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**Outline of oceanographic conditions in the Northwest
Pacific during the summer of 1989**

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1989年夏季の北西太平洋における海況概要

Outline of oceanographic conditions in the Northwest Pacific during the summer of 1989

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要 旨

1989年6月、7月の北西太平洋の海況について、さけ・ます調査船のデータを用いて解析を行った。100 m層水温で見ると、両月とも寒冷水である Western Subarctic Water の南方及び東方への張り出しは弱く、暖水の勢力が強かった。一方、表面水温は6月は平年並、7月は平年よりやや低温であった。

はじめに

1989年夏季における北西太平洋の海況について、例年と同様水温資料により解析を行った。ここに用いられた水温資料は、主にさけ・ます調査船12隻によって得られたものである。解析に使用した観測点は、6月214点、7月176点であった(Figs. 1, 2)。その他に表面水温資料としては「海況旬報」(気象庁発行)を使用した。

北西太平洋の海況を特徴づけるものとして、Western Subarctic Water の広がりや表面水温に注目して検討した。なお、例年 Alaskan Stream の勢力についても検討を行っていたが、本年は米国200カイリ内での観測が実施できなかったため検討できなかった。

1. Western Subarctic Water

Western Subarctic Water は、冬季の表層冷却に起因する寒冷水で、カムチャッカ半島、千島列島の東方域を中心にして北西太平洋に広く分布している。そしてこの寒冷水が、冬季から夏季にかけて、東方および南方に張り出ししてくるのがこの海域の特徴である。特に例年165°Eから170°E付近で寒冷水の南方張り出しが見られ、これはコマンドルスキー冷水舌と呼ばれている。ここでは例年と同様100 m層の3°C以下の冷水をこの水系として取り扱い、その南方および東方への張り出しからこの冷水系の勢力について検討した。

6月(Fig. 3) : 3°C以下の冷水は167°Eで45°N付近までしか南下しておらず、また2°C以下の寒冷水もその分布は北偏しており、Western Subarctic Water の南方張り出しは平年より弱

かった(Fig. 5)。コマンドルスキー冷水舌は 4°C の等温線にのみその姿をとどめている。東方への張り出しは、3°C 以下の冷水の分布は 46° N 付近において 175° E までとなっており、平年をやや下回っている。一方暖水の勢力は強く、特に 180° 付近では 45° N まで 6°C 台の暖水が見られる。

7 月(Fig. 4)：コマンドルスキー冷水舌は 5°C の等温線にのみその形をとどめている。例年観測される 3°C 以下の冷水の南下も見られず、6 月同様南方への張り出しは弱い。東方への張り出しは観測点が少ないためはつきりしないが、やはり平年よりやや弱かったものと考えられる。

2. 表面水温

Fig. 6 に本年 6 月、7 月の表面水温平年偏差図を示す。平均値とは過去 30 年間(1956-1985)の各月毎の平均値である。6 月の北西太平洋の表面水温はほぼ平年並であったが、部分的に 1°C 以上低温の海域も見られる。7 月にはいと 1°C 以上平年を下回る海域が拡大し、42° N を中心に平年よりやや低温となった。

