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Outline of Oceanographic Conditions in the Northwestern Pacific during the Summer of 1995

by

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Outline of Oceanographic Conditions in the Northwestern Pacific during the Summer of 1995

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Abstract

Oceanographic conditions in the north Pacific during the summer of 1995 were examined using data obtained from salmon research vessels. Judging from cross sections of temperature and salinity, Western Subarctic Water that is colder water appearing in mid depth spread eastward stronger than normal, and it spread southward weaklier than normal. Anomalies of SST were positive north of 45N.

Introduction

Oceanographic conditions in the northwestern Pacific during the summer of 1995 were examined using data on water temperature and salinity obtained from 7 salmon research cruises, as in previous years. Extension of the Western Subarctic Water and sea surface temperature, which characterizes the oceanographic conditions in the northwestern Pacific, were examined.

Materials

The total number of oceanographic stations was 224 (June:91, July:112). Figure 1 shows the locations of oceanographic stations in the northwestern Pacific during the summer of 1995. For additional data on sea surface temperature, "Monthly Ocean Report" of the Japan Meteorological Agency was used.

Results

1. Western Subarctic Water (WSW)

Figure 2 shows several sections of temperature and salinity in 1994 and 1995. Figures 2-2a-d show the cross sections along 179.5E. There was the least saline water near 51N surface, affected by the Alaska Current. Since cold water less than 3℃ and 33.1-33.5 psu existed in 125m-200m deep from 47N to 50N. This cold water, called the Western Subarctic Water (WSW), spread along the halocline. The depth of lowest temperature of WSW in 1995 was about 150m, and it was deeper than those from 1992 to 1994, which were distributed from 90m to 130m. The eastward extension of the WSW was stronger than normal. This water also existed around 100m deep north of 42N in line A (56.3N-177.3E to 40N-150E). The southward extension of WSW was considerably weaker than normal, because this water reached 48N along 165E line.

2. SEA SURFACE TEMPERATURE (SST)

Figure 3 shows the anomalies of SST in June and July. Anomalies are calculated with respect to the monthly mean values from 1961 to 1990. Negative SST anomalies prevailed south of 45N, and anomalies more than 1℃ below normal were observed between 30N and 45N from 170W to 150W. SSTs were normal or slightly high north of 45N.

References

Japan Meteorological Agency 1995: Monthly Ocean Report. No.30, 31.

