# Caprellids (Amphipoda, Crustacea) from Shizuoka Prefecture, Japan

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## Introduction

Shizuoka Prefecture is situated at the near center of the Pacific Ocean side of the Main Island of Japan. To its east lies the Izu Peninsula. This peninsula faces Sagami Bay on the east side and Suruga Bay on the west.

Suruga Bay extends to the northward from the line that connects the southern tip of the Izu Peninsula to the Omae Point. At the near center of the bay, a trench of more than 1,000m in depth is extending from south to north; and to its west lie two shallow and small protrusions of the sea bottom at depths ranging from 100 to 200m.

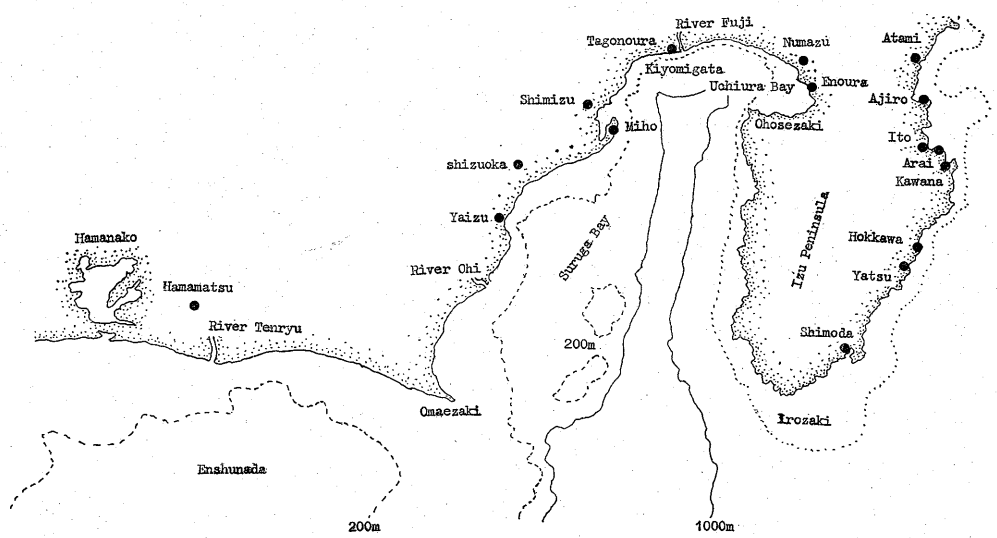


Fig. 1. Locations of collecting caprellids in the sea areas of Shizuoka Prefecture

The western area of Suruga Bay is called the Sea of Enshu. The Sea of Enshu extends by more than 180km northward from the line connecting the tip of the Izu Peninsula to the Shima Peninsula. The bottom of the Sea of Enshu is 100 to 200m deep; and especially the sea bottom of the coastal zone to the eastward of the River Tenryu consists of sandy soil and many sand dunes also are found on the beach of this zone. As described above, Shizuoka Prefecture has two sea areas which are strikingly different from each other.

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The temperature of sea water of the Sea of Enshu is greatly affected by the cold water of the River Tenryu in the winter. The surface water temperature near the estuary of the river drops to more or less 14°C, making this area the coldest one in the whole area of the Sea of Enshu. Whereas the surface water temperature of this area rises to 25 to 27°C in the summer, making this area the hottest one in the whole area of the Sea of Enshu.

Suruga Bay is deeper and affected by the "Kuroshio" current. Therefore, the range of sea water temperatures of the bay during the whole year is smaller than that of the Sea of Enshu. The surface sea water temperature at Suruga Bay is 14 to 15°C in winter and around 25°C in summer. The chlorine content of sea water in Suruga Bay is around 19‰ in winter and drops to around 18‰ in summer due to rainfall. Since its sea water is warmer and higher in chlorinity, Suruga Bay may be called the oceanic bay.