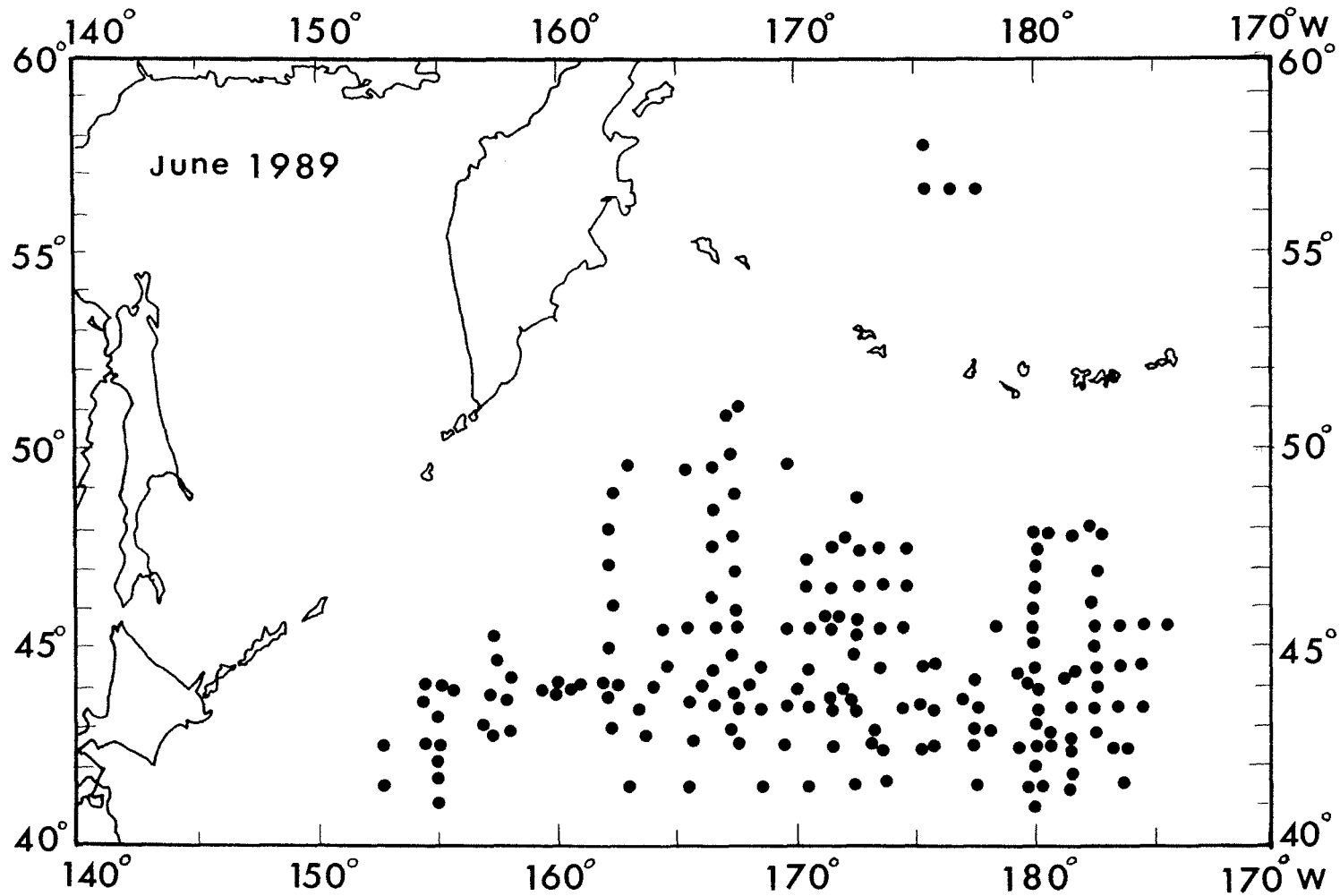


Fig.1 Locations of oceanographic stations (June,1989)

