

Monthly Charts of temperature and Salinity in the North Sea
for the Period of the ICES Young Herring Survey 1971

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At the ICES Statutory Meeting in 1970 temperature and salinity charts based upon data collected during the ICES North Sea Young Herring Survey 1970 were presented (Doc. C.M.1970/C:12). It was agreed that similar charts should be prepared in 1971, but that an effort should be made to also include data collected at the time of the 1971 ICES Young Herring Survey by ships other than those participating in the Survey.

In accordance with the above all temperature and salinity observations, at bottom and surface, carried out in the region during January-March, 1971 were requested. The material made available to us is summarized in Table 1. Underlining of dates indicates that the material in question included bottom observations.

The temperature and salinity charts for the three months are given in Figures 1-3 (bottom temperature), 4-6 (bottom salinity), 7-9 (surface temperature), and 10-12 (surface salinity).

A comparison of bottom temperature and salinity in 1971 with the long-term means was undertaken for February, the month which had the best coverage of hydrographic observations. The February data were for this purpose supplemented by those collected by "Anton Dohrn" on January 28-31, in order to have also the German Bight included in the comparison.

As standards were used the mean charts for the period 1902-1954 referred to below.

The result of the comparison is given in Figures 13 and 14 in which are drawn isanomals of bottom temperature and bottom salinity, respectively.

Figure 13 shows that, except for a few minor regions, bottom temperature in February 1971 is above the long-term mean. In the main part of the area temperature is more than 0.5° above normal, in some regions even between 1° and 2° above. Temperatures below normal are mainly met with in the Skagerrak, off the southwest coast of Norway and on the Dogger Bank.

Obviously, the temperature situation in the area in February 1971 differs distinctly from that of February 1970 when (cf. Doc. C.M.1970/C:12, Figure 15) bottom temperature was clearly below the long-term mean, excepting minor scattered patches. In the central part of the area temperatures were then 0.5° to 1.5° below normal.

Figure 14 shows isanomals of bottom salinity in February 1971. Great positive anomalies appear in the inner part of the German Bight, and in a tongue stretching from the Southern Bight towards northeast. In the rest of the area the anomalies are small, except for minor patches.

References

- E. Goedecke, J. Smed and G. Tomczak. 1967. "Monatskarten des Salzgehaltes der Nordsee dargestellt für verschiedene Tiefenhorizonte." - Deutsche Hydrogr. Zeitschr., Ergänzungsheft Reihe B, No.9.
- G. Tomczak and E. Goedecke. 1962. "Monatskarten der Temperatur der Nordsee dargestellt für verschiedene Tiefenhorizonte." - Deutsche Hydrogr. Zeitschr., Ergänzungsheft Reihe B, No.7.

Table 1. Data employed in the Hydrographic Charts of the ICES North Sea Young Herring Survey

Country	Vessel	January	February	March
Belgium	L.V. "West-Hinder"	1-31	1-28	1-31
Denmark	"Dana"			<u>5-21</u>
	L.V. "Vyl"	<u>1-31</u>	<u>1-28</u>	<u>1-31</u>
F.R.Germany	"Anton Dohrn"	<u>28-31</u>	<u>1-13</u> ,14-15	<u>22-31</u>
	"Friedrich Heincke"		1-27	<u>1-31</u>
	Cuxhaven Helgoland Kabeltonne		1-26	1-31
Netherlands	"Willem Beukelsz"	<u>5-18</u> ,20-22	2-11	8-9,11-12, <u>16-20</u> ,30 1-5,10,22-30
	"Tridens"	<u>26-29</u>	<u>1-10</u> , <u>16-25</u> ,17,22	<u>1-5</u>
	"Waddenzee"			29,31
Norway	"G.M. Dannevig"	<u>12</u>		<u>16</u>
	"G.O. Sars"		<u>2-12</u>	
Sweden	"Thetis"		<u>9</u>	
U.K. (England)	"Corella"	<u>10-13</u> , <u>27-29</u>		<u>27-31</u>
	"Clione"			<u>5-21</u>
	L.V. "Mid. Barrow" (obs.	8-23		1-29
	" "Gallopers" (every	1-29	1-25	1-29
	" "Smith's Knoll" (4 days	1-29	1-25	1-29
	" "Lynn Well" (4-28	1-28	4-28
	Route Leith-Bremen	2,8,15,23,29	4,12,19,27	6,13,19,26
" Hull-Hanstholm	1,9,16,23,30	6,13,20,27	6,13,20,27	
" Felixstowe-Rotterdam		15,23	1,8,15,22,29	
U.K. (Scotland)	"Explorer"	<u>8,11</u> , <u>24-25</u> , <u>27-28</u>	<u>6-25</u>	
USSR	"Viandra"		<u>15-28</u>	<u>1-7</u>

