1985年夏季の北西太平洋における海況概要

Outline of oceanographic conditions of the Northwest Pacific during the summer of 1985.

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1985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8隻、さけ・ます母船4隻によって得られたものである。本年は例年に比べると、調査期間が短く、北西太平洋を広域的に把握できるのは、6月・7月の2カ月のみであった。観測点数は、6月153点、7月235点であった。その他に表面水温資料としては「全国海況旬報」（気象庁発行）を使用した。北西太平洋におけるさけ・ますの分布・回遊はWestern Subarctic Water，Alaskan Stream および表面水温の影響をうけることが知られていることから、これらの性状に注目して検討した。

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。ここでは例年と同様100 m 層の3℃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. 1）：例年165°E～170°E付近で寒冷水の南方張り出し（コマンドルスキー冷水舌）がみられるが、本年においては、4℃の等温線は明確な南方張り出しのパターンを示しているが、3℃以下の冷水域は小さく例年に比べてこの冷水舌の水温は相対的に高い。3℃ラインでこの南方張り出しの強さをみると、167°Eにおいて45°20′Nと昨年同様北偏位置にある。（Fig.3）

Western Subarctic Water の東方張り出しは、3℃ラインをその指標とすれば、48°Nで176°Eまで及んでいるが、47°N，172°E付近に3℃以上の暖水域が存在し、主体をなす分布域

この文書を引用する場合は下記による。

平松一彦．1985．　1985年夏季の北西太平洋における海況概要
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は170°E付近までで、例年に比べると西に偏り、この水の東方張り出しは弱かったことを示唆している。

7月（Fig.2）：一般にWestern Subarctic Waterは冬季から夏季にかけて表層から次表層へ、カムチャッカ南東域よりその東方、南方域へと広がる傾向がある。本年においても6月より7月の方がやや寒冷水が広がっている。

コマンドルスキー冷水舌の張り出しは3℃ラインでみて45° 20' Nと、6月とほぼ変化はないが、47°N，172°E付近にみられた3℃以上の暖水は消滅し、寒冷水の東方への張り出しは176°Eにまでおよんでおり、これはほぼ平年並である。

2. Alaskan Stream

Alaskan Streamは、アラスカ湾域よりアリューシャン列島南方沿いを西行する相対的高温水としてとらえることができる。この流れの勢力を把握する一つの方法としてアリューシャン列島南方沿いにみられる100 m層の4℃以上の水系について検討した。

6月（Fig.1）：Alaskan Streamが出現すると考えられる水域でのデータが少ないため、この流れの性状については定かではない。

しかし、東方からの連続性は明らかでないが、4℃以上の水が169°E付近にまでみられる。この位置は西方への貫入が大きい部類に属し、昨年、一昨年と同様、Alaskan Streamの勢力が強かったものと想定される。（Fig.4）

7月（Fig.2）：6月と同様東方からの連続性は明らかでないが、170°E付近まで4℃以上の暖水域がみられる。この西端部は6月とほぼ同位置にあり、Alaskan Streamの勢力は6月とほぼ同様と推察される。

3. 表 面 水 温

Fig.5、6に本年6月、7月の表面平均水温平年偏差を示す。平年値とは過去30年間（1951～1980）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平年よりやや低温であるが、千島列島の南東には平年よりやや高温の水域もみられる。