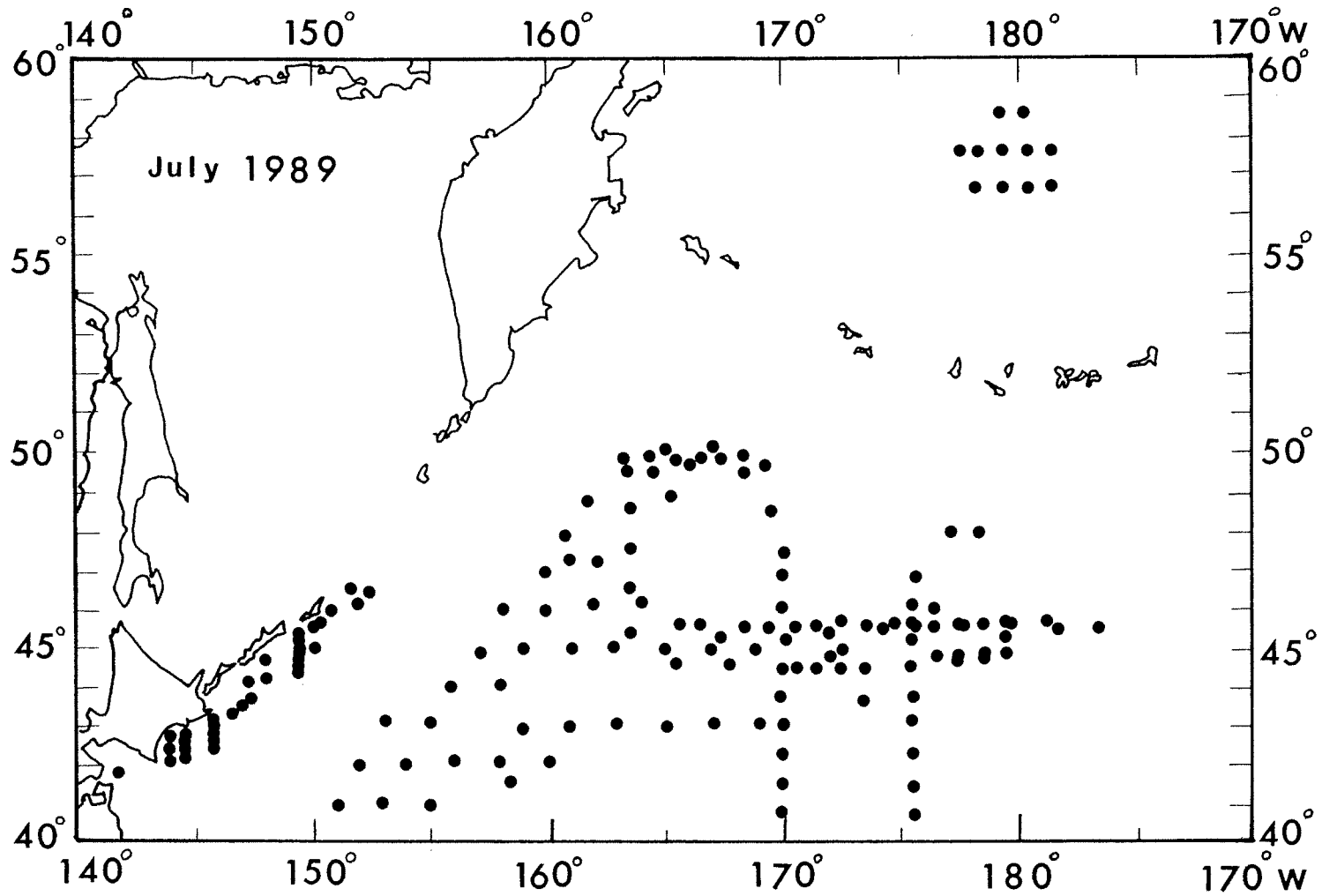


Fig.2 Locations of oceanographic stations(July,1989)