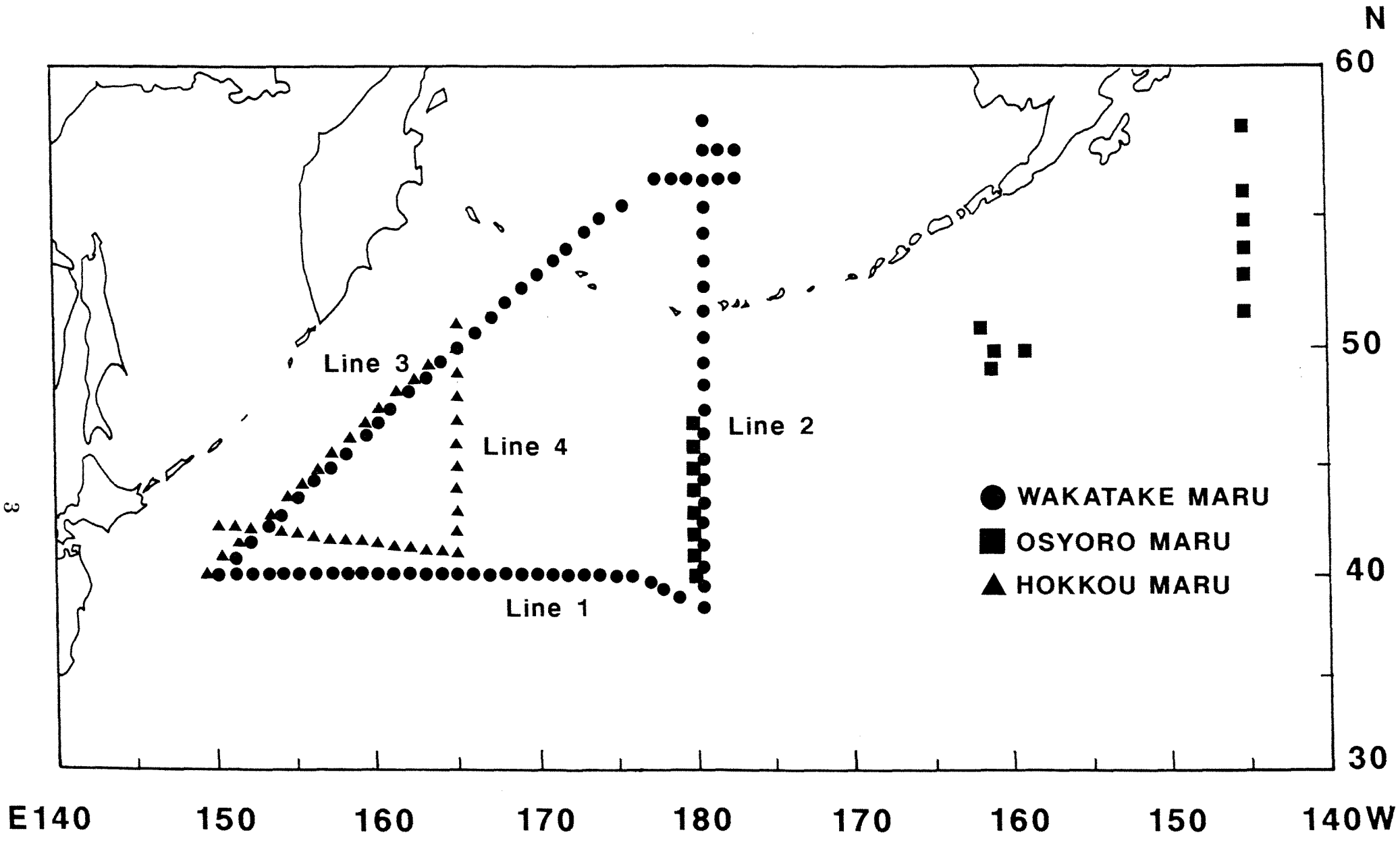


Fig.1 Locations of Oceanographic Stations.

