

Sinularia vanderlandi spec. nov. (Octocorallia: Alcyonacea) from the Seychelles

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Ofwegen, L.P. van. *Sinularia vanderlandi* spec. nov. (Octocorallia: Alcyonacea) from the Seychelles. Zool. Verh. Leiden 334, 29.x.2001: 103-114, figs 1-9.— ISSN 0024-1652.

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Key words: Coelenterata; Octocorallia; Alcyonacea; *Sinularia vanderlandi*; spec. nov.; *S. compacta*; *S. molesta*; *S. intacta*; *S. rotundata*; synonymy; Seychelles.

A new species of *Sinularia* from the Seychelles is described and depicted: *S. vanderlandi*. Species with colony morphology and sclerites similar to that of *S. vanderlandi* are discussed.

Sinularia intacta Tixier-Durivault, 1970, *S. rotundata* Tixier-Durivault, 1970, and *S. molesta* Tixier-Durivault, 1970, are considered to be synonyms; *S. molesta* is here selected as the valid name.

Introduction

During the Dutch 'Oceanic Reefs' expedition to the Seychelles (1992-1993) (see van der Land, 1994) a large number of octocorals was collected (van Ofwegen & Sliering, 1994). In this collection a new species of *Sinularia* May, 1898, was found which is described and depicted below. The new species belongs to Verseveldt's (1980) group 1, having in the surface layer *leptoclados*-type sclerites. As it is very difficult to identify species of this group, the present species has been compared with all other species of group 1 having a similar colony morphology. This comparison proved *Sinularia intacta* Tixier-Durivault, 1970, *S. rotundata* Tixier-Durivault, 1970, and *S. molesta* Tixier-Durivault, 1970, to be conspecific. *Sinularia molesta* is here selected as the valid name (first reviser principle; ICZN article 24.2).

Material and abbreviations

The specimens examined are preserved in 70% alcohol and deposited in the Nationaal Natuurhistorisch Museum, Leiden, The Netherlands (formerly Rijksmuseum van Natuurlijke Historie: RMNH). MRAC = Musee Royal de l'Afrique Centrale, Tervuren, Belgium.

Systematic part

Sinularia vanderlandi spec. nov.
(figs 1-5)

Sinularia grayi; Verseveldt, 1976: 498 (misidentification).

Not *Sinularia grayi* Tixier-Durivault, 1945: 145; 1951: 62, figs. 71, 75; 1966: 189, figs. 184-186; 1969: 148; 1972: 21; Verseveldt, 1965: 32, fig. 2, pl. 1 fig. 1; 1970: 210; 1980: 68, fig. 32, pl. 21 fig. 1.

Material.— RMNH Coel. 24330 (holotype; sta. Sey. 707, SW coast of Praslin Island; 04°18'S 55°41'E, 17.xii.1992, SCUBA diving near outlying rock, 10-12 m); RMNH Coel. 24331 (5 paratypes, sta. 707, same data as holotype); RMNH Coel. 24332 (paratype; sta. Sey. 609, Mahé, NW coast, Vista do Mar, 04°34'S 55°26'E, 11.xii.1992, snorkeling and SCUBA diving, -9m); RMNH Coel. 24333 (2 paratypes; sta. Sey. 723, Bird Island, off N coast, 03°42'S 55°12'E, 21.xii.1992, SCUBA diving near drop-off, 8-21 m); RMNH Coel. 24334 (4 paratypes; sta. Sey. 735, La Digue Island, S coast, 04°23'S 55°50'E, 23.xii.1992, SCUBA diving near rocky shore, 8-16 m); RMNH Coel. 11121 (paratype; Isl. La Digue, Seychelles, i-ii.1974, coll. J. Bouillon & B. Tursch); MRAC 3220 (2 paratypes; Isl. La Digue, Seychelles, i-ii.1974, coll. J. Bouillon & B. Tursch; micro-slide preparations of both specimens present in NNM: RMNH Coel. 11144, RMNH Coel. 11147).

Description of the holotype.— Maximum cross-section of the colony 4.5 × 7.5 cm, height 3.5 cm (fig. 1a, b). Sterile stalk varying in height from 1 to 2 cm. Lobes knob-shaped to short finger-like, and several of them are flattened laterally, forming small crests.

Polyps with a crown and eight points. Crown with bent rods, up to 0.22 mm long, points with poorly developed clubs, up to 0.15 mm long (fig. 2c). Tentacles with rods up to about 0.10 mm long.

Surface layer of lobes with clubs, 0.06-0.25 mm long, the smaller ones *leptoclados*-like clubs, the larger ones wart-clubs (fig. 2a). Some of the smallest clubs resemble capstans, and some are double-headed clubs; furthermore, there are small slender

