OCCASIONAL PAPERS

of Bernice P. Bishop Museum *Honolulu, Hawai'i*

Volume XXV April 30, 1983 Number 8

Sinularia molokaiensis, a New Species of Alcyoniidae (Octocorallia: Alcyonacea) from Hawaiian Waters

J. Verseveldt
Weteringpark 7-48, 8025 AM Zwolle, The Netherlands

IN JULY 1979, 2 alcyoniid soft coral colonies were collected on the reef slope off the S.E. side of Moloka'i Island near Pamalu at a depth of about 13 m in a bed of scleractinian coral, *Porites compressa*. The soft corals were found during a University of Hawaii Sea Grant supported Marine Option Program student survey. The specimens were donated by Paul Bartrum to the Division of Invertebrate Zoology, Bernice P. Bishop Museum (BPBM) and sent to the author for identification. Both colonies belong to a new species of *Sinularia,* which is named *Sinularia molokaiensis*. The larger colony is designated as the holotype (BPBM D531) and the smaller one as a paratype (BPBM D562).

DESCRIPTION OF THE HOLOTYPE

Colony: The colony is attached to a piece of the stony coral *Porites compressa;* this piece is divided into 2 thick branches that project above the *Sinularia* colony (Fig. 1). The colony is attached to the stony coral over its whole length, covering the coral as a crust, which is nowhere thicker than 9 mm. The surface of the crust is grooved longitudinally. The height of the colony is 95 mm; the maximum width is 70 mm.

The colony consists of a basal part, comparable with the stalk of other *Sinularia* species. This stalk is 30 mm high. Just as the stalk, the sides of the crust are without anthocodiae except their uppermost parts. At a height of 30 mm the first lobe appears. The distal part of the colony, the capitulum, consists of small lobes, which may be unbranched or branched. Sometimes the unbranched ones hardly protrude above the surface of the crust, while others appear as fingerlike lobes, up to 9 mm long and 4 to 5 mm wide. The branched lobes bear 2 or more lobules with a length varying from 1 to 9 mm and a width from 1 to 4 mm.

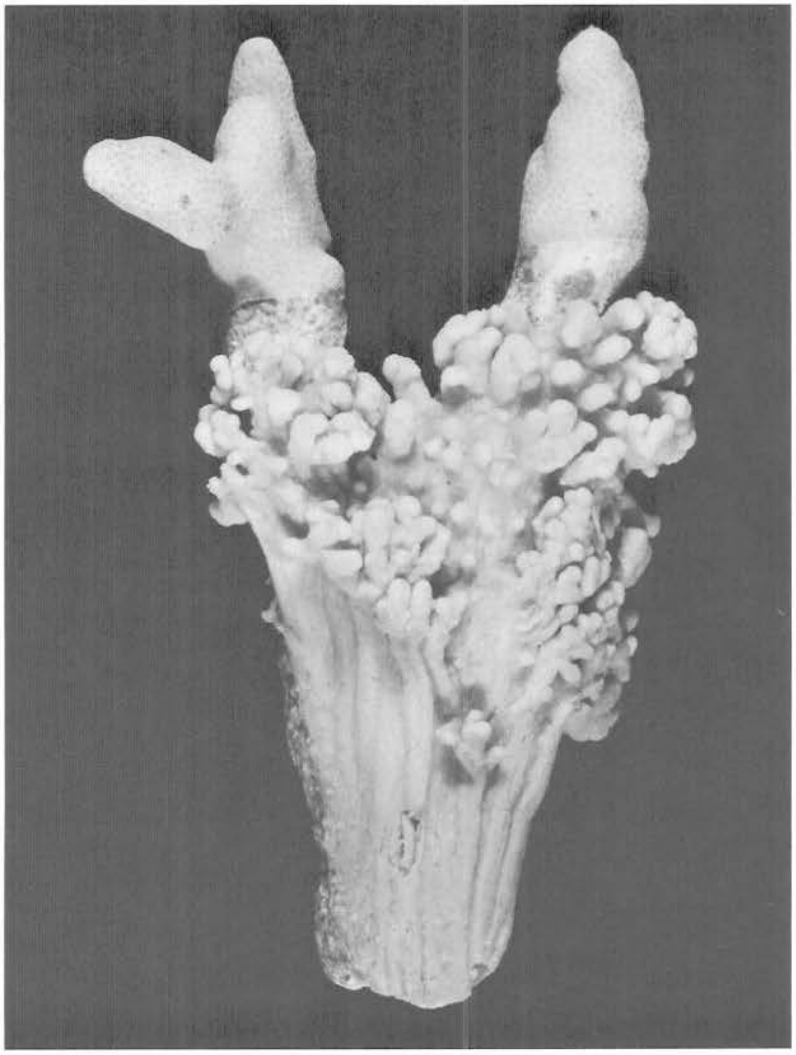

Figure 1. *Sinularia molokaiensis* sp. nov., holotype, BPBM D531. Front view, natural size. (Photograph by G. J. Vrijmoeth.)