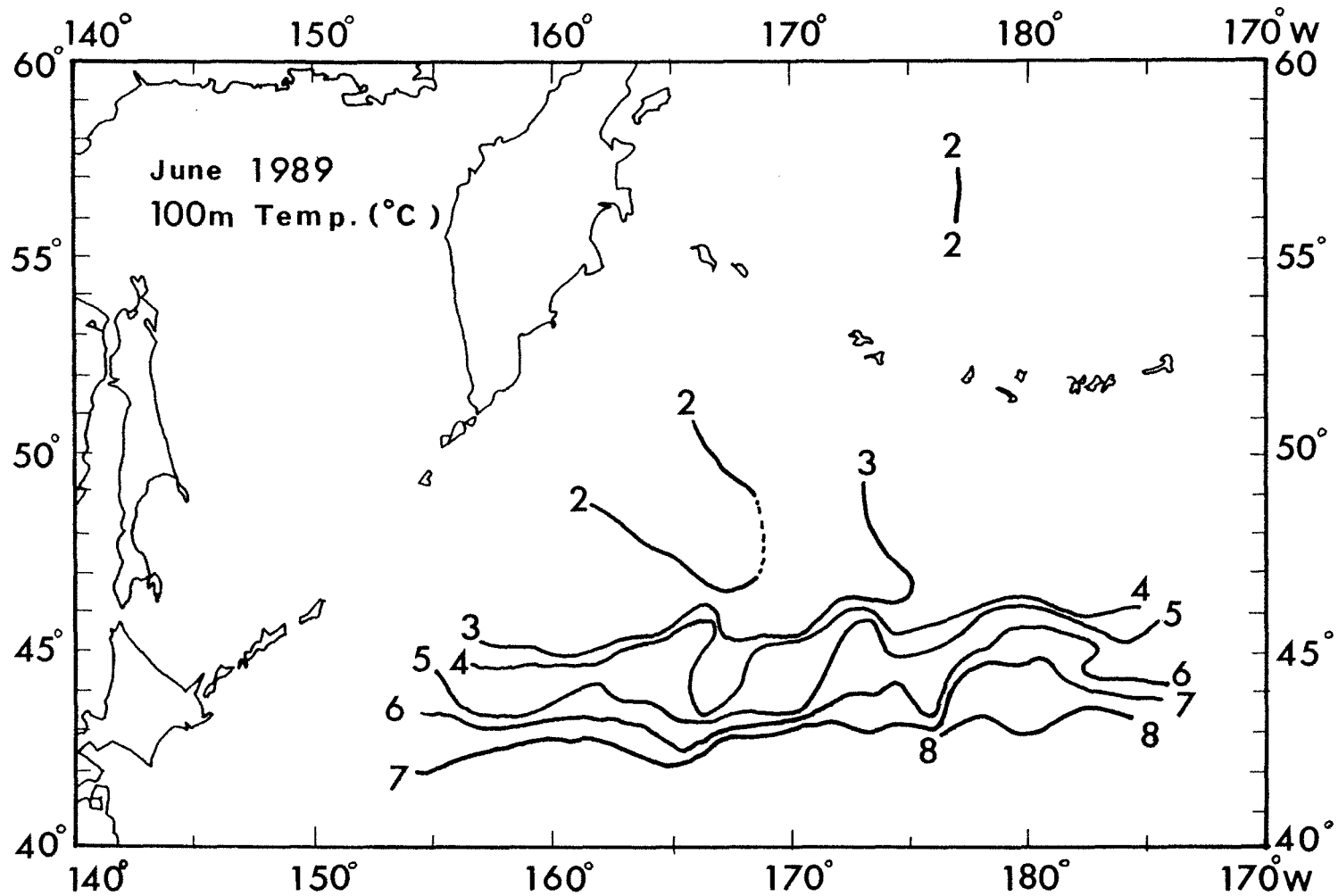


Fig.3 Temperature distribution at 100m layer in June, 1989

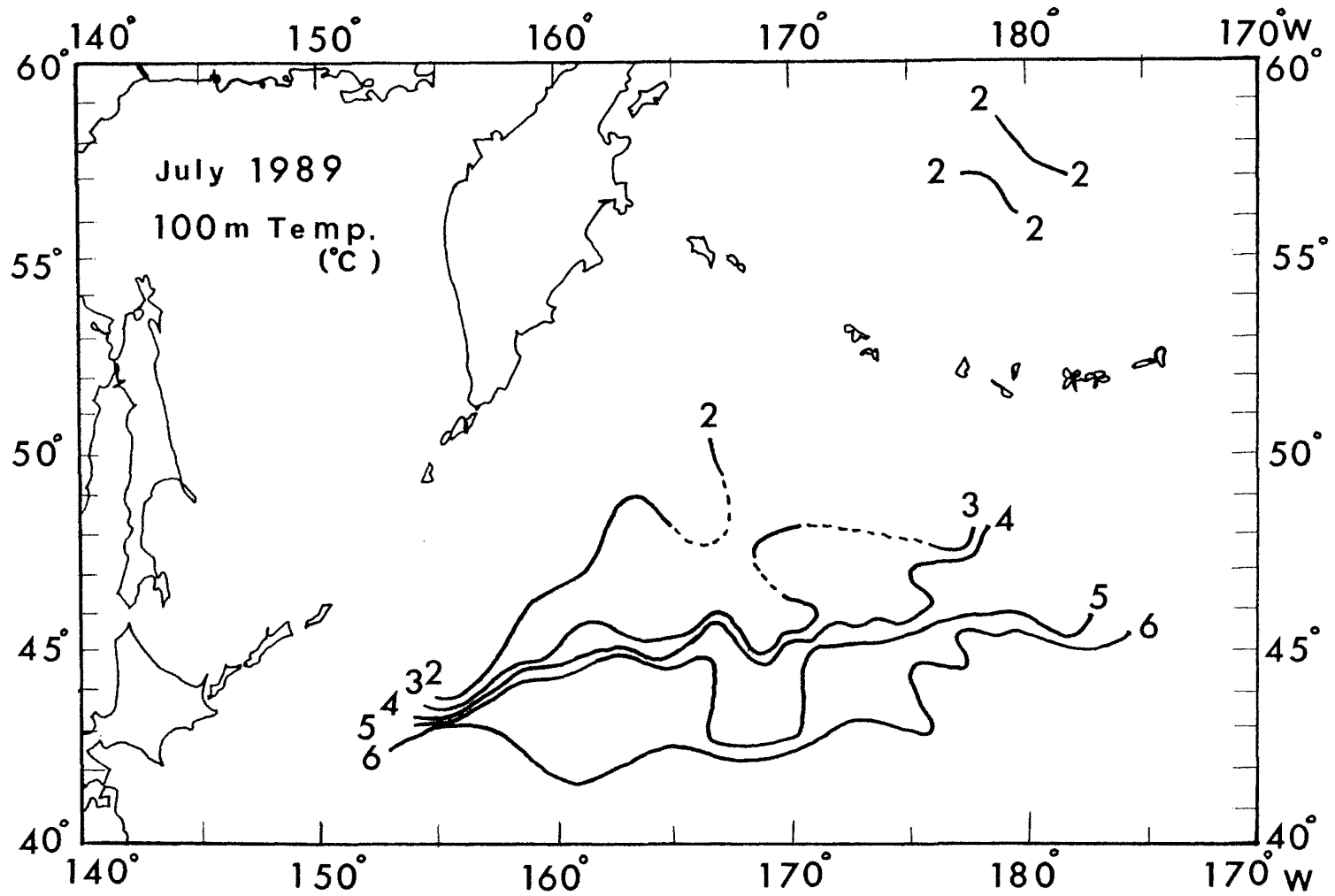


Fig.4 Temperature distribution at 100m layer in July, 1989

