

Notes on New Caledonian chitons I
The species described by St.-M. Souverbie

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INTRODUCTION

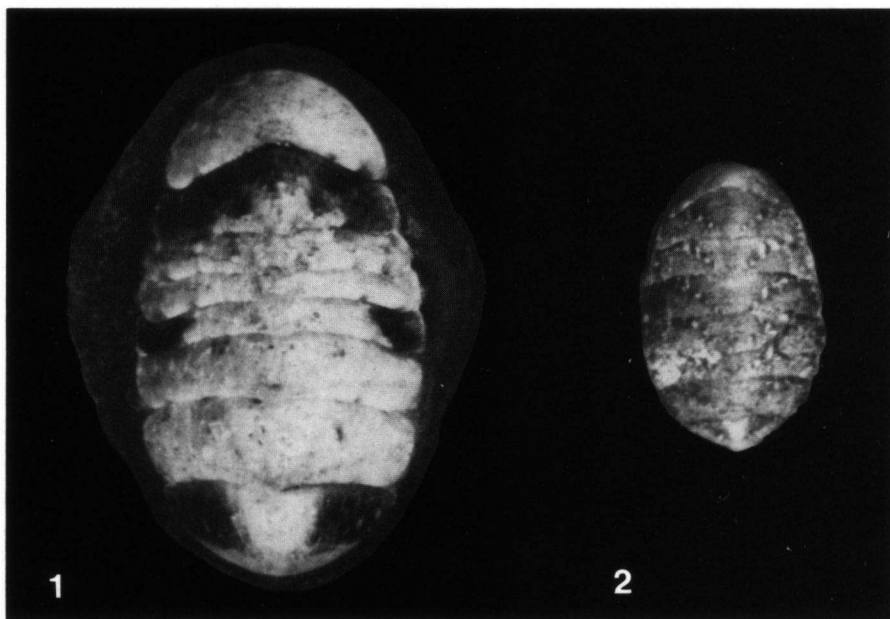
The French malacologist Souverbie was born in New York in 1815. In 1853 he was appointed director of the Museum d'Histoire Naturelle de Bordeaux (France); he held this position until his death in January 1891.

In 1858 he started a series of papers in the Journal de Conchylogie entitled "Descriptions d'espèces nouvelles de l'Archipel Calédonien". More than twenty years later, in 1879, the last part of this series appeared. Most of the material used for this series was collected by the missionaries Montrouzier and Lambert, the former also being the co-author of parts of most articles. In the papers published by Souverbie and Montrouzier each new species was described by either the former or the latter, so, strangely enough, they accepted separate responsibility in describing species. In the 15th article of Souverbie, published in July 1866, with Montrouzier as co-author (13th article), this is also the case. Here, among other things, Souverbie described five new species of chiton from New Caledonia. In doing so he was the first to describe chitons from this area.

Of these five taxa (four based on unique specimens) so far only *Chiton discolor* Souverbie, 1866, was recognised as a valid species. *Chiton insculptus* Souverbie, 1866 (renamed *Chiton montrouzieri* by Souverbie in 1873) was supposed to be a junior synonym of *Tonicia (Lucilina) lamellosa* (Quoy & Gaimard, 1835) and the taxonomic status of the three other species (*C. obscurellus* Souverbie, 1866, *C. tuberculosus* Souverbie, 1866, *C. subassimilis* Souverbie, 1866) had not yet been established (Kaas & Van Belle, 1980).

In December 1985 the author visited the Muséum d'Histoire Naturelle de Bordeaux where the type specimens of Souverbie are still present. These were found to be stored together in one of the showcases in the exhibition, just as Souverbie had them displayed in the last century. The chiton types are all glued onto pieces of black cardboard and therefore it was not possible (in most cases) to see whether the soft parts are still present or not. On the back of the cardboard pieces the name of the species, the locality (which in all cases is Ile Art, New Caledonia) and the assignment as type are neatly written in Souverbie's handwriting. Colour slides of the type material are kept in the present author's archives.

The following abbreviations are used: MHNB = Muséum d'Histoire Naturelle de Bordeaux and MNHN = Muséum National d'Histoire Naturelle, Laboratoire de Biologie des Invertébrés Marins et Malacologie, Paris.