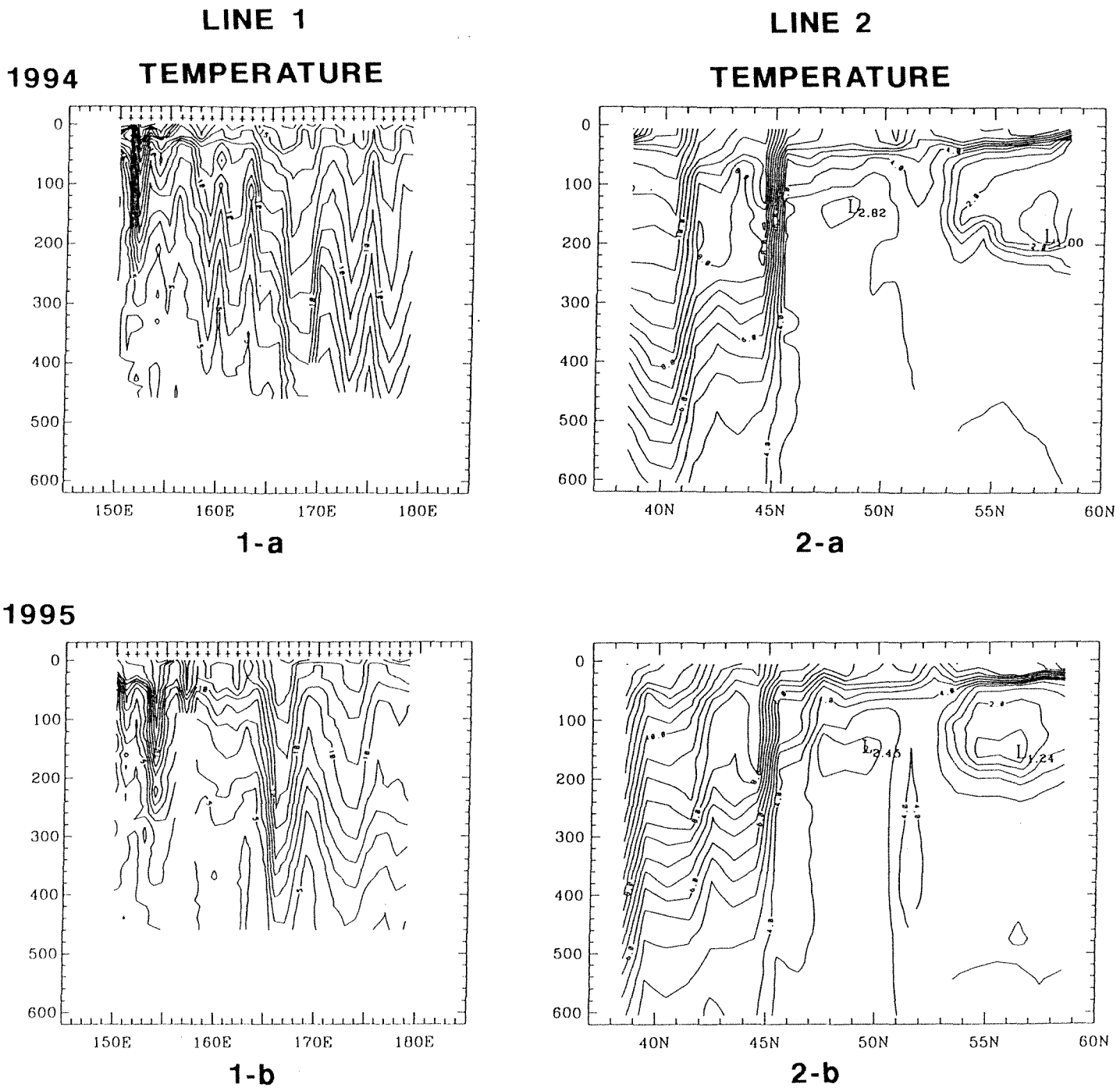
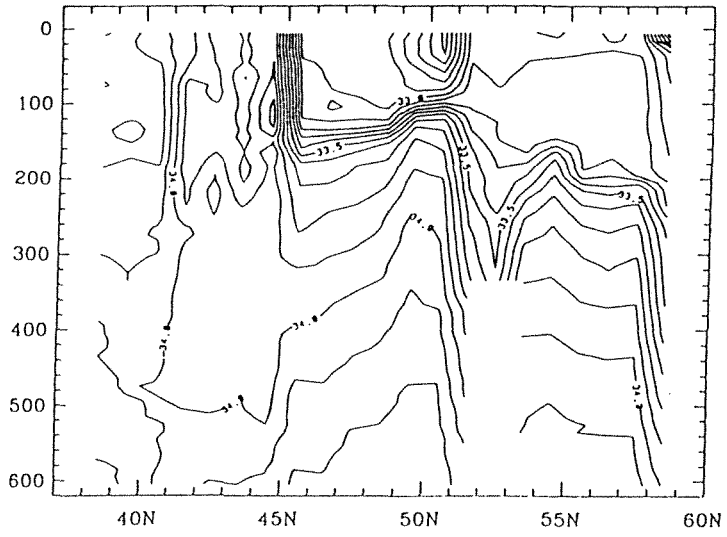


Fig.2 Isotherms in 1994 and 1995 on the vertical sections along line 1(1-a,b), line 2(2-a,b), and line 3 (3-a,b). Isohalines along line 2 in 1994(2-c) and 1995 (2-d). The contour interval of temperature is idegree and that of salinity is 0.1.