Polyps: The polyps are all retracted and are indicated by small, shallow pits; the centers are 0.40 to 0.70 mm apart.

Sclerites: The surface layer of a lobe contains clubs, usually 0.12 to 0.14 mm long; a few attain a length of 0.19 mm (Fig. 2, a-h). The club heads, which are often spherical, consist of a number of small, more or less wartlike prominences. The club handles are blunt-ended; they bear irregularly placed prominences. The clubs in the surface layer of the stalk are wider, the heads are less spherical, the prominences are thicker and less densely placed (Fig. 2, l-n). Their length is usually 0.12 or 0.13 mm, but ranges from 0.10 to 0.16 mm.

The interior of lobes and stalk has irregularly shaped sclerites. Those in the stalk (Fig. 2, o-q) are usually more bizarre in shape and larger than those in the lobes and lobules (Fig. 2, i-k). They are derivable from spindles. In the lobes they measure up to about 1.70 mm in length, in the stalk 3.50 mm or more in length. The warts on the sclerites are not densely placed; they are small, 0.03 to 0.05 mm in diameter, with high crenelles (Fig. 2, r).

Color: The holotype, which is preserved in alcohol, is cream-colored.

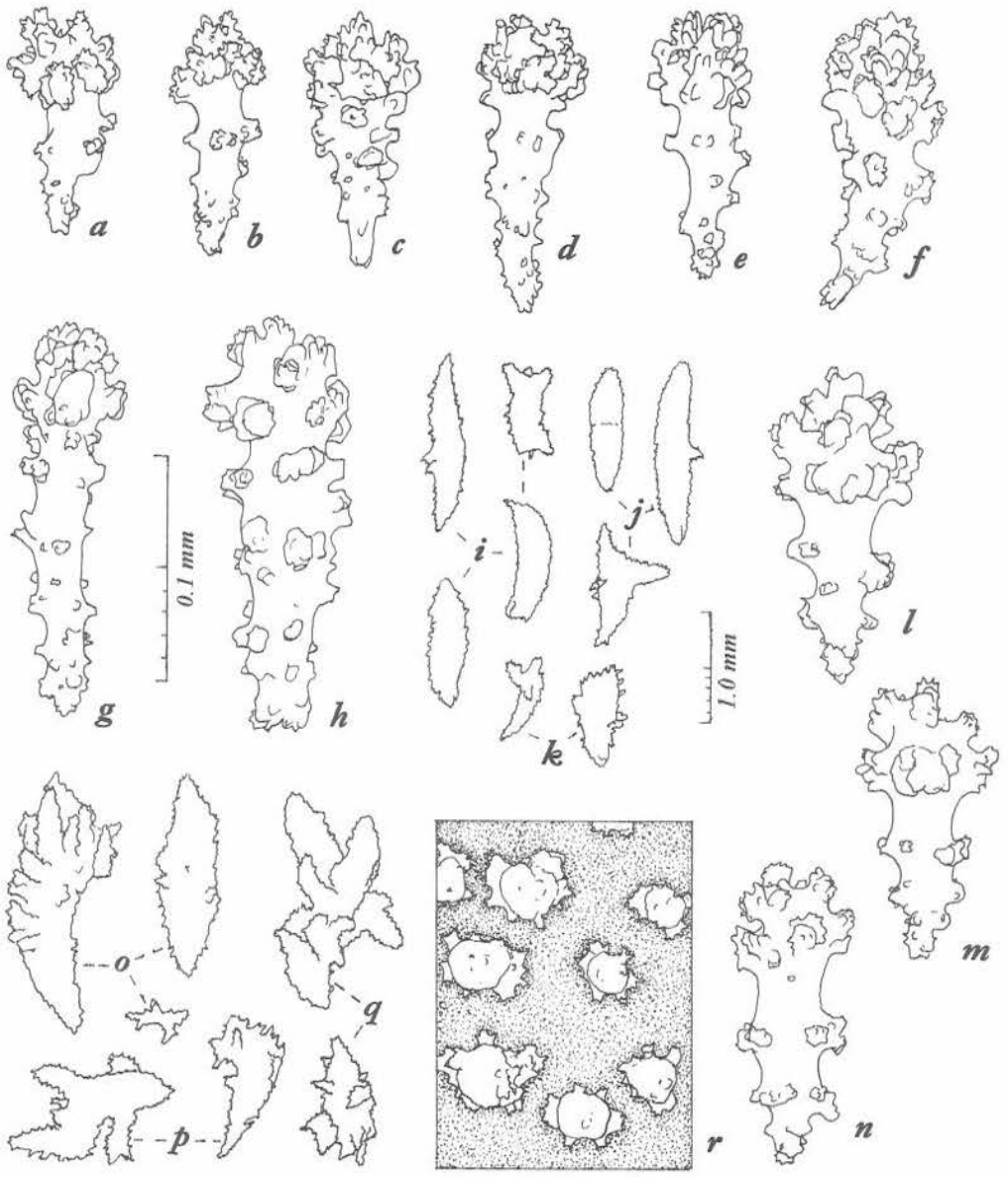

Figure 2. *Sinularia molokaiensis* sp. nov., holotype. **a-h,** clubs from surface layer of a lobe; **i-k,** sclerites from interior of a lobe; **l-n,** clubs from surface layer of the stalk; **o-q,** sclerites from interior of the stalk; **r,** warts on internal sclerite from the stalk. Enlargement of **a-h, l-n** and **r** indicated by 0.1 mm scale at **g;** that of **i-k** and **o-q** by 1.0 mm scale between **k** and **l.**

PARATYPE

The paratytpe (Fig. 3) is also attached to a piece of stony coral; it forms a rather soft crust around 3 sides of the coral. The crust is covered with small lobes and lobules. The length of the colony is 65 mm, the thickness of crust plus lobes is 10 to 20 mm. The sclerites and the color (in alcohol) are the same as in the holotype; the polyps are also retracted.

