5. *Plankton of the Lakes in Kita-Daitô-zima.**

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The present contribution deals with the plankton-material collected by Mr. T. Sugiyama in March, 1934, during a geological survey of Kita-Daitô-zima, one of the so-called Borodino Islands, about 240 kilometres east of the Island of Okinawa. My thanks are due to Prof. H. Yabe of the Tôhoku Imperial University, Sendai, for giving me the opportunity of examining this interesting material from the lakes of an island whose plankton fauna and flora are quite unknown.

Kita-Daitô-zima is a small island of about 13.300 km² in area and is built of coral-limestones. In the central shallow basin of the island there are a number of shallow lakes and lakelets, of which two larger ones were investigated. Both lakes are nearly circular in outline, about 800 metres distant from each other, and are similarly bordered by a thick growth of *Pandanus tectorius*. The physical and chemical data relating to these lakes were discussed by Dr. S. Yoshimura in a separate paper.¹⁾

The plankton of these two lakes is remarkable in its paucity of species of animals and plants, especially of algal plankters. There is a difference in the quantity of the different plankters in the two lakes at that season (March 12th, 1934), as will be seen from the accompanying list:

Species	Kita-oike	Aka-ike
	%	%
<i>Centropyxis aculeata</i> Stein	0.2	0.4
<i>Monostyla lunaris</i> Ehrenberg.....	1.4	0
<i>Brachionus angularis</i> Gosse	0.2	52.3
<i>Brachionus capsuliflorus</i> Pallas	0	0.8
<i>Pompholyx complanata</i> Gosse.....	1.0	0
<i>Keratella valga</i> (Ehrenberg)	96.3	30.0
<i>Alona rectangula</i> G. O. Sars	0.3	0
<i>Thermocyclops hyalinus</i> (Rehberg)	0.5	15.7
Nauplii of Cyclopoida	0.1	0.8
Total:	100.0	100.0

In Kita-oike, the largest lake in the island, a rotifer *Keratella valga* is dominant, while in the other, Aka-ike, another rotifer *Brachionus angularis typica* is most abundant, *Keratella valga* occupying only 30% of the total plankton. In the former lake there occurred a considerable amount of a minute unicellular green alga, which suggests

* Geological Studies of Daitô-zima (Borodino Islands) by the Institute of Geology and Palaeontology, Tôhoku Imperial University. Contribution No. 6.

1) Refer to the foregoing article "Limnology of the Two Lakes on the Oceanic Island, Kita-Daitô-zima" by S. Yoshimura.

that it might have made the lake-water remarkably turbid (so-called "Vegetationstrübung"). The samples from the latter lake contained only vegetable debris, no algal plankters at all being found.

Keratella valga occurring in these two lakes is characterized by the left posterior spine which is very greatly reduced or entirely absent. All of these forms may be referred to Apstein's *tropica* from Ceylon.¹⁾ Almost all forms inhabiting Aka-ike are monospinous, the left spine being entirely absent and having well-developed reticulate and punctate sculpture on the lorica. This monospinous *tropica* form may be referred to f. *monstrosa* (Barrois and Daday) according to the desig-

Fig. 1-4. *Keratella valga* (Ehrenberg) from Kita-Daitô-zima. 1-2, Monospinous *tropica-monstrosa* (Barrois and Daday) from Aka-ike; 3-4, *tropica-asymmetrica* from Kita-oike.

nation of Edmondson and Hutchinson,²⁾ but its lorica is somewhat broader and its right spine is much shorter than in *tropica* from Lake Wulner, Kashmir (Edmondson and Hutchinson, l. c.). In this lake the *tropica* form which has a very much reduced left spine was rarely met with. In Kita-oike, on the contrary, the monospinous form was very rare, most forms having the right spine, which is about half as long as the lorica, and a rudimentary left spine. Its lorica is more slender than in the Aka-ike form, and reticulate and punctate sculpture is also present. This form may be regarded as *asymmetrica* (Barrois and Daday).

As far as the present material is concerned, no marked regional peculiarities of the plankton are recognized, all species in association being widespread in their geographical distribution. It is of interest to note that the range of occurrence of the *tropica* forms of *Keratella valga* is limited chiefly to the warmer regions. In Eastern Asia this species seems to occur only in the south-western parts of Japan proper, Formosa and South-eastern China, as well as in the southern plains of Manchoukuo.

1) Apstein, C. 1907: Das Plankton im Colombo-See auf Ceylon. Zool. Jahrb. Abt. f. System., 25, S. 201.

2) Edmondson, W. T. and G. E. Hutchinson 1934: Report on Rotatoria. Yale North India Expedition. Mem. Conn. Acad. Arts & Sci., 10, p. 172.