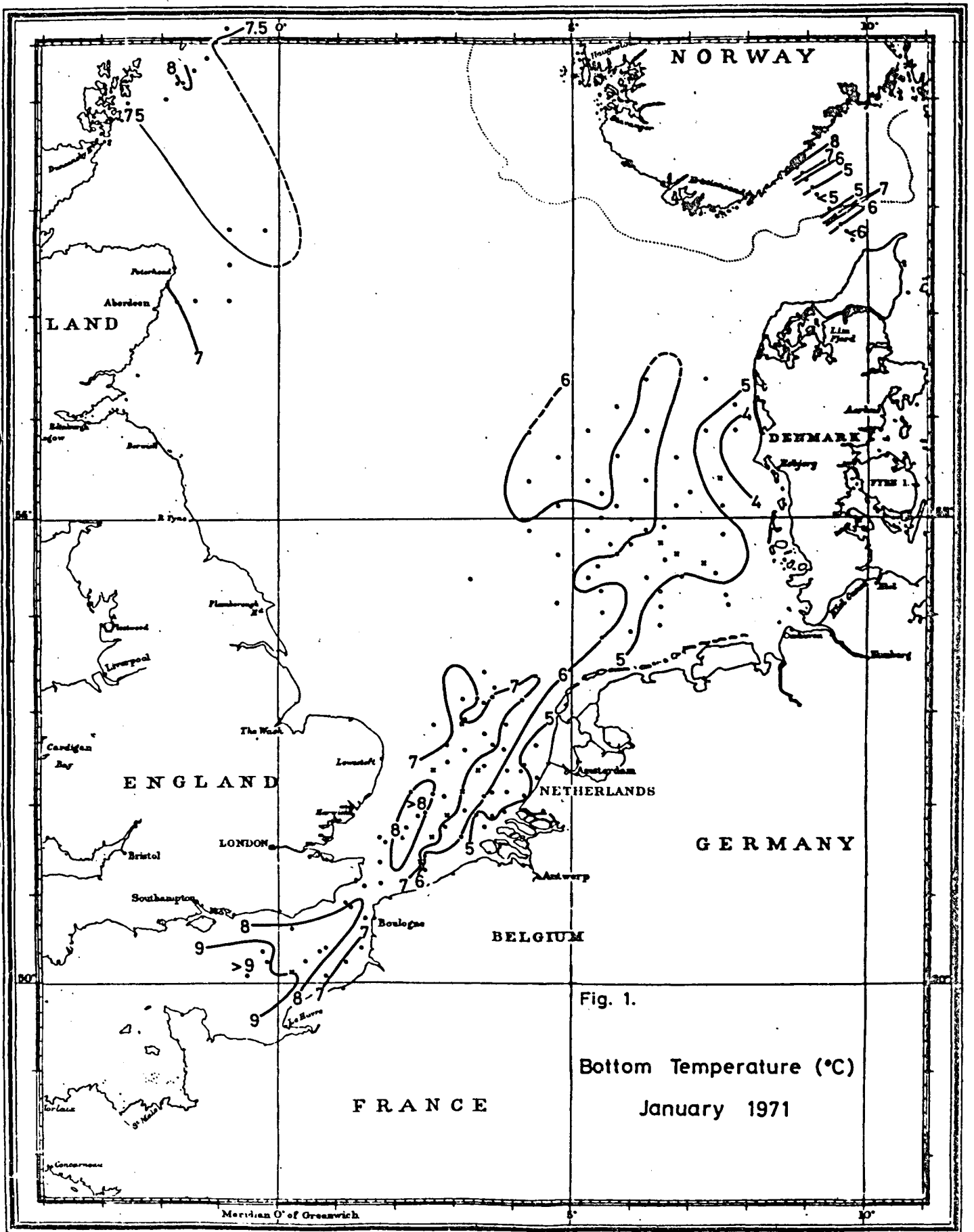


Fig. 1.
 Bottom Temperature (°C)