7月にはいると低温傾向は著しく、北西太平洋全域にわたって平年よりも1、2度低くなっている。

以上に述べた1985年夏季の北西太平洋の海況概要は次のように要約される。

1. Western Subarctic Waterの張り出しは、南方・東方とも平年よりやや弱かった。
2. Alaskan Streamの西方張り出しは、平年よりやや強かった。

3. 表面水温は平年より低温であった。特に6月から7月にかけての昇温が小さく、7月は北西太平洋のほぼ全域にわたって平年より低温となった。

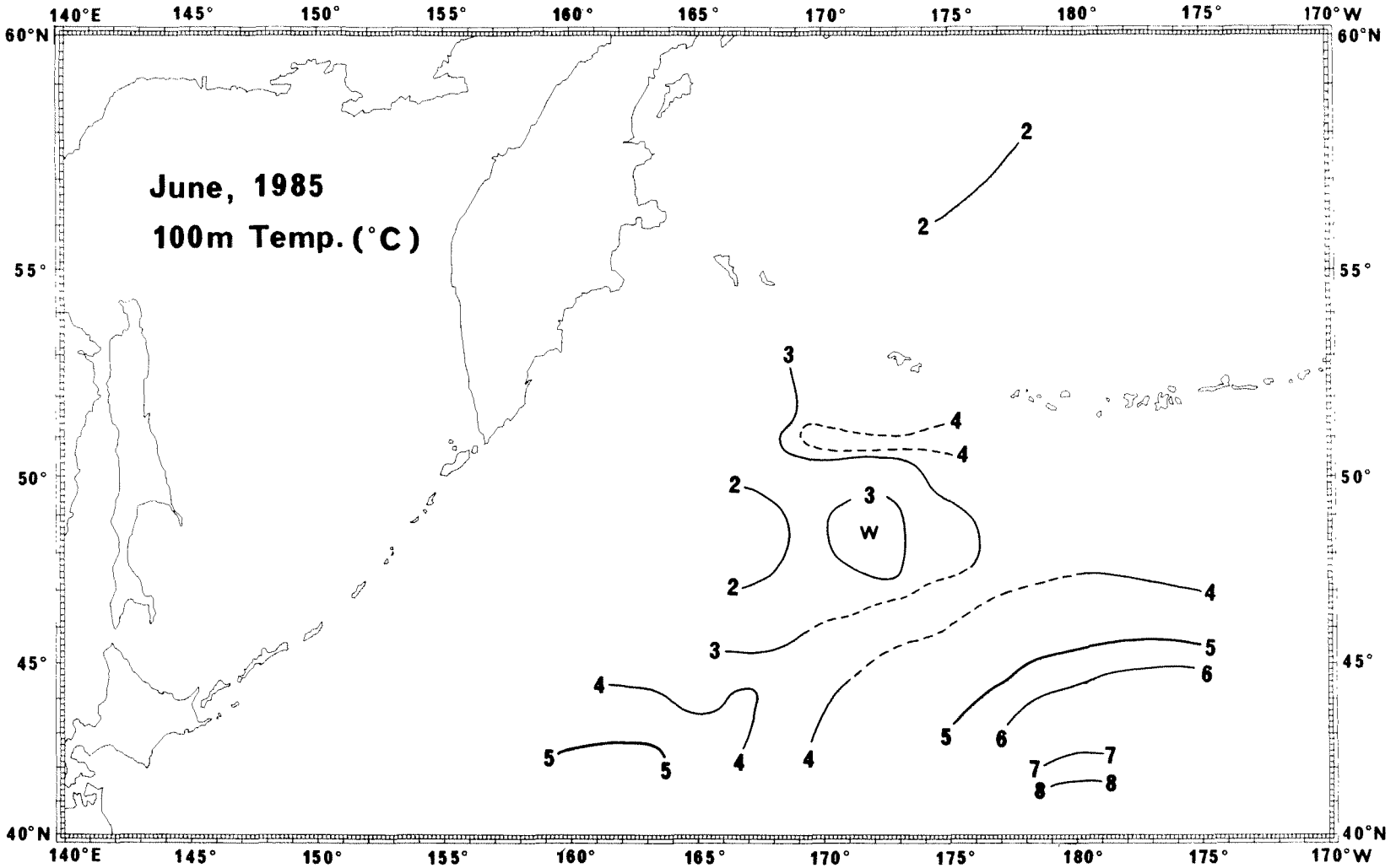

Fig. 1 Temperature distribution at 100m layer in June, 1985

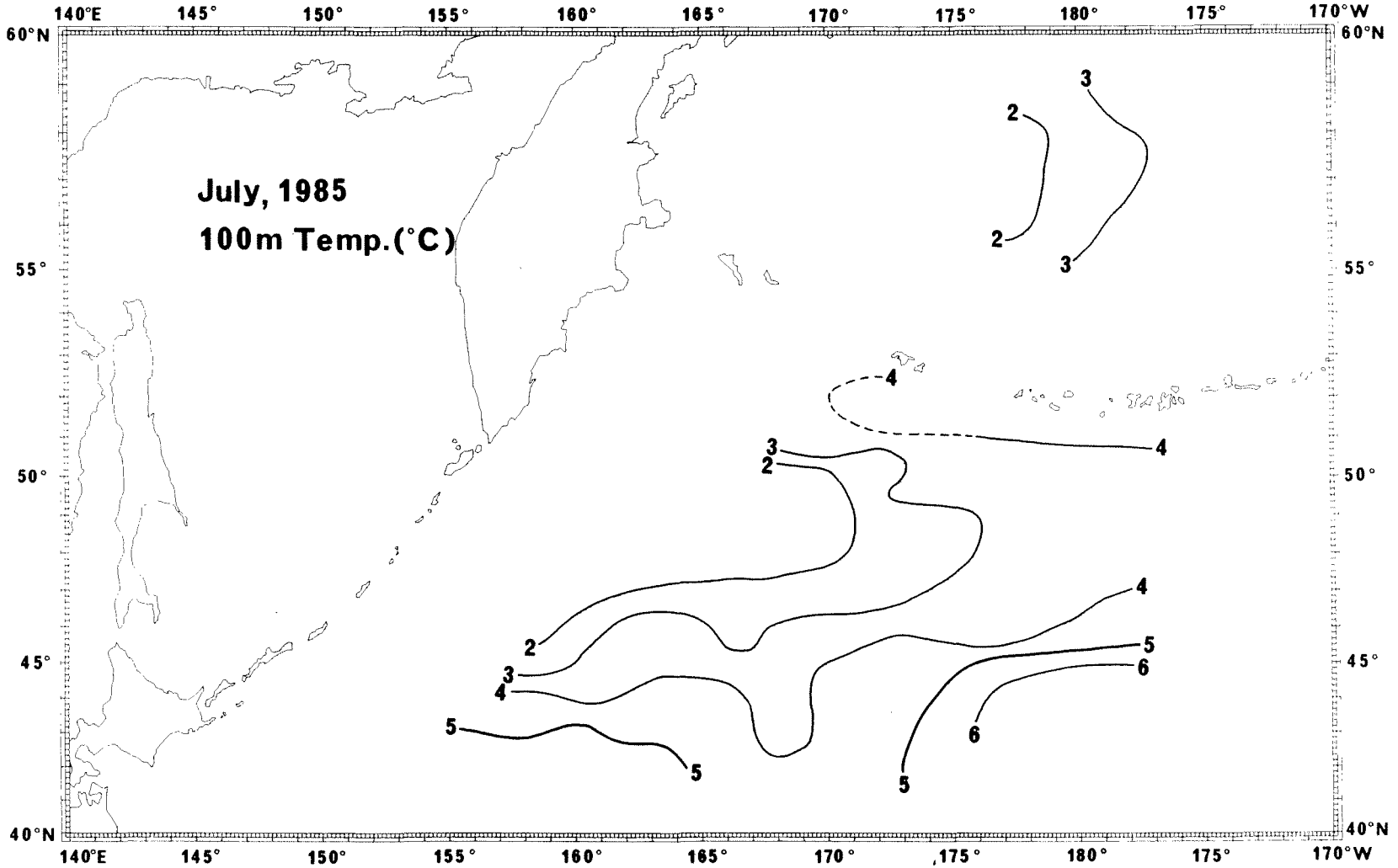