LINE 1

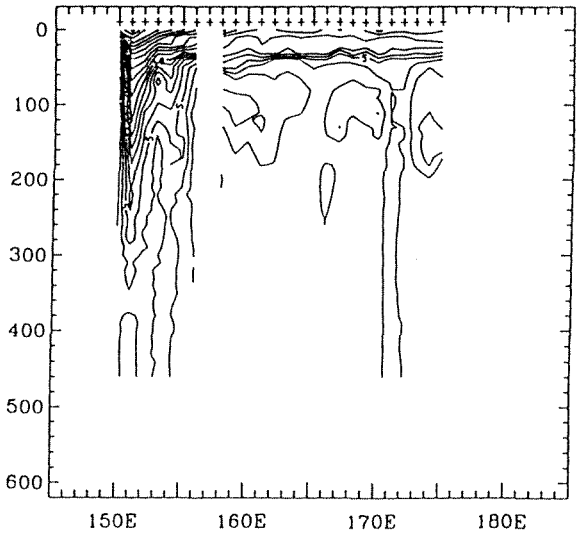
1994 SALINITY



2-c

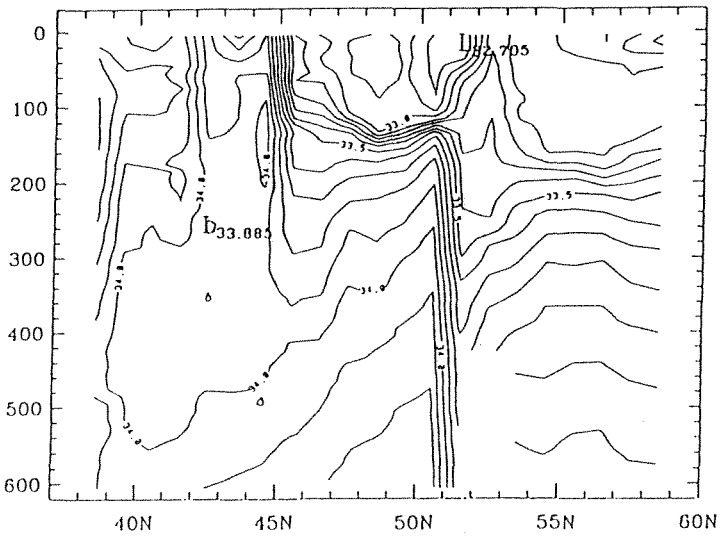
LINE 3

TEMPERATURE

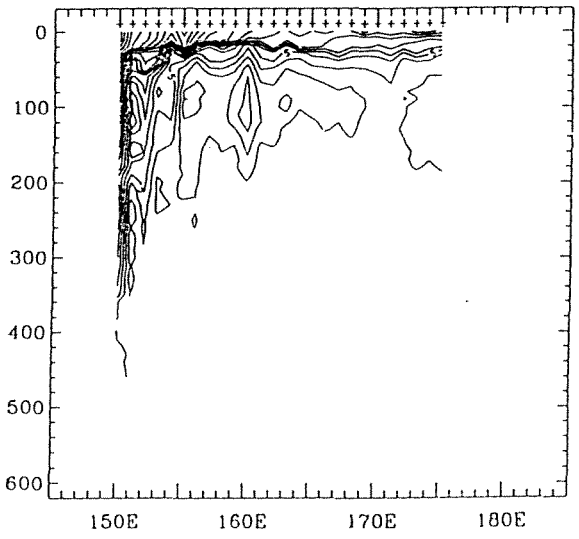


3-a

1995



2-d



3-b

Fig.2 (Continued)