 January 1971

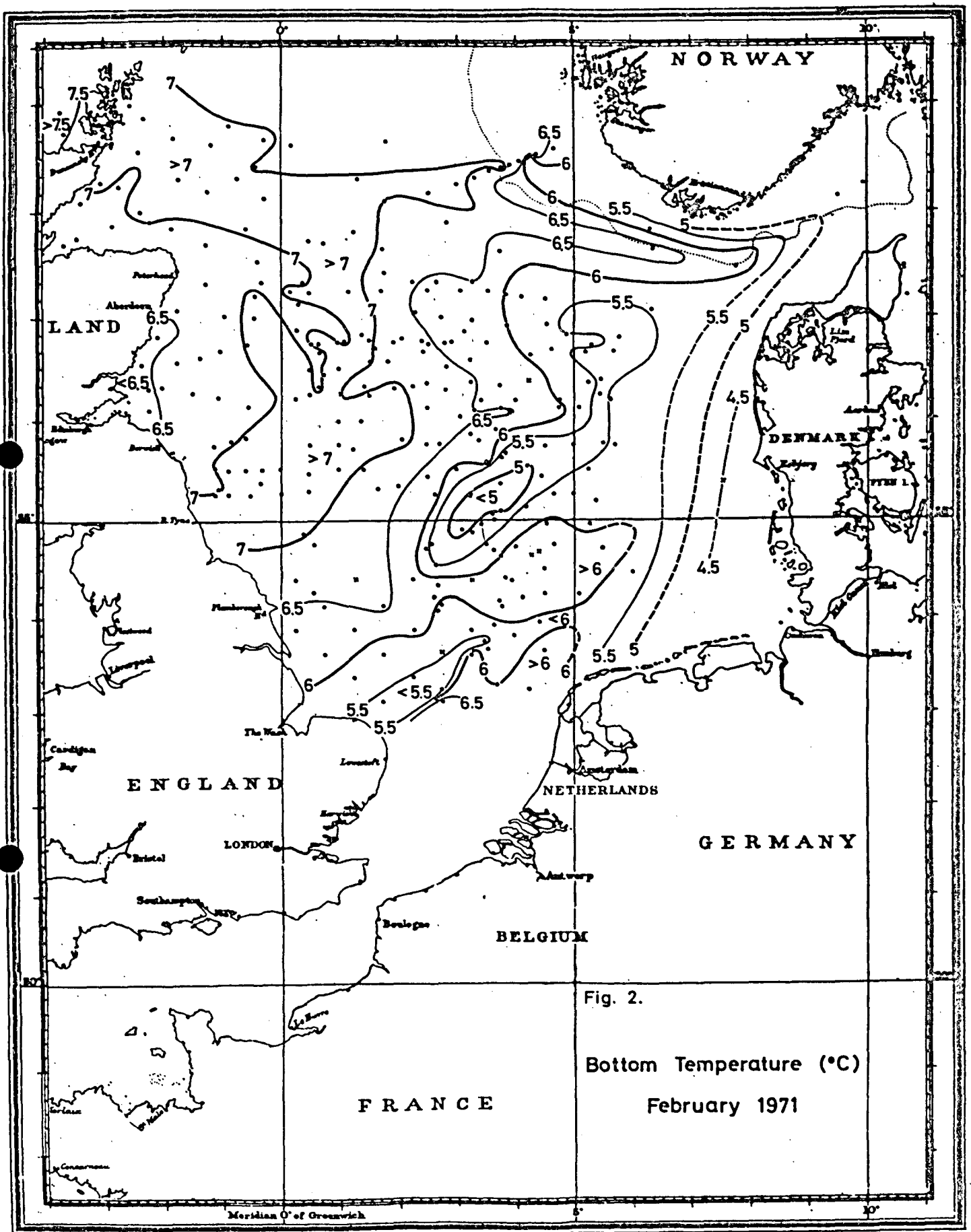


Fig. 2.
 Bottom Temperature (°C)