Fig. 2 Temperature distribution at 100m layer in July, 1985

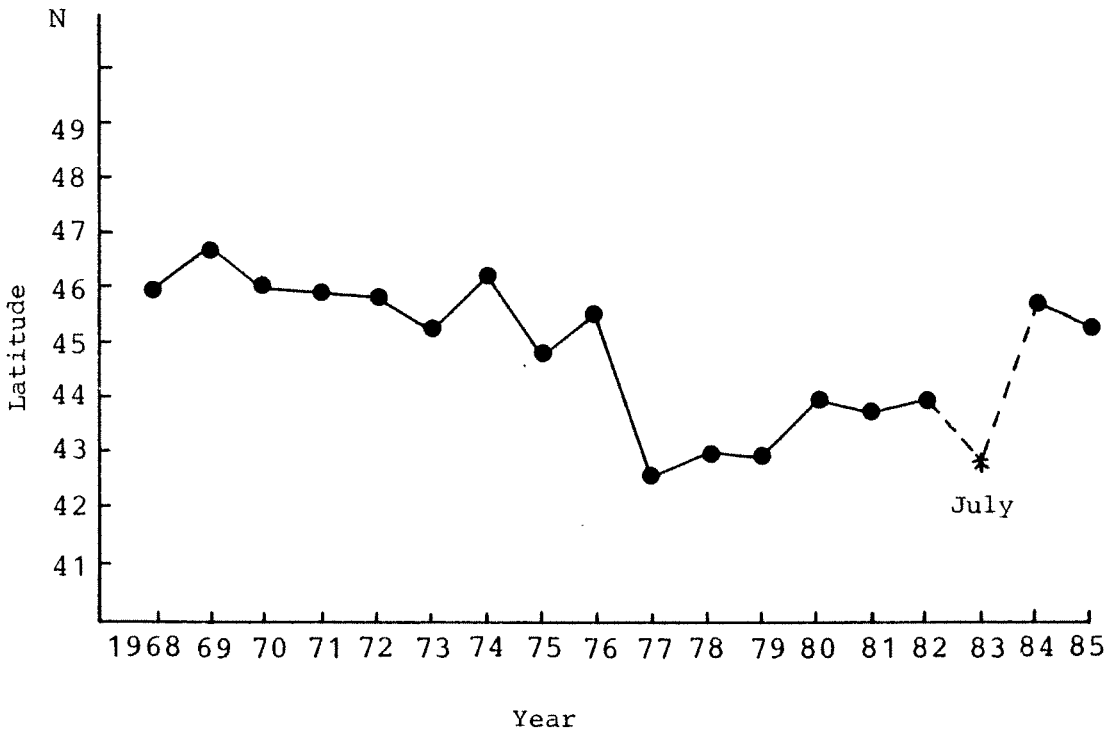

Fig. 3 Annual fluctation of southward extension of Komandrskie tongueshaped cold water in June indicated 3°C isothermal at 100m depth.

