im hinteren Abschnitt des Herzens eine solche Menge von Pericardialzellen, daß die ganze Höhlung des Herzens von diesen Zellen dicht angefüllt erschien und es mir unerklärlich war, wie ein derartiges Herz functionieren konnte. Dabei finden sich die Pericardialzellen stets nur im allerhintersten Abschnitt des Herzens, nie aber im mittleren oder vorderen Abschnitt.

Daß die von mir in der Höhlung des Herzens beobachteten Zellen in der That Pericardialzellen sind, wird erstens durch ihr characteristisches Aussehen und zweitens noch durch den Umstand bewiesen, daß sie bei der physiologischen Injection von ammoniakalischem Carmin diesen Farbstoff in der gleichen Weise in sich aufnehmen, wie es die zu beiden Seiten des Herzens lagernden Zellen thun.

Überhaupt erscheinen die physiologischen Injectionen von Farbstoffen, welche es ermöglichen, die einzelnen Gewebe des Organismus deutlich zu differenzieren, wohl dazu geeignet, in der Zukunft einen Aufschluß über die räthselhaften Processe zu geben, welche die Verwandlungen der Insecten begleiten, und die Bedeutung der Leucocyten und anderer Zellen aufzuklären.

4. Preliminary Note on the Coralliidae of Japan.

By Kamakichi Kishinouye, Imperial Fisheries Bureau, Tokyo.

eingeg. 12. Mai 1903.

Recently I have got three new species of corals in addition to three species of them, already known to our fishermen and dealers. On examining these six different species of our corals, I found that five of them are new or little known to science. The three common species are found in the regions off southwestern coast of Kiūshū and southern coast of Shikoku, in the depth of 100—150 metres. These corals are extensively used for ornamental purposes. One useless species is also found in the same region off Shikoku. The two other species were obtained from a very deep ground, about 600 metres, near the entrance of Tokyo Bay, entangled to fishing line for „akō" (Sebastes matsubarae Hilgendorf).

Corallium japonicum n. sp.

Very finely branched in one plane. Short, prickle like branchlets on the front side or on the lateral sides of the branches. Polyps small, about 0,7 mm in diameter, and are only a little elevated. They are distributed in four or five rows and generally on the front side of the branches only.

Coenenchym thin, generally dark red in colour, but at the free

end of the terminal branches it is pinkish to white. Two kinds of spicules; eight radiate and cruciform. The eight radiate kind is about 0,05 mm in length and very numerous, while the cruciform kind is a little smaller in size and fewer in number.

Axis is finely striated and is normally dark red in colour with white centre, which is often found near the front side of the axis from the uneven growth of the calcarious substance around the colourless primary axis. There is a small pit in the axis underneath each polyp.

On the front side of the branches we find always some burrows. The burrow is open at three or four places and serves as a lodging place for a polychaetus worm. The burrow is about 9 mm in length and the diameter of its openings 1—2 mm.

About 300 mm in height and breadth, thick portion of the axis about 20 mm in diameter.

This species is closely allied to *C. stylasteroides* Ridley from Mauritius, but differs from it in colour, distribution of polyps, etc.

Known under the name of „aka-sango" and is the most abundant kind of the Japanese corals.

Corallium bōshūensis n. sp.

Finely branched in one plane, main branches laterally compressed. Polyps prominent, cylindrical. Coenenchym thin, light yellow in colour. Five kinds of spicules; eight radiate, cruciform, long warty spindles, double clubs and irregular forms. The eight radiate kind is most numerous. Axis entirely cream white, smooth without striation or pits.

Many large burrows for some commensal animal are found on the front side of the branches. These burrows are about 30 mm in length. They are different from those found in *C. japonicum* in having many large lateral openings, which are, however, closed with coenenchym.

About 200 mm in height, about 300 mm in breadth and 20 mm in diameter near the root.

I know one dry specimen only, got from a deep ground off Mera, Bōshū.

Corallium sulcatum n. sp.