 February 1971

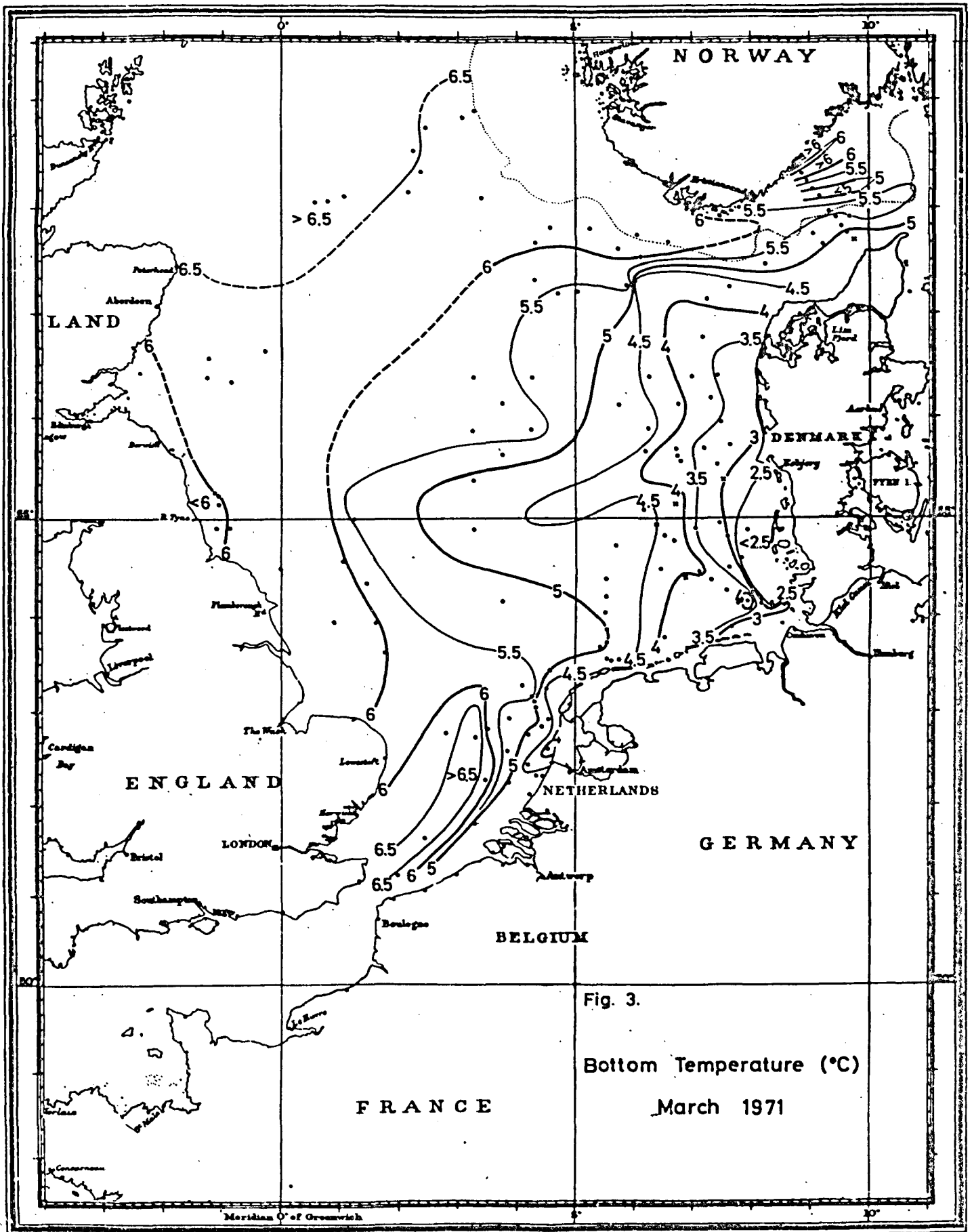


Fig. 3.