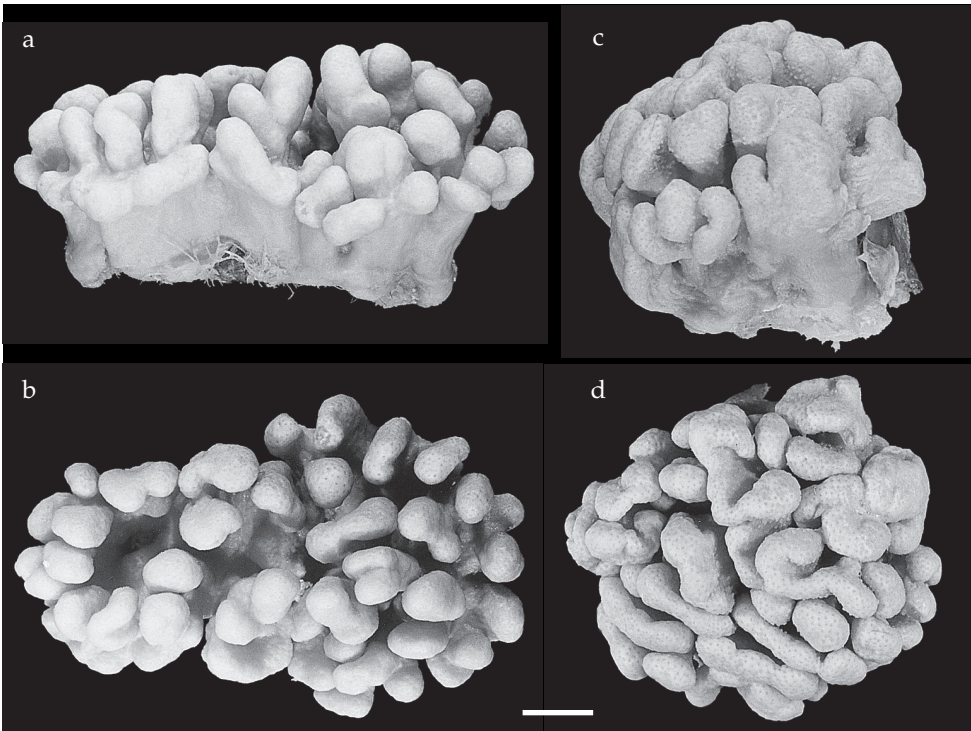


Fig. 1. *Simularia vanderlandi* spec. nov.; a, b, holotype (RMNH Coel. 24330); c, d, paratype (RMNH Coel. 24332); a, c, side views; b, d, views from above. Scale bar 1 cm.

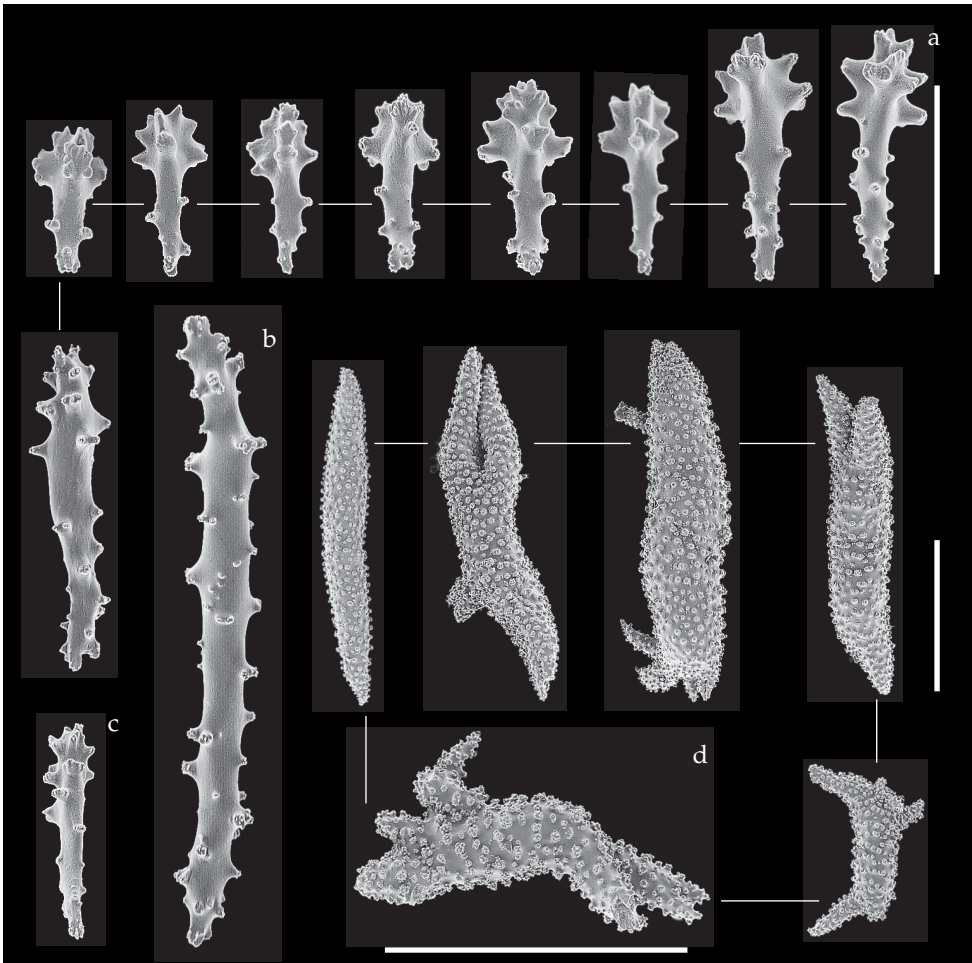


Fig. 2. *Simularia vanderlandi* spec. nov.; sclerites of holotype (RMNH Coel. 24330); a, clubs of surface layer of lobe; b, spindle of surface layer of lobes; c, anthocodial club; d, spindles of interior of lobes. Scale bar at 2a 0.10 mm, also applies to 2b-c; scale bars at 2d 1 mm.

spindles, up to about 0.40 mm long (fig. 2b). Transitional forms between *leptoclados*-like clubs and wart-clubs, and between wart-clubs and small spindles are also present. Interior of lobes with spindles, up to about 2.5 mm long, with simple or complex tubercles, several with many side-branches (fig. 2d).

Surface layer of stalk with clubs of same length as those of lobes, but all have wider heads (fig. 3a). They are less *leptoclados*-like and several are capstan-like. In addition are present small spindles, wider than those of the lobes (fig. 3b), and transitional forms between clubs and spindles. Interior of stalk with spindles, up to about 3 mm long, with simple or complex tubercles, several with side branches (fig. 3c).