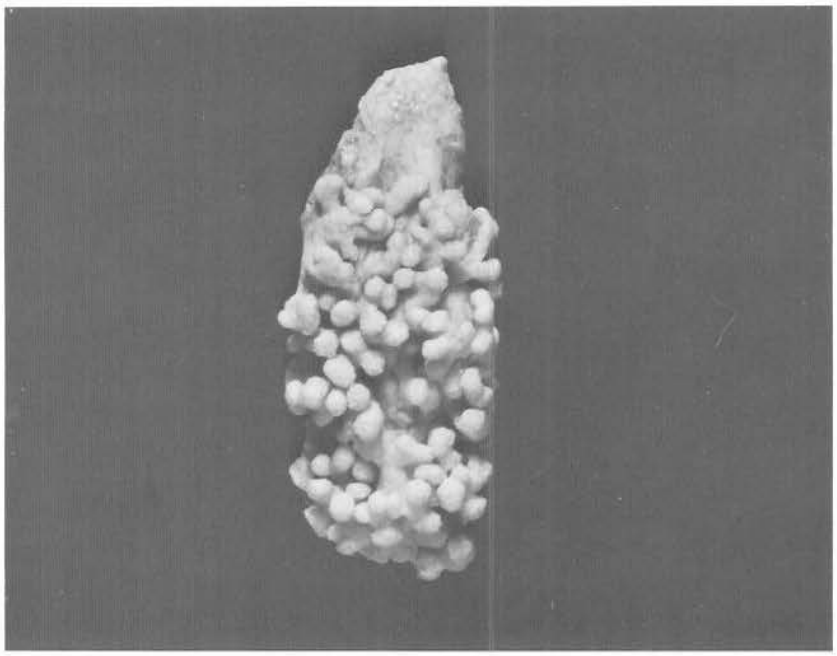

Figure 3. *Sinularia molokaiensis* sp. nov., paratype, BPBM D562. Natural size. (Photograph by G. J. Vrijmoeth.)

REMARKS

In a revision of the genus *Sinularia* (Verseveldt 1980:7) 5 groups of species are distinguished on the basis of shape, dimensions, and presence or absence of clubs in the surface layer of the lobes. The new species should be referred to Group IV: clubs not of the *leptoclados*-type, without a central wart, and mostly more than 0.12 mm long.

To my knowledge this is only the second *Sinularia* species found in Hawaiian waters. The first species was *S. abrupta* Tixier-Durivault. The two species differ in the spiculation and in the shape of the colony. In *S. abrupta* the clubs in the surface layer of lobes and stalk are of the *leptoclados*-type (see Verseveldt 1977:18-20 and 1980:5, 20); the sclerites in the interior of the stalk are spindles which are little branched; and the colony has a normal shape with a distinct stalk and a lobate disc or capitulum. In *S. molokaiensis,* however, the clubs in the surface layer are not of the *leptoclados*-type, the internal sclerites are strongly branched and bizarre in shape, and the colony is encrusting.

At present, the two species of *Sinularia* are the only alcyoniid soft corals recorded from the Hawaiian Islands. In contrast, a far greater number occurs in the central and south Pacific tropical areas. For example, at Enewetak Atoll (Marshall Islands), up to 15 species in 5 genera are recognized (Devaney, in prep.).

LITERATURE CITED

Verseveldt, J. 1977. Octocorallia from various localities in the Pacific Ocean. *Zool. Verhand. Leiden* 150:1-42.
1980. A revision of the genus *Sinularia* May (Octocorallia, Alcyonacea). *Zool. Verhand. Leiden* 179:1-128.