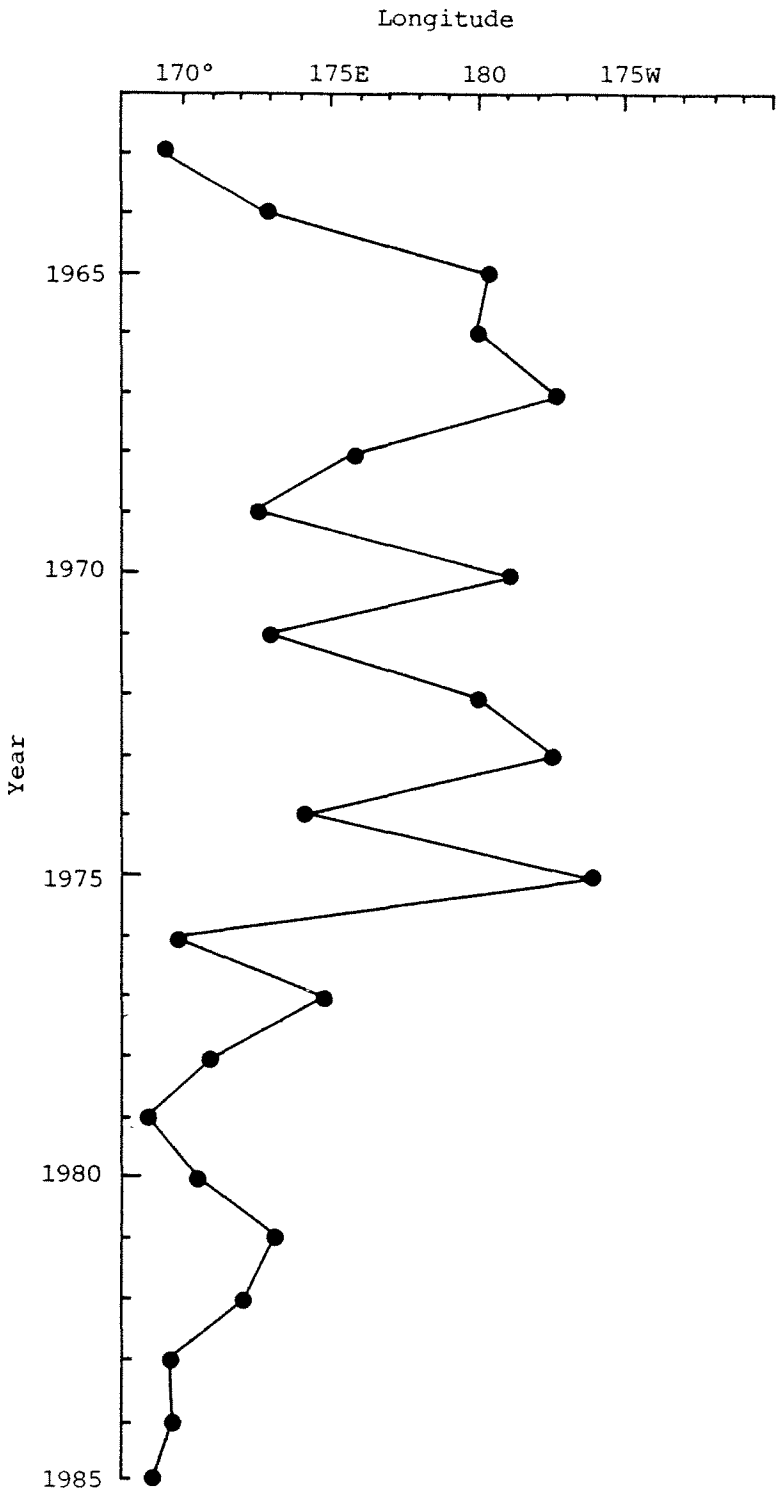

Fig. 4 Annual fluctuation of the extension of Alaskan stream in June indicated by 4°C isotherm at 100m depth.