Colour of preserved colony.— Whitish.

Variation.— Colour of the colonies varies from whitish to brownish. Many lobes

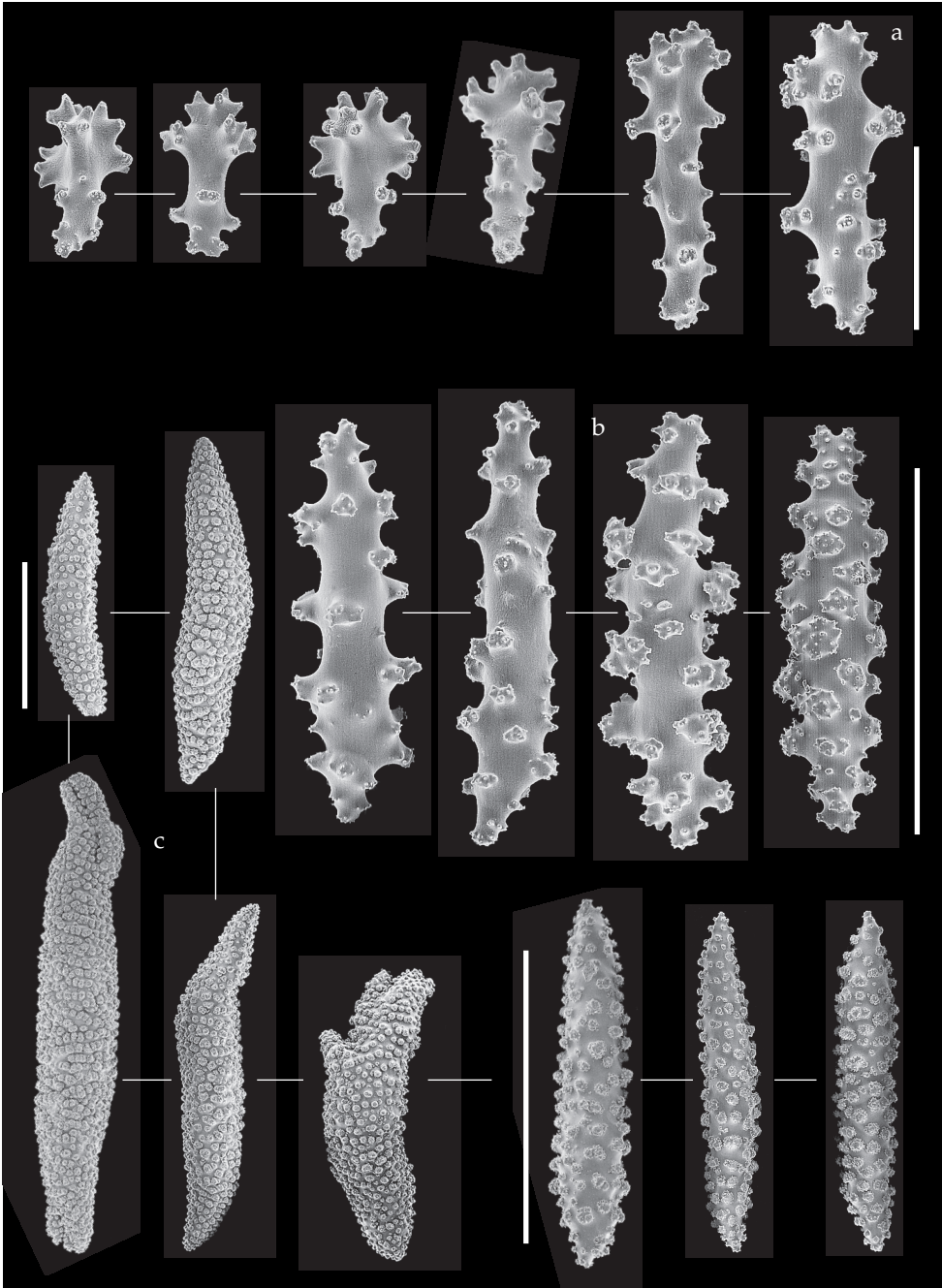


Fig. 3. *Simularia vanderlandi* spec. nov.; sclerites of holotype (RMNH Coel. 24330); a, clubs of surface layer of base; b, spindles of surface layer of base; c, spindles of interior of base. Scale bar at 3a and 3b 0.10 mm, scale bar at 3b only applies to right spindle of 3b; scale bars at 3c 1 mm.