 Bottom Temperature (°C)
 March 1971

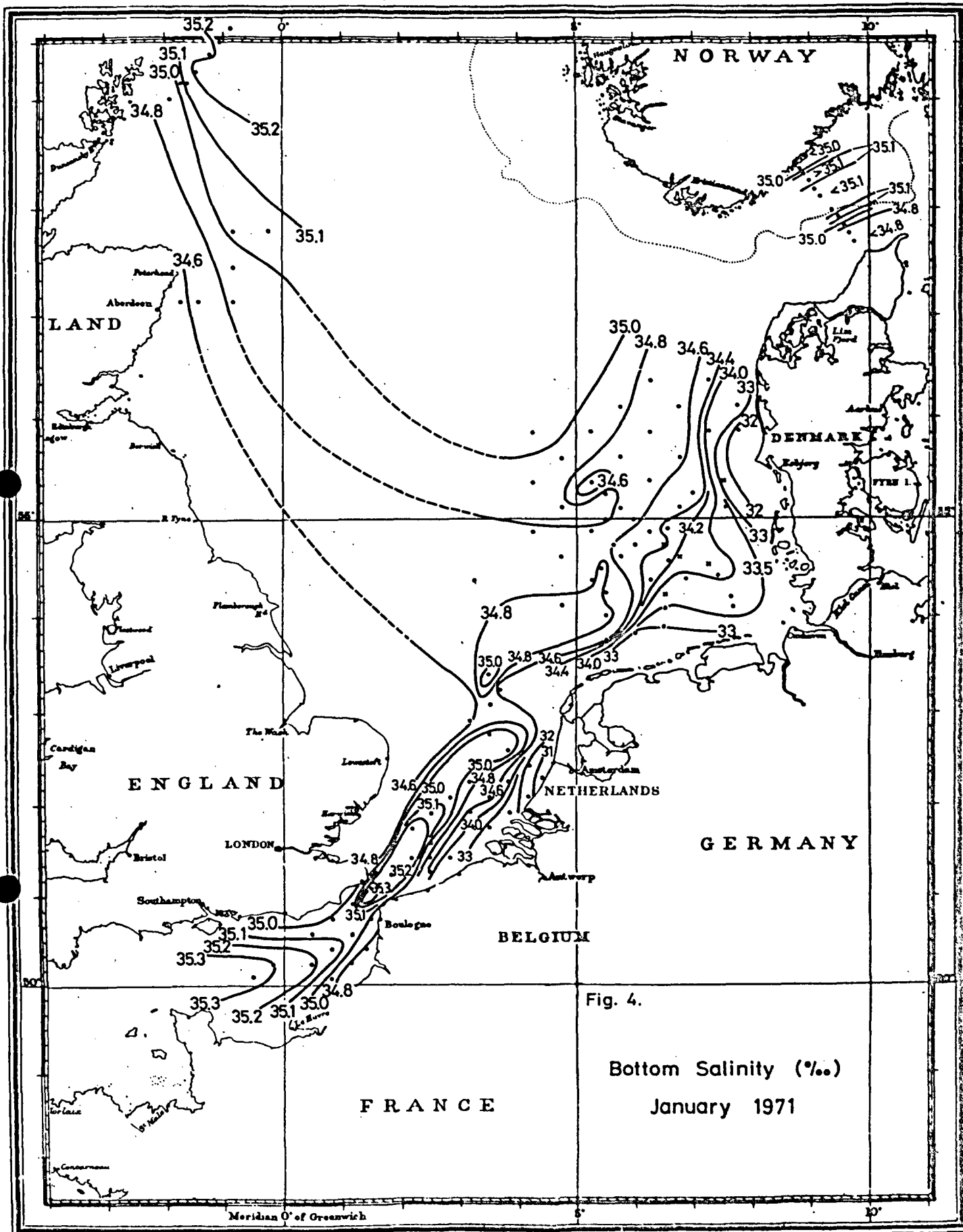


Fig. 4.