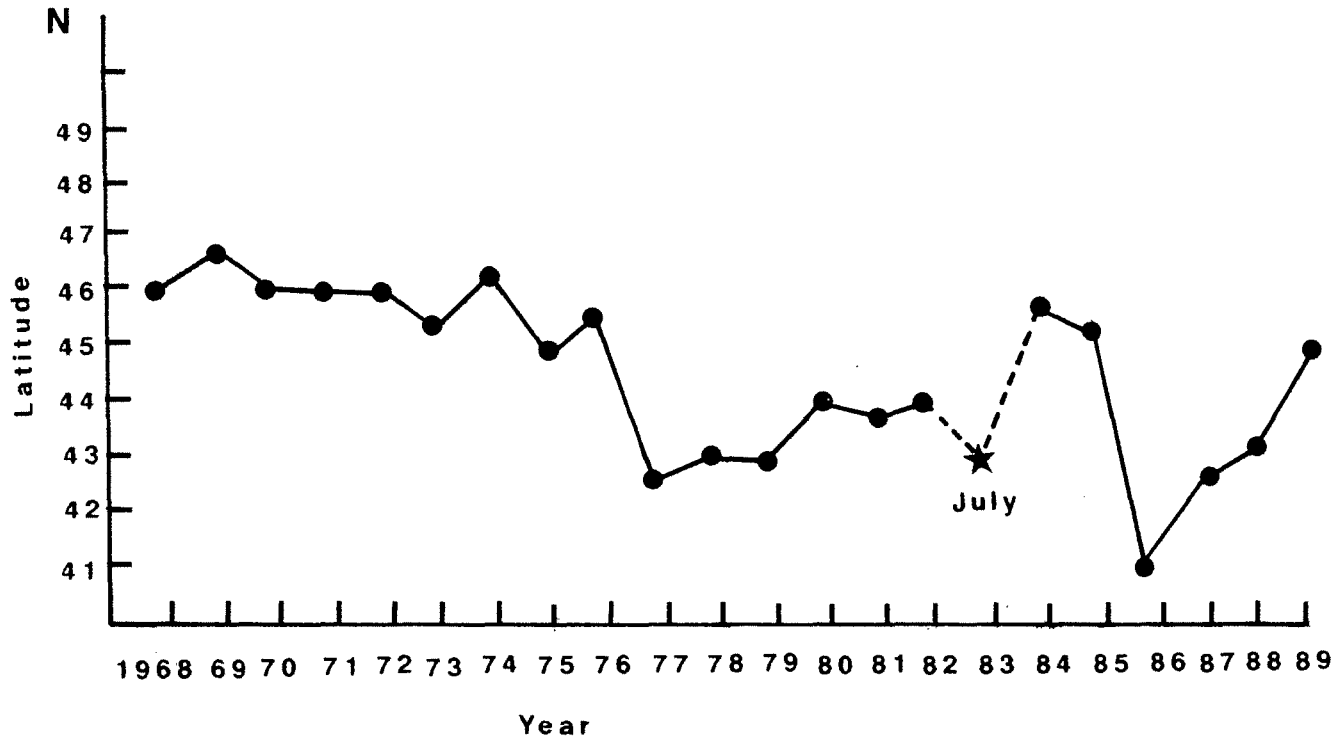


Fig.5 Annual fluctuation of southward extension of Komandrskie tongueshaped cold water in June indicated 3°C isothermal at 100m depth.