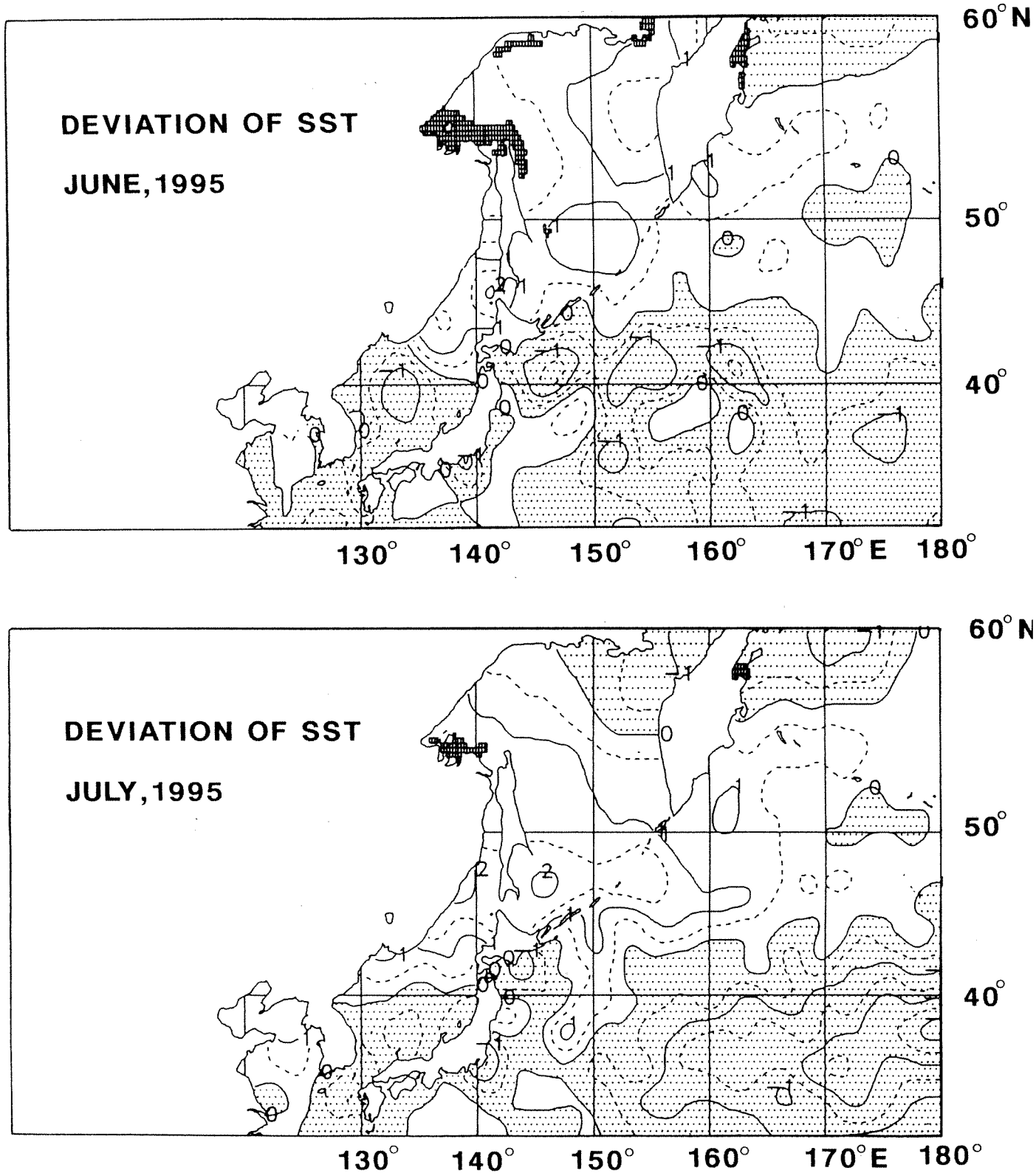


Fig.3 Anomalies of the sea-surface temperature in June and July, 1995. Anomaries are calculated from the monthly mean of 1961-1990.
(From Monthly Ocean Report, No.30,31)