Bottom Salinity (‰)
January 1971

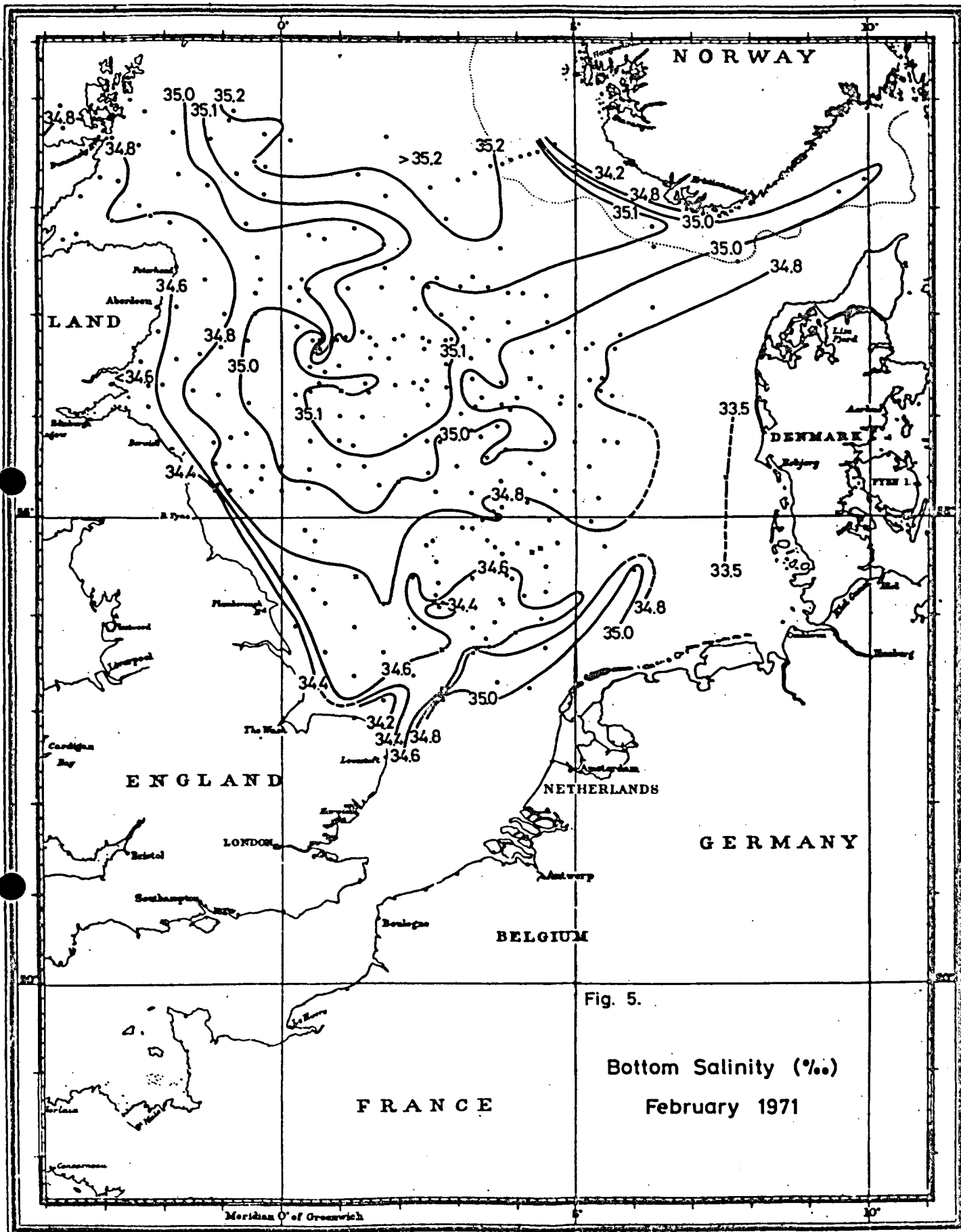


Fig. 5.