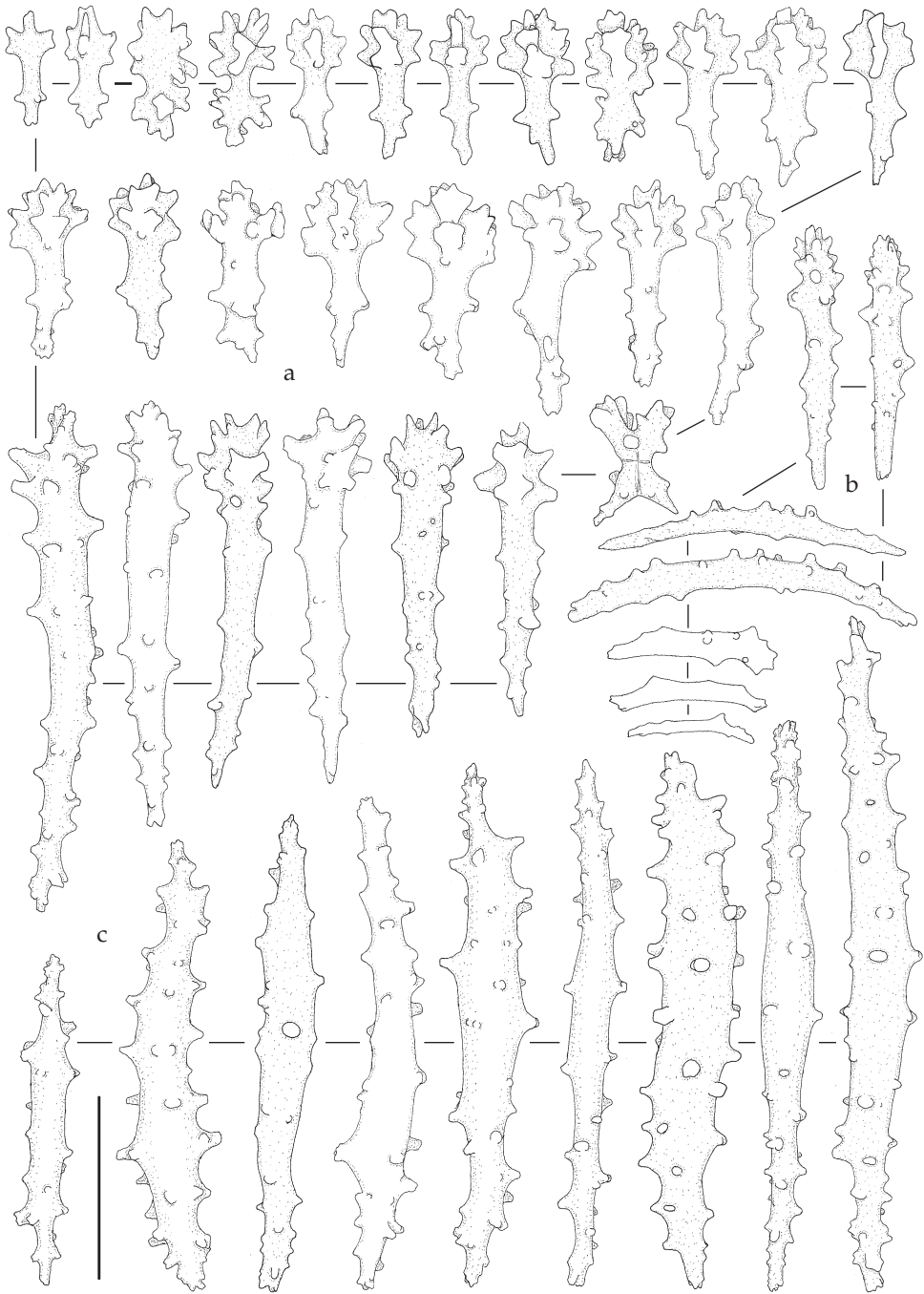


Fig. 4. *Simularia vanderlandi* spec. nov.; sclerites of paratype (RMNH Coel. 24332); a, clubs of surface layer of lobe; b, anthocodial sclerites; c, spindles of surface layer of lobes. Scale bar 0.10 mm.