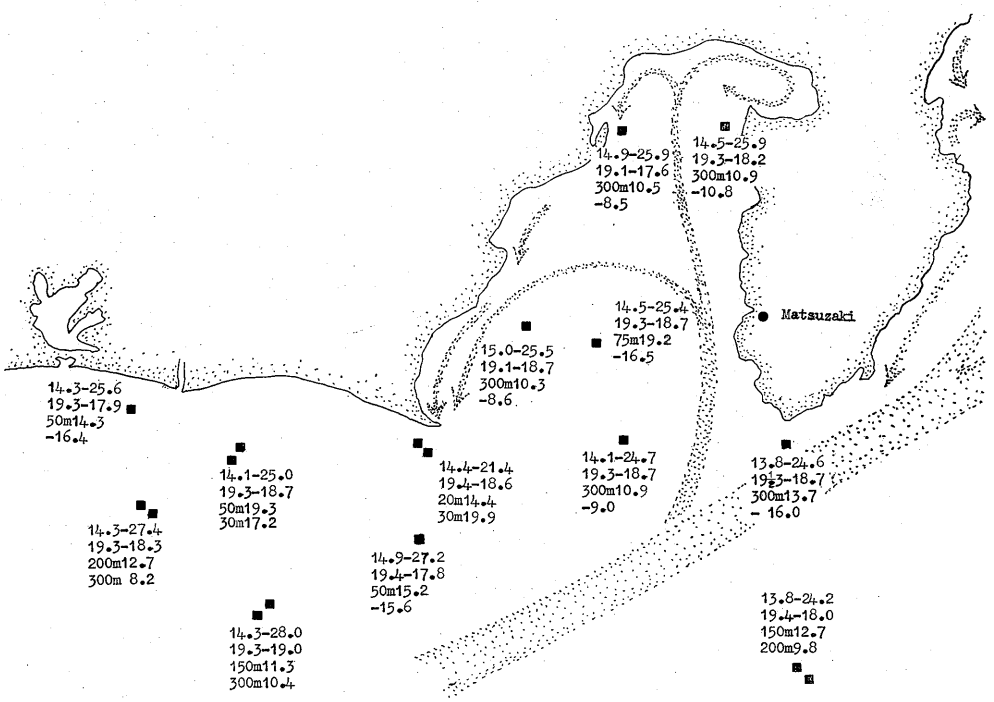


Fig. 2. Water temperatures at some stations in the sea areas of Shizuoka Prefecture.
Temperature at the water surface (figures on the uppermost row indicate water surface temperatures in January and August). Chlorinity (figures on the second row indicate the values of chlorinity on the water surface in January and August), Water temperatures at the deepest portion (figures on the third row) out of the measured depths, and the flow "Kuroshio" are shown.

Kiyomi Lagoon and Uchiura Bay which lie to the northward of the line that connects the seacoast of Miho (Shimizu City) and the Ohose Point of the Izu Peninsula are enclosed bays, because the River Fuji unloads its water into these two sea areas and sea water flow in these areas is insignificant.

Tidal currents in the sea areas of Shizuoka Prefecture are affected by the "Kuroshio" current. A branch current of "Kuroshio" changes its direction off the shore of the Iro Point and flows along the west coast of the Izu Peninsula. A part of the tip of the branch current turns to the east towards Numazu at the east tip of Tagonoura, goes round Enoura, flows the Ohse Point again to Tagonoura, and finally proceeds towards the Omae Point via Lagoon Kiyomi. There is also a current which flows off the shore of Matsuzaki towards Yaizu, turns to the south and goes to the Omae Point. The east coast of the Izu Peninsula belongs to the western sea area of Sagami Bay, and a part of the branch current of "Kuroshio" is flowing back at various places off the seacoast.

The "Oyashio" current disappears off the coast of Chiba Prefecture and sometimes in Sagami Bay. In the winter, however, a part of the "Oyashio" current which has flowed down to the south sinks below "Kuroshio" near Chiba, reaches a depth of about 700 m, passes through Sagami Bay while taking the shape of a band and sometimes reaches the vicinity of Mie Prefecture (CSK Atlas 1968).