Bottom Salinity (‰)
February 1971

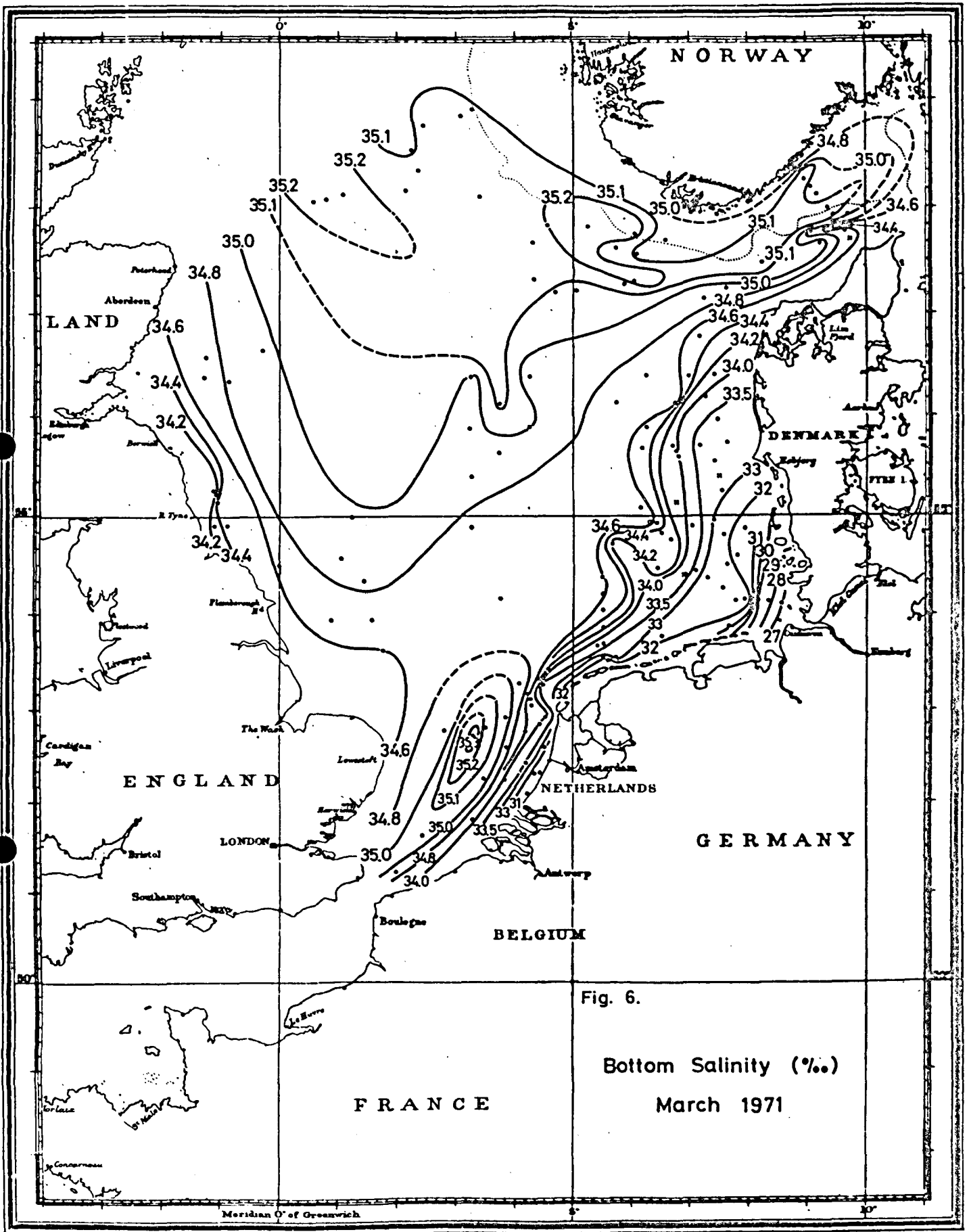


Fig. 6.