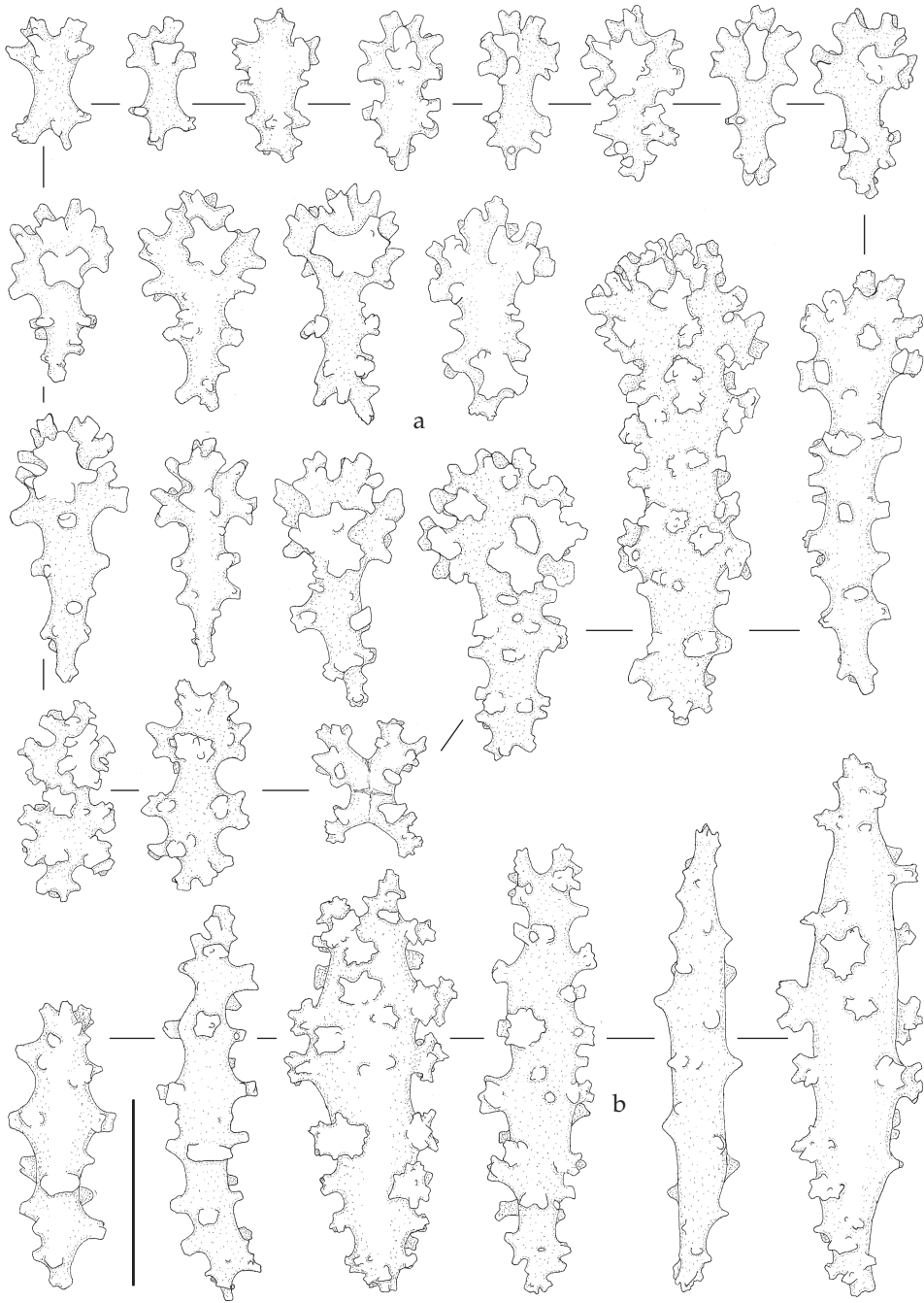


Fig. 5. *Simularia vanderlandi* spec. nov.; sclerites of paratype (RMNH Coel. 243332); a, clubs of surface layer of base; b, spindles of surface layer of base. Scale bar 0.10 mm.

of the paratype from sta. 609 are flattened laterally (fig. 1c, d). The sclerites are similar to those of the holotype (figs 4, 5).

Etymology.— The species is named after Dr Jacob van der Land, the leader of the ‘Oceanic Reefs’ expedition.

Discussion.— Micro-slide preparations of specimens from the Seychelles identified by Verseveldt (1976: 498) as *Sinularia grayi* were re-examined and proved these specimens to belong to the above described new species.

As mentioned in the introduction, the new species belongs in Verseveldt’s “group 1”. As the species of this group are not easy to distinguish, it has been compared with all other species of this group having a similar colony shape.

Sinularia erecta Tixier-Durivault, 1945, *S. exilis* Tixier-Durivault, 1970, and *S. parulekari* Alderslade & Shirwaiker, 1991, unlike *S. vanderlandi* all have short spindles in the surface layer (up to about 0.20 mm long).

Sinularia densa (Whitelegge, 1897) has square headed clubs in the surface layer, not present in *S. vanderlandi*.

The description of *Sinularia microspiculata* Tixier-Durivault, 1970, is highly inadequate. According to Verseveldt (1980) the holotype is lost, but in his revision of the genus *Sinularia* Verseveldt gives as a character the very short unbranched spindles of the interior (less than 2 mm long), quite different from *S. vanderlandi*.

Sinularia compacta Tixier-Durivault, 1970, *S. intacta* Tixier-Durivault, 1970, *S. molesta*, Tixier-Durivault, 1970, and *S. rotundata* Tixier-Durivault, 1970, all described from New Caledonia, resemble the new species. As van Ofwegen & Benayahu (1992: 152) had problems identifying these species, the microscopic slides of the type material were re-examined and the sclerites of the surface layer of the lobes are depicted once more (figs 6-9). *Sinularia compacta* clearly differs from the other three by having somewhat larger *leptoclados*-like clubs, whereas the spindles of the crown of the polyps are twice as long.

Sinularia molesta, with a very short stalk, *S. rotundata*, with intermediate stalk length, and *S. intacta*, with a long stalk, all show similar sclerites. According to Verseveldt (1980: 11), *S. molesta* differs from the other two in having branched spindles in the interior. However, I also found branched spindles in the other two species, and therefore this character cannot be used to distinguish between these three species. Verseveldt (1980: 12) separated *S. intacta* and *S. rotundata* by differences in length of the stalk, length of the internal spindles, and the size of the warts on these spindles. The last two of these characters are highly variable in species of *Sinularia*. As more species of *Sinularia* have been described with variable stalk length, such as *S. capitalis* (Pratt, 1903) (see Verseveldt, 1980, pl. 5 figs 1-2), and *S. brassica* May, 1898 (see Benayahu et al., 1998), this character is of limited value for species recognition. *Sinularia intacta* shows shorter spindles in the crown of the polyps (fig. 7b), but I assume that this difference is caused by the lack of polyp sclerites present in the examined microscopic slide of this species. Considering the above discussion I synonymize *S. intacta*, *S. rotundata* and *S. molesta*, selecting *S. molesta* as the valid name (first reviser principle; ICZN article 24.2).

The above discussed four species from New Caledonia all differ from the new species in the shape of the clubs. First, the club shape is more variable in *S. vanderlandi*, probably the reason why Verseveldt (1976) misidentified the species as *S. grayi*. Second, where the handle of the *leptoclados*-like clubs meets the head, the head