As mentioned above, the sea areas of Shizuoka Prefecture consist of the Sea of Enshu which is of a shallow-sea type, Suruga Bay which is of an oceanic type and Lagoon Kiyomi and Uchiura Bay which are of an enclosed-bay type. Therefore, the biota of the sea areas of Shizuoka Prefecture varies from location to location.

At the oceanic bay of Suruga, oceanic fish comes in and bonitoes, tunas, tiny shrimps and agar-agars are sometimes caught; whereas in the enclosed-bay areas, in bygone days farming of lavers and oysters was carried out. Along the coast of the Sea of Enshu, waves are too high and the sea bottom consists of sand; sardines are caught in this area.

On the east coast of Izu Peninsula, fishing is brisk, and along the coastal area, agar-agar collection is carried out on a large scale, and mackerels and sardines are many times caught.

Caprellids were collected mainly at the Izu Peninsula and its vicinity. Collection of caprellids in the sea of Enshu and in the shallow sea was not satisfactory.

**Acknowledgements**

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## List of Native Caprellids of Shizuoka Prefecture

The caprellids of Shizuoka Prefecture mostly belong to the warm-water type. The number of species of the caprellids of Shizuoka Prefecture which have been so far collected is not so many.

Expectations are entertained of discovering many deep-sea caprellids of the Sea of Suruga Bay in future.

1. Caprella (Spinicephala) californica STIMPSON, 1856
   *Neocalifornia-warekara* (ARIMOTO)

*Type locality:* Hongkong (MAYER, 1903).

Off Arai. 1 male. Jun. 20, 1968. Tsunetaro KITAJIMA, Fishermen's Cooperative Association Arai coll., coll. no. 39. (ARIMOTO, 1971 : 45).

2. Caprella (Rostrhicephala) equilibra SAY, 1818
   *Kubinaga-warekara* (UTINOMI)

*Type Locality:* South Carolina.

Off Arai. 17 males, 1 female. May 22, 1968. Tsunetaro KITAJIMA, Fishermen's Cooperative Association Arai coll., coll. no. 266. (ARIMOTO, 1971 : 16); Off Yatsu. 1 male. Jun. 7, 1968. Fuji Fishery Company's Yatsu coll., coll. no. 279. (ARIMOTO, 1971 : 16); Off Ito. 23 males, 1 female. Jun. 25, 1968. Ito Branch of Shizuoka Experimental Station coll., coll. no. 301. (ARIMOTO, 1971 : 16); Ajiro Bay. 3 males, 1 female. May 25, 1968. Tomoyoshi NAKAZAI, Ajiro Fishery Company coll., coll. co. 26. (ARIMOTO, 1971 : 16); Off Arai. 1 male. Jun. 20, 1968. Tsunetaro KITAJIMA, Fishermen's Cooperative Association Arai coll., coll. no. 65. (ARIMOTO, 1971 : 16); Off Kawana. many males and females. Jun. 20, 1969. Shuichiro ISOKAWA, Fishermen's cooperative Association Kawana coll., coll. no. 347, 248, 349 and 350. (ARIMOTO, 1971 : 16); Off Kawana, depth 40m. 2 females. Apr. 20, 1973. Norimasa OYAMA coll.

3. Caprella (Spinicephala) gigantochir MAYER, 1903
   *Tenaga-warekara* (UTINOMI)

*Type localities*: Enoura and Nagasaki (MAYER).

Off Enoura. Apr. 1896. (MAYER, 1903 : 103).

4. Caprella (Caprella) japonica (SCHURIN), 1935
   *Nippon-warekara* (ARIMOTO)

*Type locality*: Peter the Great Bay, Sea of Japan.