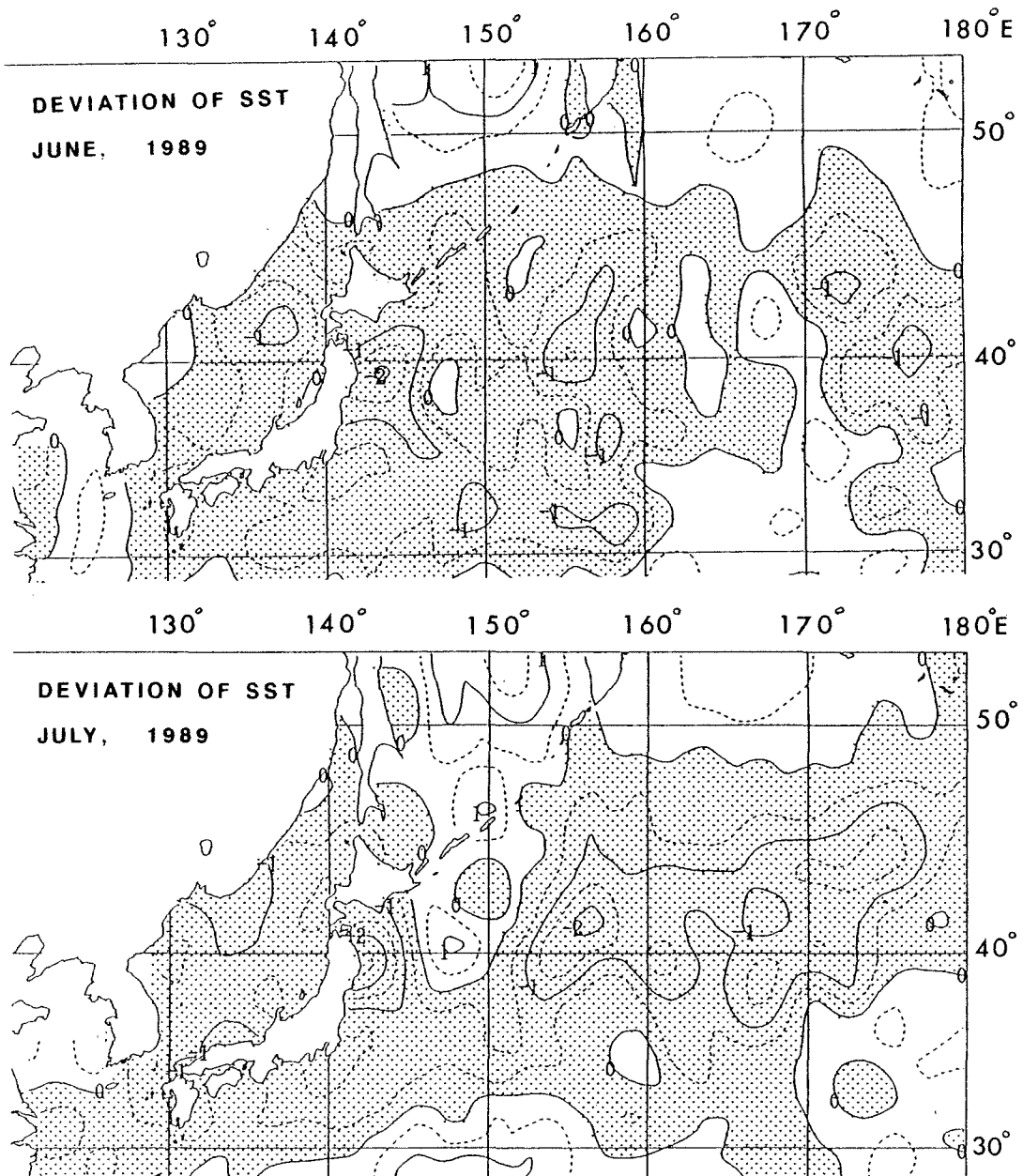


Fig.6 Deviation of the sea-surface temperature in June, July, 1989 from the monthly mean for 30 years 1956-1985. (From The Ten-Day Marine Report, No.1538,1541)

TRANSLATION

**OUTLINE OF OCEANOGRAPHIC CONDITIONS IN THE
NORTHWEST PACIFIC DURING THE SUMMER OF 1989**

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Fisheries Agency of Japan**

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OUTLINE OF OCEANOGRAPHIC CONDITIONS IN THE
NORTHWEST PACIFIC DURING THE SUMMER OF 1989

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ABSTRACT

Oceanographic conditions in the northwestern Pacific in June and July, 1989, were examined using data obtained from the salmon research vessels. Judging from water temperature in depths of 100 m, the southward and eastward extensions of the Western Subarctic Water which is cold water were weak, and strength of warm water was strong. While the surface water temperature was normal in June, in July it was somewhat lower than that in previous years.

Introduction

Oceanographic conditions in the northwestern Pacific during the summer of 1989 were examined using data on water temperature as in previous years. Data used here was obtained mainly from twelve salmon research vessels. Observation stations used in the analysis were 214 stations in June, and 176 stations in July (Figs. 1 and 2). For additional data on surface water temperatures "The Ten-Day Marine Report" of the Meteorological Agency of Japan was used.

Extension of Western Subarctic Water and surface water temperature which characterized the oceanographic conditions in the northwestern Pacific were examined. In addition, although the strength of the Alaskan Stream has been discussed in previous years, it was not discussed this year because the observations in the U.S. 200 miles zone were not allowed this year.

1. Western Subarctic Water