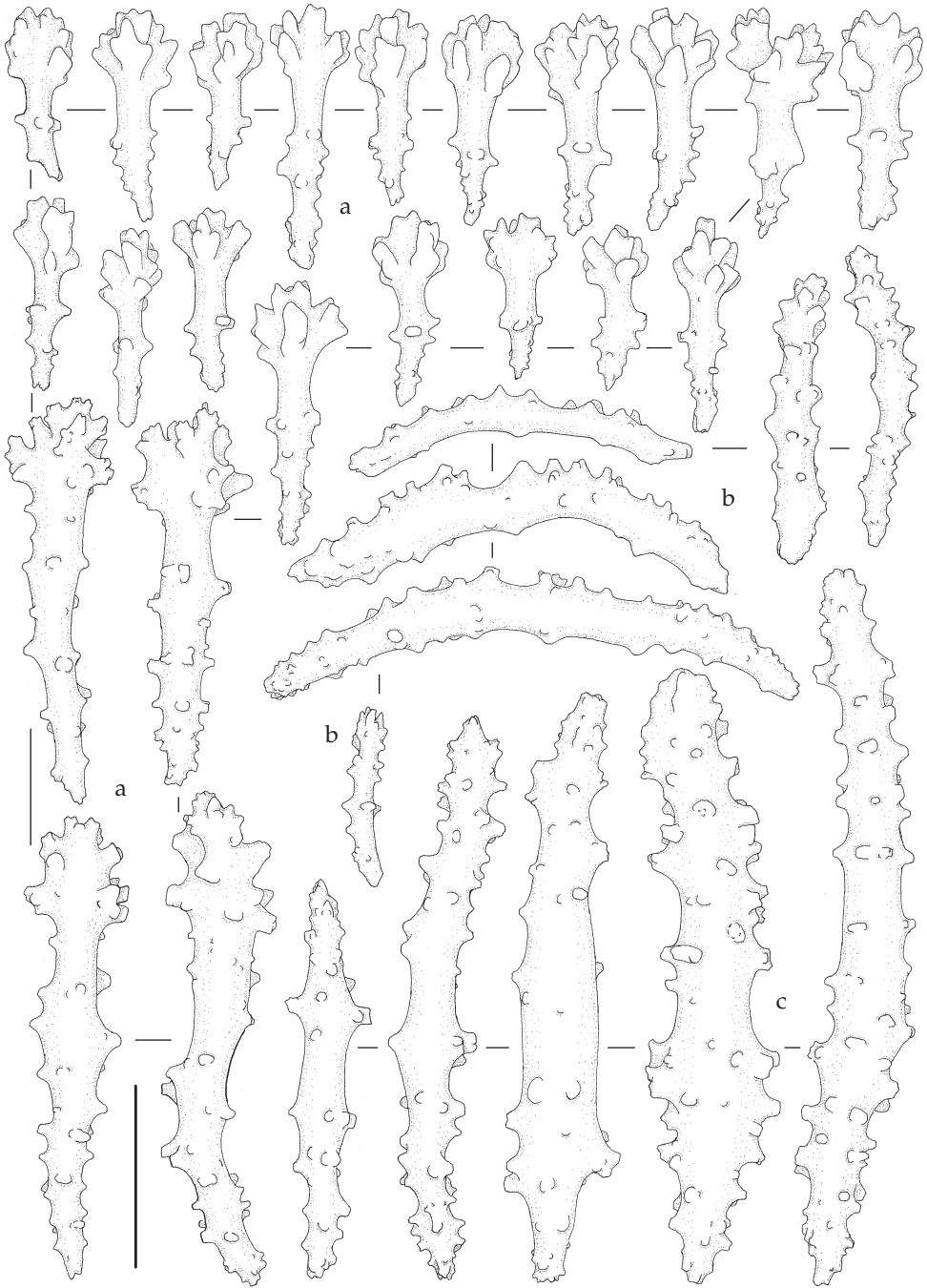


Fig. 6. *Simularia compacta* Tixier-Durivault, 1970; sclerites of holotype (MNHN s.n.); a, clubs of surface layer of lobe; b, anthocodial sclerites; c, spindles of surface layer of lobes. Scale bar 0.10 mm.