Coast of Suzaki (Shimoda). 2 makes, 2 females. Takashi TOKIOKA coll., (UTINOMI 1947 : 70).

5. Caprella (Rostrhicephala) penantis LEACH, 1814
*Maruera-warekara* (UTINOMI)

*Type locality:* Devonshire Coast, England.

Off Ito, many males and females. May 1968. Ito Branch of Shizuoka Fisheries Experimental Station coll., coll. no. 220. (ARIMOTO, 1971 : 20); Off Kawana, many males and females. May 1968. Shuichiro ISOKAWA, Kawana Fishermen's Cooperative Association coll., coll. no. 241. (ARIMOTO, 1971 : 20); Off Kawana. many males and females. Jun. 1968. Shuichiro ISOKAWA, Kawana Fishermen's Cooperative Association coll., coll. no. 243. (ARIMOTO, 1971 : 20); Off Yatsu. many males and females. May 1968. Fuji Company's Fishery Yatsu coll., coll. no. 247, 248. (ARIMOTO, 1971 : 19); Off Hokkawa, many males and females. Fishing Ground of Hokkawa Fishermen's Cooperative Association coll., coll. no. 261. (ARIMOTO, 1971 : 20); Off Arai, many males and females. May 22, 1968. Arai Fishermen's Cooperative Association coll., coll. no. 264, 265. (ARIMOTO, 1971 : 19); Off Yatsu. many males and females. Jun. 7, 1968. Fuji Fishery Company's Yatsu coll., coll. no. 277 and 278. (ARIMOTO, 1971 : 19, 20); Off Ito. many males and females. Jun. 25, 1968. Ito Brach of Shizuoka Fisheries Experimental Station coll., col. no. 299 and 300. (ARIMOTO, 1971; 19, 20); Off Ajiro, many males and females. Jun. 7, 1968, Tamotsu MONMA, Ajiro Fishery Company coll., coll. no. 305, 306. (ARIMOTO, 1971 : 19, 20); Off Ajiro, many males and females. May 1968. Tomoyoshi NAKAZAI, Ajiro Fishery Company coll., coll. no. 37, 307. (ARIMOTO, 1971 : 19, 20); Off Arai, many males and females. Jun. 20, 1968. Tsunetaroa KITAJIMA, Arai Fishermen's Cooperative Association coll., coll. no. 65, 72. (ARIMOTO, 1971 : 16, 20, 308); Off Yatsu, many males and females. Jun. 25, 1968. Fuji Fishery Company's Yatsu coll., coll. no. 309. (ARIMOTO, 1971 : 20); Off Mera, 7 males. Kenichi EBINA coll., coll. no. 91. (ARIMOTO, 1971 : 19); Off Kawana, many males and females. Jun. 21, 1969. Shuichiro ISOKAWA, Kawaea Fishermen's Cooperative Association coll., coll. no. 347, 350, 351, 353, 354, 355, 356. (ARIMOTO, 1971 : 19).

6. Caprella (Spinicephala) scaura diceros MAYER, 1890
*Toge-warekara* (IWASA)

*Type locality*: Off Kobe.

Enoura, (MAYER, 1903).

7. Caprella (Spinicephala) simia MAYER, 1903
*Kamate-warekara* (UTINOMI)

*Type localit*: Enoura and Nagasaki.

Enoura and Nagasaki. (MAYER, 1903).

8. Caprella (Rostrhicephala) tsugarensis UTINOMI, 1947
*Tsugaru-warekara* (Utinomi)

*Type localit:* Asamushi.

Off Yaizu. 1 male. Mar. 1968. Yaizu High School of Fisheries coll., coll. no. 195.

(ARIMOTO, 1971 : 46).

9. Protomima imitatrix MAYER, 1903
*Mukasi-warekara* (UTINOMI)

*Type locality*: Enoura.

Enoura. (MAYER, 1903 : 22).

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——, 1971, Ditto. 2. Ibid., 26(3) : 13–20.
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