Branched in one plane, some branches anastomose with each other. Coenenchym thin and it is light red in colour. Three or more kinds of spicules; eight radiate, cruciform and many irregular forms. The octoradiate form is most abundant. Axis smooth, pinkish in colour, variegated with lighter and darker colours. On the front side

of the branches, we find many longitudinal grooves. They are shallow and their margin is prickly. On smaller branches these grooves become cavities, quite similar to the burrows found in *C. bōshūensis.*

A fine specimen, about 300 mm in height, was hauled up from a deep bottom, off Mera, Bōshū.

This species resembles the two foregoing species, especially *C. bōshūensis*, but differs in colour, grooved branches, etc.

Corallium elatior (Ridley).

All branches in one plane, but they are more or less reflexed backward. Some branches anastomose with each other. Terminal branches are very fine. Polyps large, $1^1/_2$—2 mm in diameter, subhemispherical, arranged in about four rows and generally on the front side of the branches only. Coenenchym thick and firm, scarlet or vermilion in colour; but near the free end of growing branches it is light red or colourless. Three kinds of spicules; six radiate, seven radiate and double clubs. The seven radiate form is rare. Axis finely striated, normally red in colour with white centre. In general, there is a small pit in the axis underneath every polyp.

This species was determined by Ridley as a variety of *C. secundum* Dana; but examining photographs of Dana's type specimen, kindly sent to me from the United States National Museum, I see that the present species differs from the latter in the mode of ramification, absence of burrows in the axis, etc.

This species grows to an enormous size. Specimens of about one metre in height and about twenty kilogrammes in weight are sometimes obtained.

Known under the name of „momoiro-sango".

Corallium Kōnojōi n. sp.

Sparingly branched, generally in one plane. Branches often anastomose with each other. They are blunt and rounded at the free end. Polyps are unevenly distributed on the front side of the branches, crowded at the free end of the branches or on the prominences on them. Polyps are large, 2—3 mm in diameter, and are a little elevated. Coenenchym thick and firm, yellowish to reddish. The colour becomes lighter towards the root. Three kinds of spicules; six radiate, seven radiate and double clubs. Six radiate form, 0,09 mm in length, is most abundant. Very rarely eight radiate form is found. Axis weakly striated, milky white in colour with pinkish centre.

Grows to a size, about 300 mm in height.

This species is known under the name of „shiro-sango".

Named for Yebisuya Kōnojō who invented in 1836 a net for collecting corals and begun to collect them for the commercial purpose. He was a fisherman and lived in Muroto, Province of Tosa.

Corallium inutile n. sp.

Main branches in one plane, but smaller branches ramify in all directions. Branches often anastomose with each other. Polyps small, 1—1½ mm in diameter, slightly elevated and are distributed over all parts of the branches. Coenenchym thin but firm, light red in colour. Two kinds of spicules; six radiate and double clubs. The former kind is very few in number, while the latter predominates and forms almost the whole part of the coenenchym. The surface of this kind of spicules is quite smooth. Axis brittle, finely striated, entirely white, but a little tinged with red. Underneath each polyp, there is a small but deep in the axis.

We find always a kind of *Actinea* on the branches, living as a commensal.

This species is rare. Collected by Mr. T. Kitahara in the Province of Tosa.

120 mm in height and breadth.

Tokyo, 27 March 1903.

5. Bemerkung über das Plankton der Altwässer des oberen Jenissees.

Von W. Zykoff, Privatdocent der Zoologie an der Universität zu Moskau.

eingeg. 19. Mai 1903.

Herr Dr. P. P. Suschkin, dem ich auch hier meinen herzlichsten Dank bringe, war so liebenswürdig mir einige Planktonfänge zu geben, die er den 11.—12. August des vorigen Jahres in den Altwässern des oberen Jenissees am Berge Otich-Tasch, ungefähr 51° n. Br. und 93° 30′ ö. L. (von Greenwich) genommen hat. Diese Altwässer liegen zerstreut auf einer Wiese und stehen alle in Verbindung mit dem Jenissee, ihre Tiefe beträg um vier Meter. Da uns das Plankton der Flüsse Sibiriens völlig unbekannt ist, so bin ich der Meinung, daß das Verzeichnis, welches ich unten anführe, in zoogeographischer Hinsicht von Interesse ist. Es ist mir gelungen folgende Formen zu finden:

Mikrophyta.

Spirogyra sp.
Fragilaria virescens Ralfs.