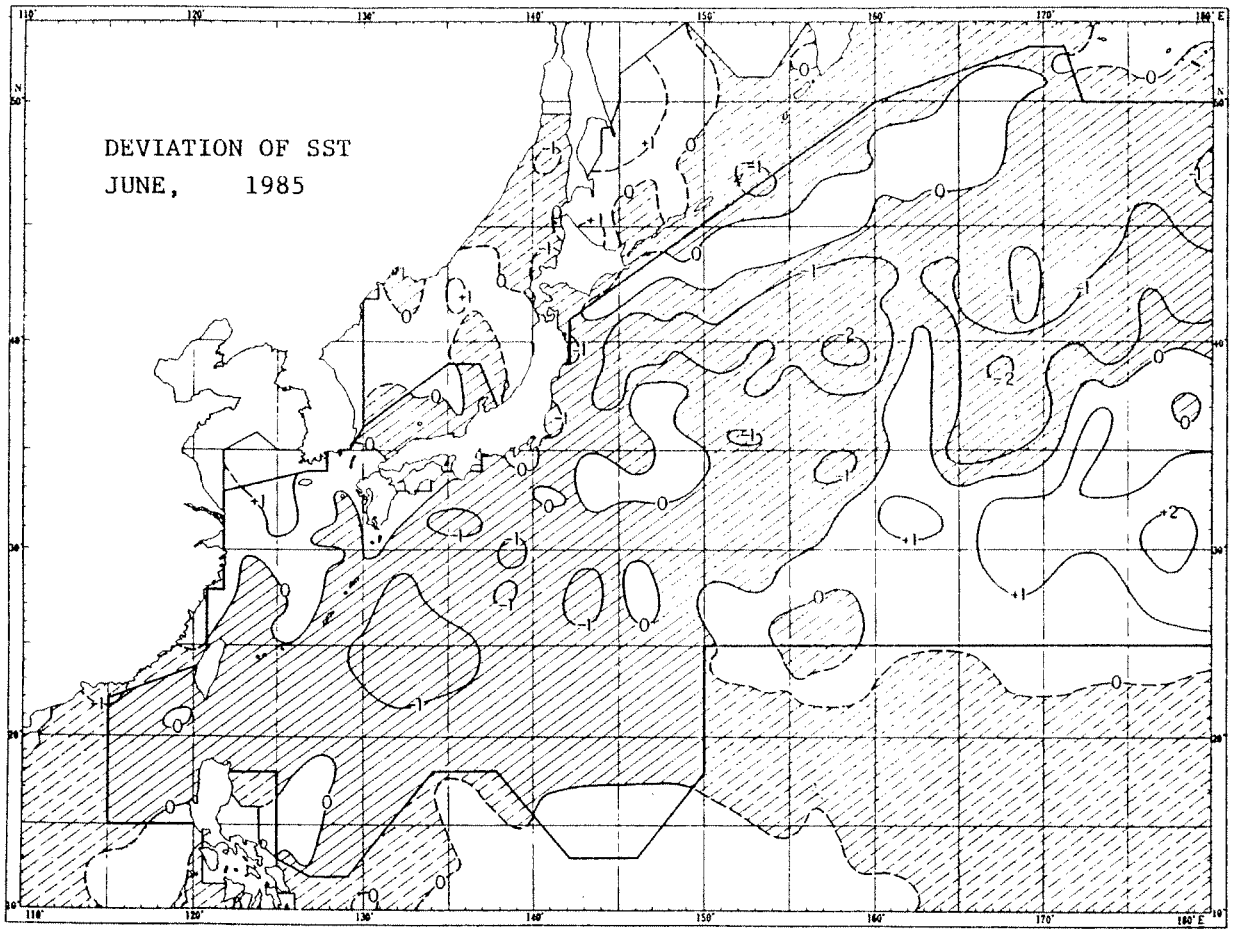

Fig.5 Deviation of the sea-surface temperature in June 1985 from the monthly mean for 30 years,1951-'80.
(From The Ten-Day Marine Report, No.1395)

