many thanks also to Dewi Susan and team of EWIN I-II for collecting the specimens, and to Kartika Dewi for taking SEM photographs.

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OBITUARY

Dr. Sampurno Kadarsan



Late Dr. Sampurno Kadarsan passed away in Bandung on 17 September 2010 at the age of 81 years old. He was survived by his wife and four married daughters. He was born in Surabaya on 11 August 1929. However, he lived in Bogor for much of his time.

Education

He entered Diploma in biology in 1955 under the Ministry of Agriculture. Then, he joined the University of California, Berkeley – USA and achieved BSc. degree in Entomology & Parasitology in 1959. Upon returning to Indonesia, he undertook further study at Bandung Institute of Technology (ITB) and achieved his first degree in biology in 1964. Then, he got an opportunity to enter the University of Maryland, College Park, USA for postgraduate study and achieved his PhD degree in 1971.

Working Career

He started working in the division of Marine Fishery (*Djawatan Perikanan Laut*) in Jakarta. Then, he moved to the division of Nature Research (*Djawatan Penyelidikan Alam*) in Bogor as an assistant in biology. In 1960 he became the director of Museum Zoologicum Bogoriense, under the Centre for Nature Research Institute (*Lembaga Pusat Penyelidikan Alam*). In 1977 he became a senior professor at the Fakulti Perubatan, Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia. He became a senior scientist at the National Biological Institute-Indonesian Institute of Sciences (LIPI) in 1981. In 1986 he was the Director of the Research & Development Centre for Biology and Head of the Indonesian Botanic Gardens, LIPI. He achieved Principle Scientist in 1990. Since 1993 he obtained professorship in parasitology at the Faculty of Veteriner – Bogor Agriculture University. He was the editor of journal of *Treubia* from 1992 to 1997, and remained as a proof reader until 2007.

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