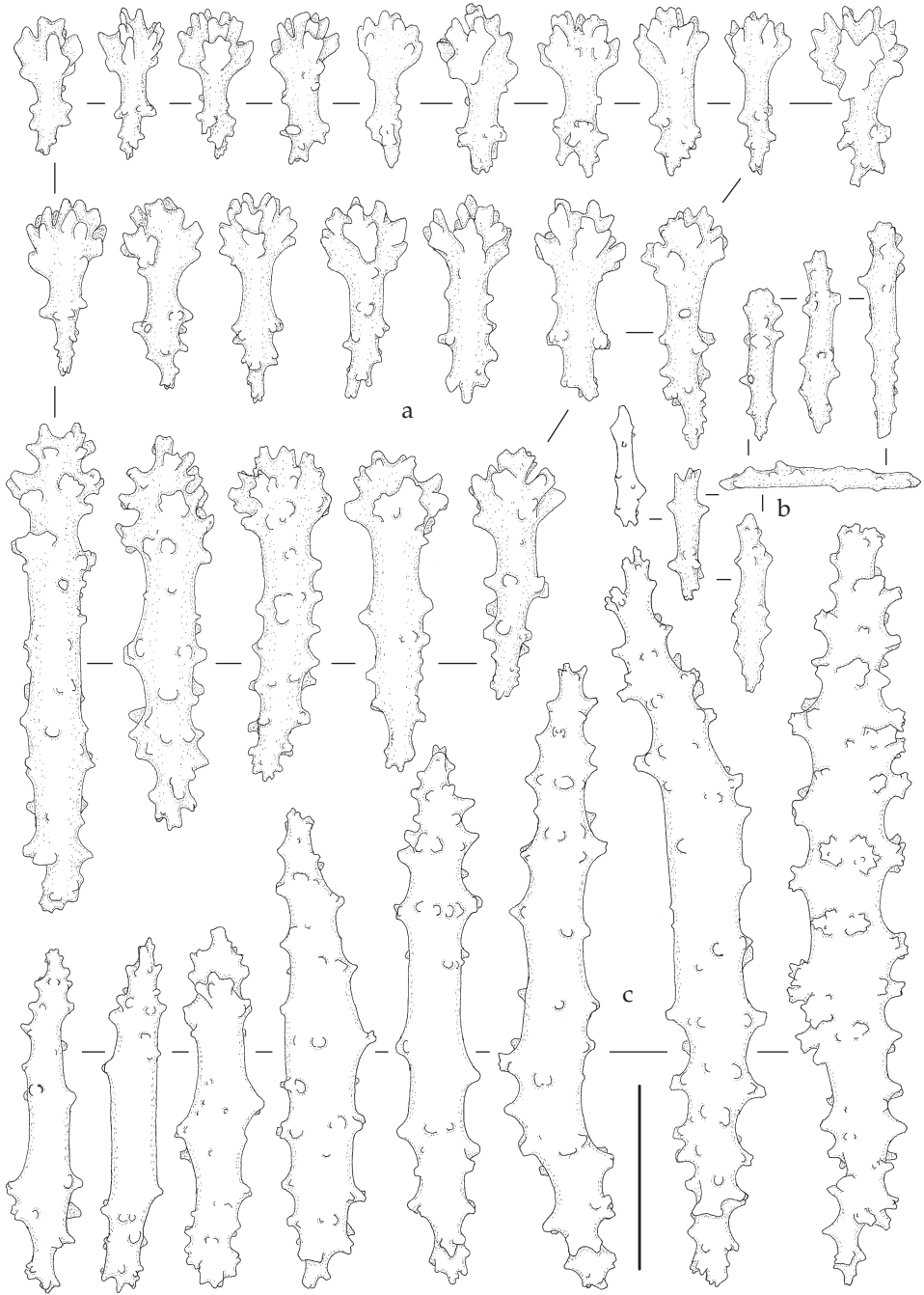


Fig. 7. *Simularia intacta* Tixier-Durivault, 1970; sclerites of holotype (MNHN s.n.); a, clubs of surface layer of lobe; b, anthocodial sclerites; c, spindles of surface layer of lobes. Scale bar 0.10 mm.

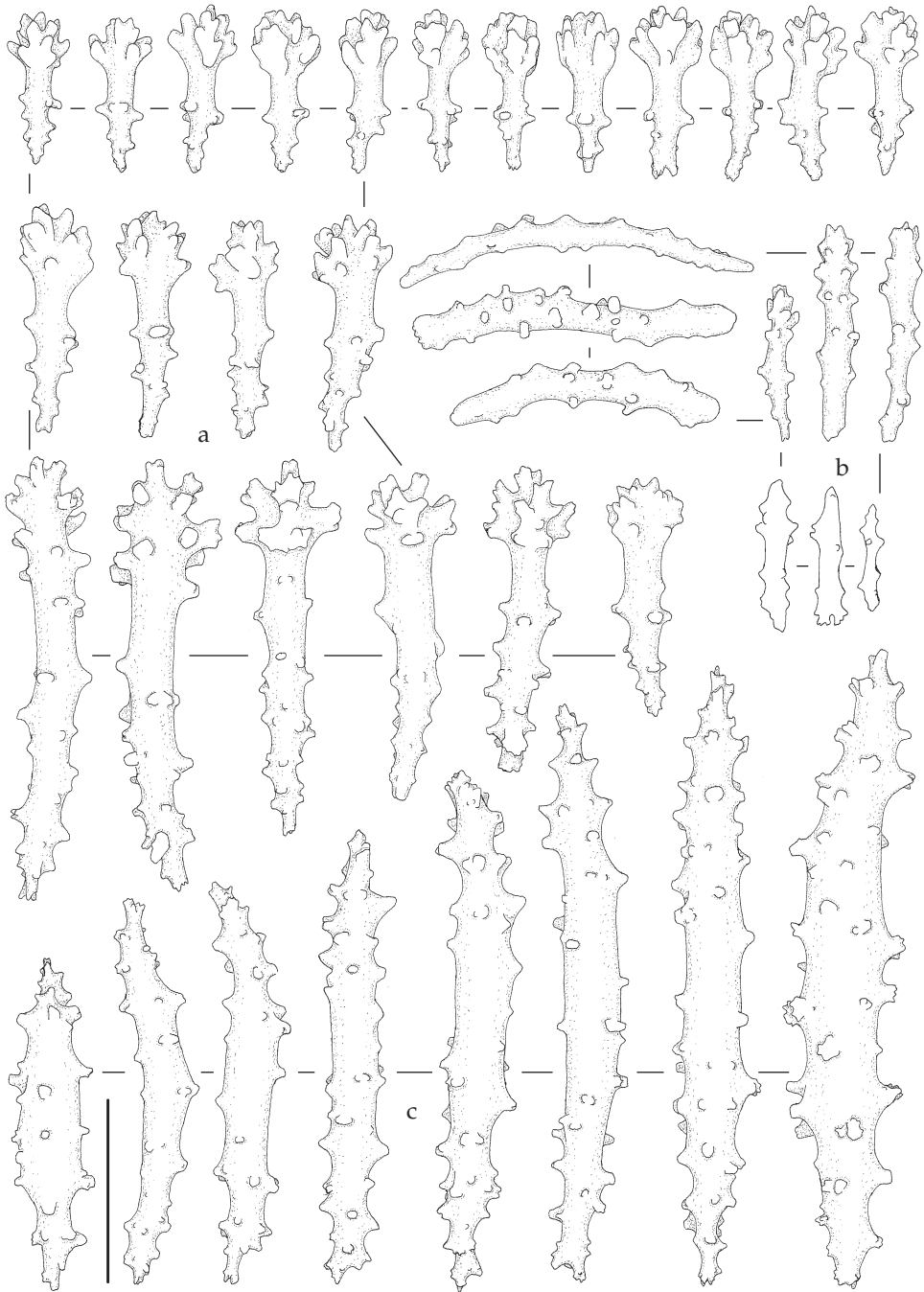


Fig. 8. *Simularia molesta* Tixier-Durivault, 1970; sclerites of holotype (MNHN s.n.); a, clubs of surface layer of lobe; b, anthocodial sclerites; c, spindles of surface layer of lobes. Scale bar 0.10 mm.