Western Subarctic Water is a cold water mass produced by surface cooling in winter that is widely distributed in the northwestern Pacific, centering off the eastern areas of the Kamchatka Peninsula and the Kuril Islands. A feature of this area is the southward and eastward extensions of this cold water from winter to summer. In particular, the southward extension of cold water observed almost every year between 165° and 170°E is called "The Komandorskie Cold Tongue". In this report, the cold water mass with temperature of 3°C or less at 100 m depth is identified as Western Subarctic Water, we examined the strength of Western Subarctic Water based on its southward and eastward extensions as in previous years.

June (Fig. 3): Cold water with a temperature of 3°C or less reached to only about 45°N at 167°E and cold water with a temperature of 2°C or less extended toward the north and southward extension of the Western Subarctic Water was weaker than those in normal years (Fig. 5). The Komandorskie Cold Tongue maintained its shape only on an isothermal line of 4°C. In the eastward extension, cold water with a temperature of 3°C or less reached about 175°E at about 46°N, this was somewhat lower than that in an average year. On the other hand, the strength of warm water was strong, and in particular, at about 180°, warm water of 6°C was observed as far as 45°N.

July (Fig. 4): The Komandorskie Cold Tongue maintained its shape only on an isothermal line of 5°C. The southward extension of cold water with a temperature of 3°C or less which was usually observed in normal years was not observed, and the southward extension was as weak as in June. Although the eastward extension was not clear because there were only a few observation stations, it is considered that the eastward extension was somewhat weaker than that in a normal year.

2. Surface water temperature

Fig. 6 shows deviation of the sea-surface temperature in June and July. The mean value is the monthly mean for the past 30 years (from 1956 to 1985).

Surface water temperature of the northwestern Pacific in June was almost the same as in a normal year, the areas with a temperature of 1°C or lower were observed here and there. In July, the areas with a temperature of 1°C or lower than in a normal year expanded, in the vicinity of 42°N, the temperature was somewhat lower than normal.

References

Japan Meteorological Agency. The Ten-Day Marine Report. No. 1538, 1541.

Figs. 1 to 6 are in English in the Japanese document.