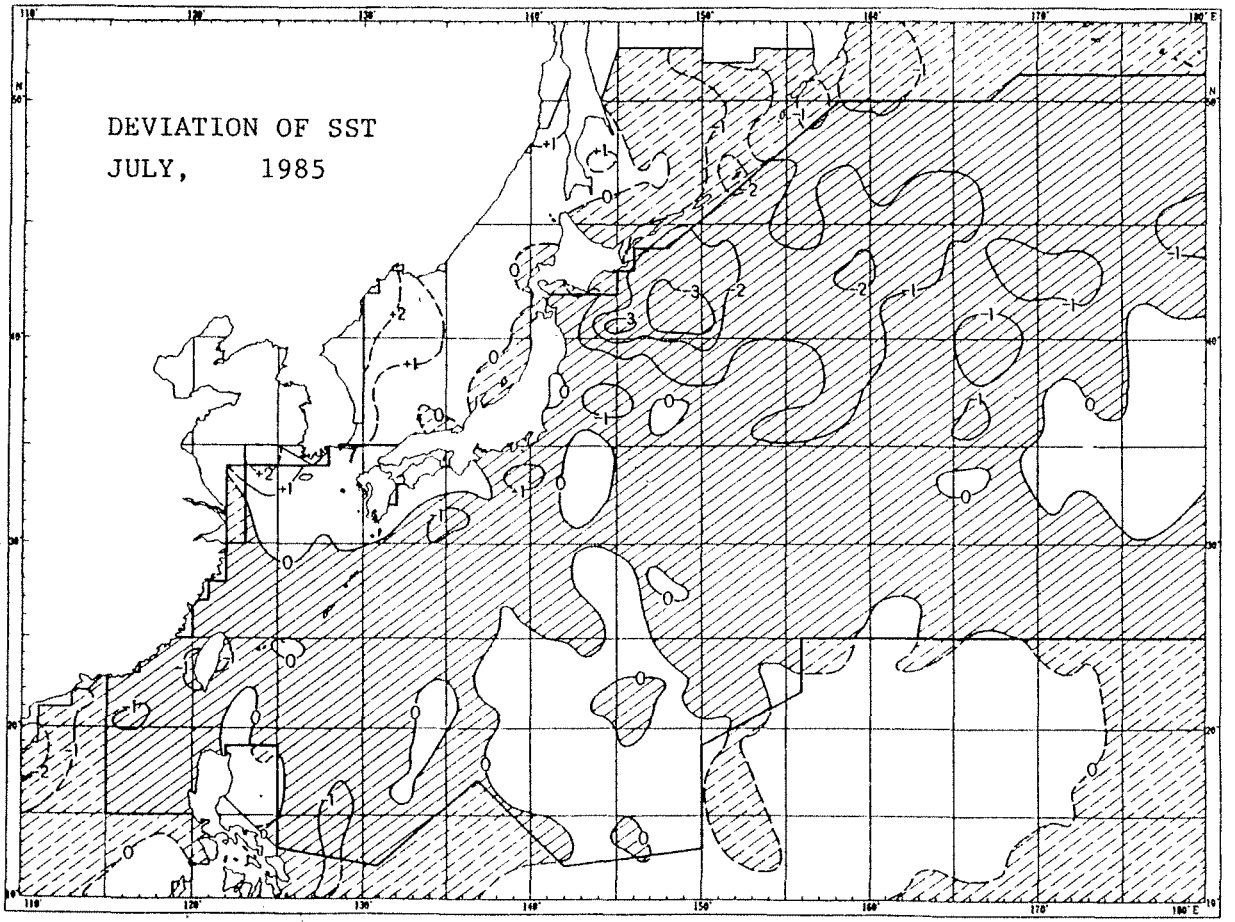

Fig.6 Deviation of the sea-surface temperature in July 1985 from the monthly mean for 30 years,1951-'80.
(From The Ten-Day Marine Report, No.1398)

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TRANSLATION

OUTLINE OF OCEANOGRAPHIC CONDITIONS OF THE NORTHWEST PACIFIC DURING THE SUMMER OF 1985

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Introduction

Oceanographic conditions in the northwestern Pacific during the summer of 1985 were examined using data on water temperature as in previous years. Data used were obtained mainly from eight salmon research vessels and four salmon motherships. Since the period of survey in this year was shorter than in previous years, synoptic information on the northwestern Pacific was obtained only for June and July. Observations were made at 153 stations in June and 235 stations in July. For surface water temperatures "The Ten-day Marine Report" of the Meterological Agency of Japan was used. Much previous work has pointed out that distribution and migration of salmon in the northwestern Pacific are influenced by Western Subarctic Water, the Alaskan Stream, and surface water temperature. Therefore, we assessed the distribution and features of these water masses.