Figs. 1-2. *Chiton* types described by M.S. Souverbie. 1, *Tonicia (Lucilina) lamellosa* (Quoy & Gaimard, 1835), holotype of *Chiton insculptus* Souverbie, 1866 (MHN). 2, *Plaxiphora obscurella* (Souverbie, 1866), holotype (MHN). All figs. $\times 7$. Photographs MHN.

SYSTEMATIC PART

Chiton insculptus Souverbie, 1866 (fig. 1)

As the name *C. insculptus* appeared to be a junior homonym of *Chiton insculptus* A. Adams, 1852 [= *Chiton (Rhyssoplax) canaliculatus* Quoy & Gaimard, 1835], Souverbie (1873: 287) renamed this species *Chiton montrouzieri*.

The holotype is in good condition, flattened, but somewhat contracted. It measures (including the girdle) 10.6 mm in length and 7.9 mm in width. The colour pattern is exactly identical with that in Souverbie's figured specimen (Souverbie, 1866: plate IX fig. 5) but the colour of the spots is brownish and not green as stated by Souverbie. The holotype of *C. insculptus* (= *C. montrouzieri*) must be considered a juvenile specimen as I have in my private collection specimens of this species from New Caledonia up to 24 mm in length and I saw in the MNHN collection specimens over 30 mm in length.

Having also seen one syntype of *Chiton lamellosa* Quoy & Gaimard, 1835 = *Tonicia (Lucilina) lamellosa* (Quoy & Gaimard, 1835) in the MNHN collection, I can now safely confirm the former opinion that *C. insculptus* is a junior synonym of this species. The syntype of *C. lamellosa* preserved in MNHN measures 21.6 mm in length and 14.2 mm in width. It is reasonably well preserved, the three first valves are loose and one valve (probably no. 5) is missing. It is here designated as lectotype. Another syntype preserv-

ed in the Institut Royal des Sciences Naturelles de Belgique (Brussels) is accompanied by a loose valve (Leloup, 1952: 62) that could be the one missing from the lectotype.

Chiton obscurellus Sowerbie, 1866 (fig. 2)

The holotype is in fairly good condition, flat dried, valve no. 5 is broken and the girdle is slightly damaged. The unique type measures 5.5 mm in length and 3.6 mm in width (including the girdle). The shell is keeled and low arched. The whole surface is coarsely granulated with round elevated granules. Anterior edge of the head-valve slightly crenulated with well defined 9-slitted insertion plate, dorsally the head-valve has approximately 8 faint ribs. Mucro of tail-valve posterior and not elevated. Girdle whitish with brown bands, dorsally covered with small spicules.

This small chiton undoubtedly belongs to the genus *Plaxiphora*. The only *Plaxiphora* species from New Caledonia was recorded by Risbec (1946: 156-163, figs. 13-17) who listed *Aerilamma* (= *Plaxiphora*) *primordia* Hull, 1924, on the authority of Hull who identified all New Caledonian chiton material recorded by Risbec. A larger specimen (9.6 mm long) from Risbec's collection preserved in the MNHN and indeed identified by Hull (according to a label in Hull's handwriting) proved to be identical with Sowerbie's type and Australian material of *P. primordia*. Consequently the taxon *Aerilamma primordia* Hull, 1924, must be regarded a junior synonym of *Chiton obscurellus* Sowerbie, 1866 = *Plaxiphora obscurella* (Sowerbie, 1866).

Chiton tuberculosus Sowerbie, 1866 (fig. 3)

The holotype is well flattened and has well preserved valves. The scales of the entire left side of the girdle are missing. Its measurements (including the girdle) are 6.5 mm in length and 3.8 mm in width.

C. tuberculosus must be considered a synonym of *Chiton (Rhyssoplax) discolor* Sowerbie, 1866, as it is without doubt a juvenile specimen of this species. Sowerbie (1866: 252) already suggested that this could be a juvenile form of a larger species, but saw enough characters, probably the number and arrangement of tubercles on head and tail valve, to discriminate it from other species known by him. In fact the number and arrangement of the tubercles is only a character of juvenile specimens and not a specific discriminating feature. With increase of length every single tubercle on the valve edges eventually becomes a nodulous rib. This process continues as long as the specimen grows, so that in fact every tubercle must be regarded as a rib or at least as a future rib. So in this case the holotype would have on the head valve 15 ribs, on the tail valve 12 ribs and on the pleural areas of the fourth valve 8 sulci (see table 1 for comparison with *C. discolor*).