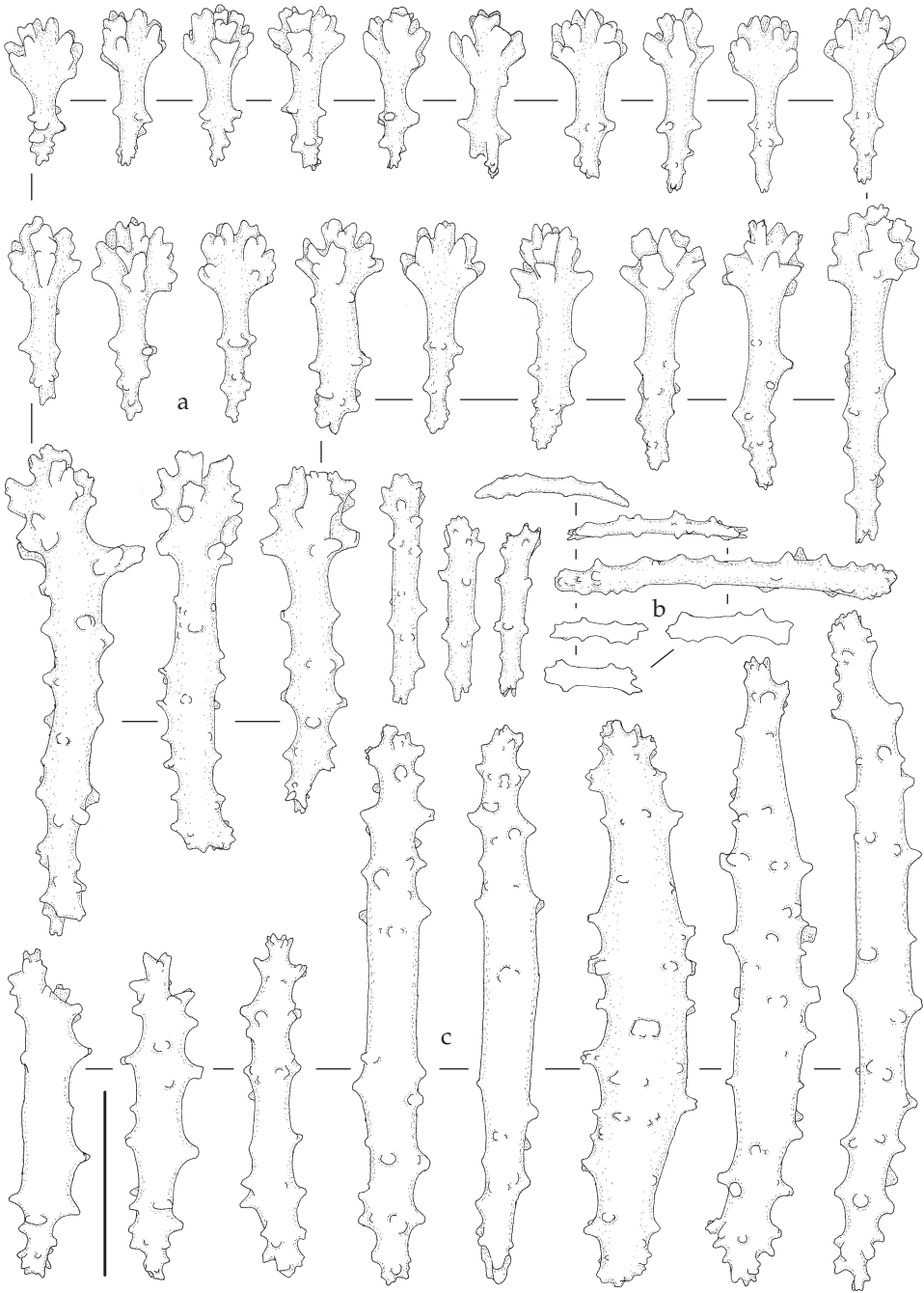


Fig. 9. *Simularia rotundata* Tixier-Durivault, 1970; sclerites of paratype (MNHN s.n.); a, clubs of surface layer of lobe; b, anthocodial sclerites; c, spindles of surface layer of lobes. Scale bar 0.10 mm.

processes jut out at an angle of about 90 degrees in *S. vanderlandi*; this angle is distinctly larger in the other species (compare fig. 4a with figs 6a, 7a, 8a, 9a).

Lastly, *Simularia fishelsoni* Verseveldt, 1970, not only has a colony shape similar to that of the new species, but even has similarly branched spindles in the interior. However, the clubs of the surface layer of the lobes are only up to about 0.20 mm long and their shape is somewhat similar to those in the above discussed *S. molesta*.

Acknowledgements

I wish to thank P. Alderslade (Museum and Art Gallery of the Northern Territory, Darwin, Australia) and Y. Benayahu (Tel Aviv University, Israel) for comments on the manuscript, I. Henneke for photographing the colonies, J. Goud (Nationaal Natuurhistorisch Museum) for the scanning electron microscopy, and M. Slierings (Nationaal Natuurhistorisch Museum) for curational assistance.

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