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. In this report, identifying the cold water mass with temperature 3°C or less at 100 m depth 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. 1): The southern extension of cold water is observed almost every year between 165°E and 170°E and is called "the Komandorskie Cold Tongue". In 1985, while the 4°C isotherm showed a typical pattern of southward extension, the extent of the southward extension of the cold water mass with temperature of 3°C or less was not as great. Therefore, the temperature of this cold tongue was higher than in a normal year. The edge of the southward extension of this cold tongue was considered to remain farther north than in normal

years as was the case in 1984, based on the latitude of the 3°C isotherm (45°20'N) on 167°E longitude (Fig. 3).

Using the 3°C isotherm as an index, the eastward extension of the Western Subarctic Water was determined to have reached 176°E on 48°N. However, since a warm water mass with temperature of 3°C or more was observed to be isolated around 47°N, 172°E, the eastern edge of the major body of this cold water was presumed to be around 170°E which remained farther west than in a normal year. This evidence suggests that the eastward extension of this cold water was weak in 1985.

July (Fig. 2): The Western Subarctic Water has a general tendency to expand vertically (from the surface layer into subsurface layers) and horizontally (from areas southeast of the Kamchatka Pensinsula toward the east and the south) from winter to summer. In this year, a somewhat wider distribution of the cold water mass was observed in July than in June.

The extension of the Komandorskie Cold Tongue was almost the same as in June based on the 3°C isotherm whose southern edge was observed as far as 45°20'N. The isolated warm water mass with temperature of 3°C or more which had been observed in the previous month around 47°N, 172°E disappeared and the eastward extension of the cold water mass reached as far as around 176°E and was considered to be almost the same as in a normal year.

2. Alaskan Stream

The Alaskan Stream is recognized as a relatively high temperature current which flows toward the west along the south side of the Aleutian Islands. We examined the location of water with relatively high temperature of 4°C or more south of the Aleutian Islands at 100 m depth in order to determine the strength of the stream.

June (Fig. 1): The features of the Alaskan Stream were not clear due to the small amount of data for areas where this stream might usually be observed. However, the western edge of the water with temperature 4°C or more was observed as far as about 169°E although the continuity of the isotherm from the east could not be determined. This location shows that the intrusion of the warm water mass in 1985 was one of the most extensive ever observed, suggesting that the Alaskan Stream was strong, as in 1983 and 1984 (Fig. 4).

July (Fig. 2): Although the continuity of the isotherm from the east was not clear, as in June, the west edge of the warm water mass with temperature of 4°C or more was observed as far as about 170°E. Since the location of this western edge did not show any shift between June and July, the strength of the Alaskan Stream was assumed to be the same as in June.

3. Surface water temperature

Figures 5 and 6 show deviations of the sea-surface temperature for June and July from the monthly mean for the past 30 years. In June, deviations suggest that surface water temperature in the northwest Pacific was somewhat lower than in a normal year but relatively higher in some areas southeast of the Kuril Islands.

In July, a greater tendency to lower temperature was noted and the deviations showed that water temperature was 1° to 2°C lower than in a normal year over almost the entire area in the northwest Pacific.

Oceanographic conditions in the northwest Pacific during the summer of 1985 are summarized as follows--

1. Both the southward and eastward extensions of the Western Subarctic Water were relatively weaker than in normal years.

2. The westward extension of the Alaskan Stream was relatively strong compared to normal years.

3. Surface water temperatures were lower than in a normal year. In particular, the small increase in surface temperature from June to July resulted in lower temperatures than in a normal year over almost the entire area in the northwest Pacific in July.

FIGS. 1 TO 6 ARE IN ENGLISH IN THE JAPANESE DOCUMENT