Chiton discolor Sowerbie, 1866 (fig. 4, table 1)

Two syntypes are present. Both are flattened and have well preserved valves. The largest specimen measures 19.2 mm in length and 9.4 mm in width. Girdle and soft parts are missing. Its colour is whitish with bright orange streaks. The head-valve has 10 slits and the tail-valve about 9-10. The second and smaller specimen (fig. 1a in the original description) is hereby selected as lectotype. It is dull greenish grey and measures (including the girdle) 14.0 mm in length and 8.1 in width. The girdle is present but all dorsal scales are lost.

length classes	I	II	III	IV	V	VI
number of specimens	1	3	6	17	13	7
length of specimens (mm)	9	14-17	18-21	22-25	26-29	30-33
number of ribs:						
valve 1, range	17	18-19	18-22	19-27	19-24	22
average		18.7	20.7	22.5	21.8	22
valve 8, range	13	16-20	15-22	15-24	18-22	20-22
average		18.3	18.8	20.2	20.1	21.0
number of sulci:						
valve 4, range	9	13-15	16-19	18-23	20-25	23-25
average		14.0	17.3	20.2	21.5	24.0

Table 1. Numbers of ribs on valves 1 and 8 and numbers of sulci on pleural areas of valve 4 in six different length classes (I-VI) of *Chiton (Rhyssoplax) discolor* Souverbie, 1866 (all specimens in colln. Strack).

C. discolor [= *Chiton (Rhyssoplax) discolor* Souverbie, 1866] is a valid species and the most cited of Souverbie's chiton species in literature. It is therefore that this name should have priority over *C. tuberculosus* Souverbie, 1866.

Chiton subassimilis Souverbie, 1866 (fig. 5)

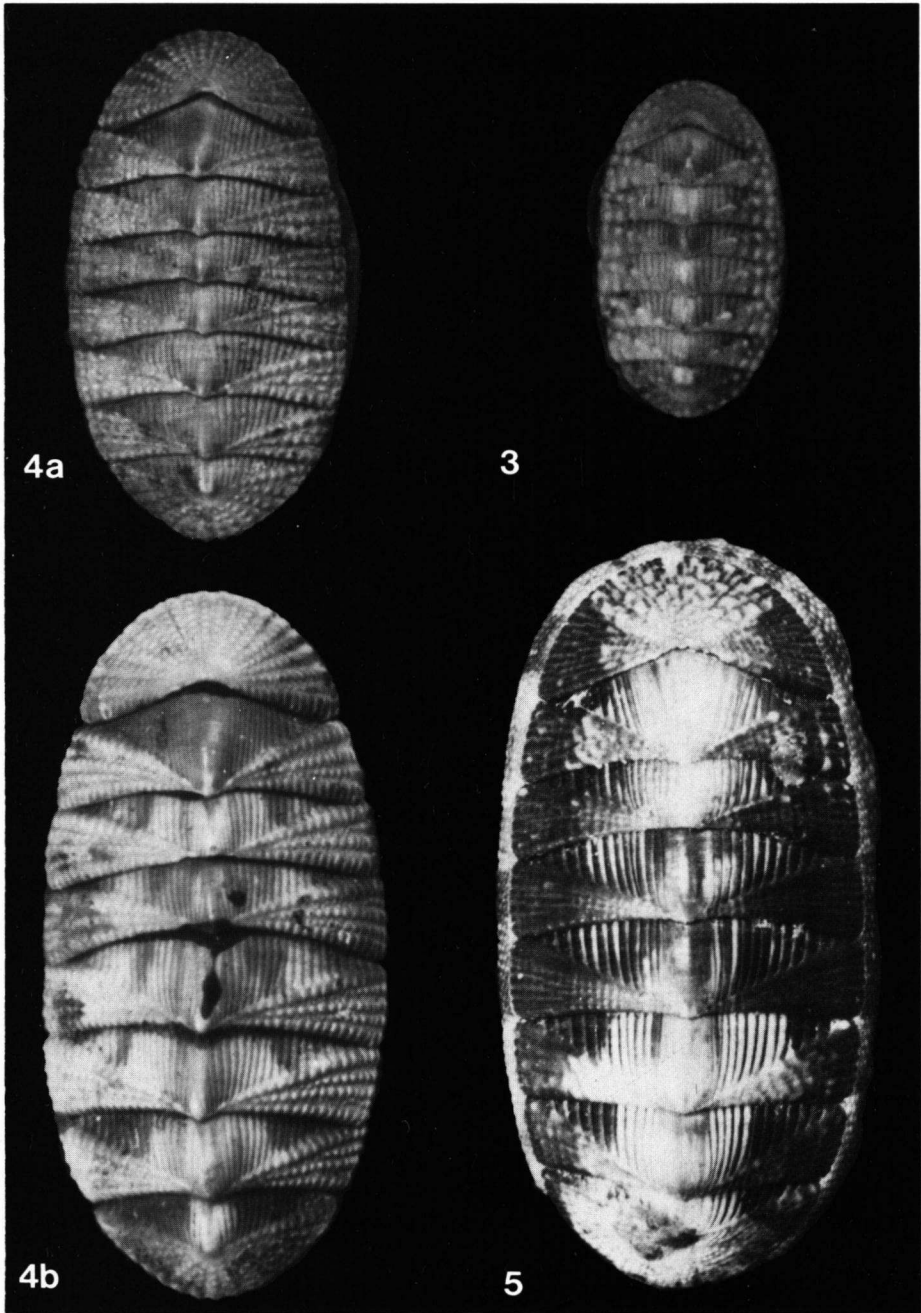
The holotype is well preserved and flattened. The colour is as described in the original description. Size (including the girdle): 20.2 mm in length and 10.4 mm in width. The girdle is somewhat folded to the inside. The soft parts are missing.

This specimen somewhat resembles *Chiton (Rhyssoplax) discolor* Souverbie, 1866, but differs from it in having considerably more and finer ribs on head and tail-valve (about 40 and 37 respectively, see for comparison with *C. discolor* table 1). Also, these ribs are not nodulous except at the initial parts of the shell where the ribs are faintly nodulous. Furthermore the number of sulci on the pleural areas is smaller. Only 13 sulci on each side of the fourth valve could be counted. The posterior edge of the tail-valve is more regularly rounded. The girdle scales seem to be fairly similar in size and form to those of *C. discolor* and have about 12-14 faint grooves.

The differences are too important to consider this only an extreme form of *C. discolor* and therefore it must be considered a valid species, placed in the genus *Chiton*, subgenus *Rhyssoplax*. As no new material has been found after its description, this species is so far only known from the holotype.

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Figs. 3-5. *Chiton* types described by M.S. Sowerbie. 3, *Chiton (Rhyssoplax) discolor* Sowerbie, 1866, holotype of *Chiton tuberculatus* Sowerbie, 1866 (MHNB). 4, *Chiton (Rhyssoplax) discolor* Sowerbie, 1866; 4a, lectotype (MHNB), 4b, paralectotype (MHNB). 5, *Chiton (Rhyssoplax) subassimilis* Sowerbie, 1866, holotype (MHNB). Fig. 3 \times 7, figs. 4-5 \times 5. Photographs MHNB.

RÉSUMÉ

Les chitons de la Nouvelle Calédonie décrites par St.-M. Souverbie

L'examen des types de chitons de la Nouvelle Calédonie décrites par M.S. Souverbie en 1866 et conservés dans le Muséum d'Histoire Naturelle de Bordeaux a donné les résultats suivants:

Chiton insculptus Souverbie, 1866 = *Tonicia (Lucilina) lamellosa* (Quoy & Gaimard, 1835);

Chiton obscurellus Souverbie, 1866 = *Plaxiphora obscurella* (Souverbie, 1866);

Chiton tuberculatus Souverbie, 1866 = *Chiton (Rhyssoplax) discolor* Souverbie, 1866;

Chiton discolor Souverbie, 1866 = *Chiton (Rhyssoplax) discolor* Souverbie, 1866;

Chiton subassimilis Souverbie, 1866 = *Chiton (Rhyssoplax) subassimilis* Souverbie, 1866.

Un lectotype est désigné pour *C. discolor* Souverbie, 1866, ainsi que pour *T. lamellosa* (Quoy & Gaimard, 1835) (Muséum National d'Histoire Naturelle, Paris).

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