Bottom Salinity (‰)
March 1971

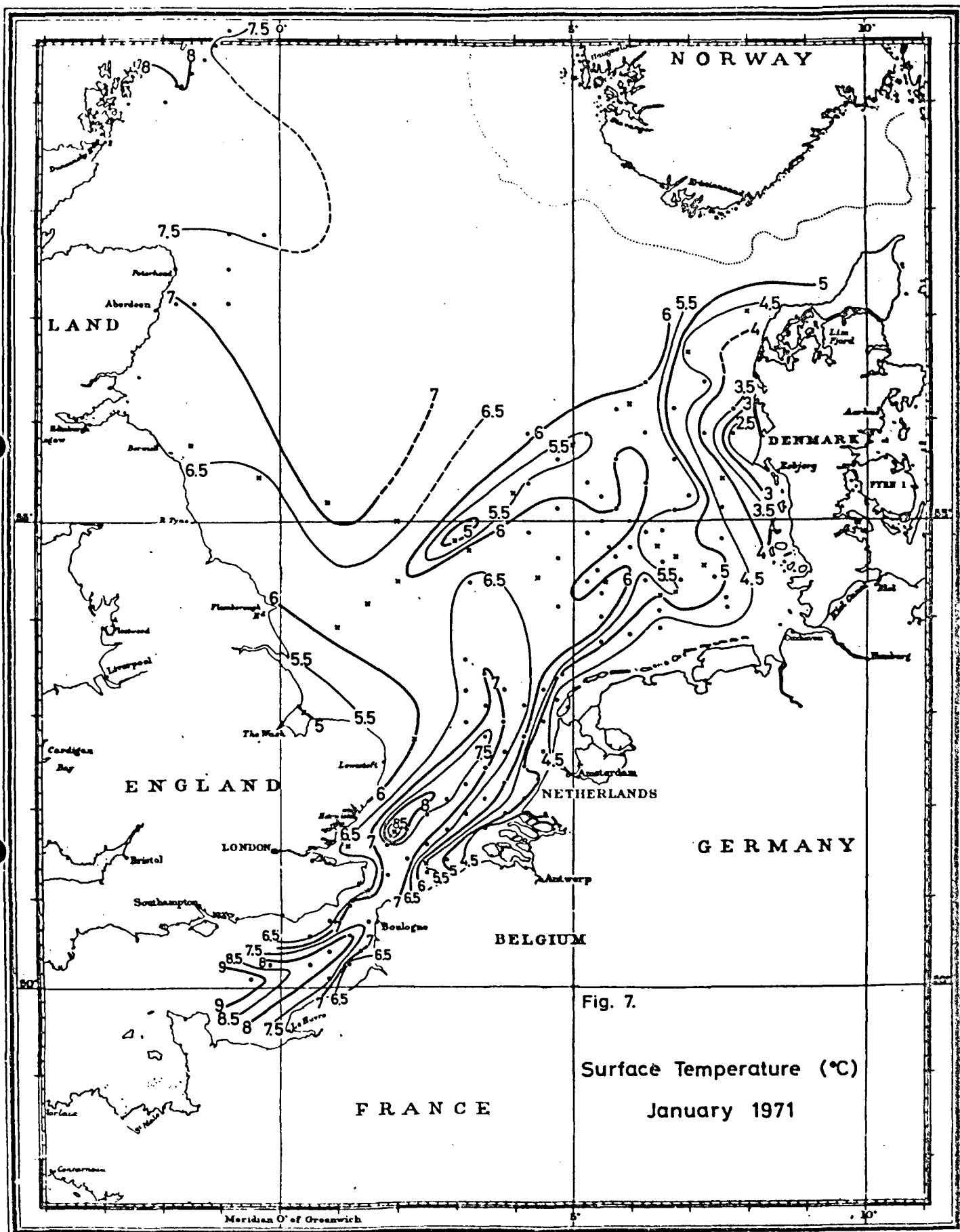


Fig. 7.

Surface Temperature (°C)
January 1971

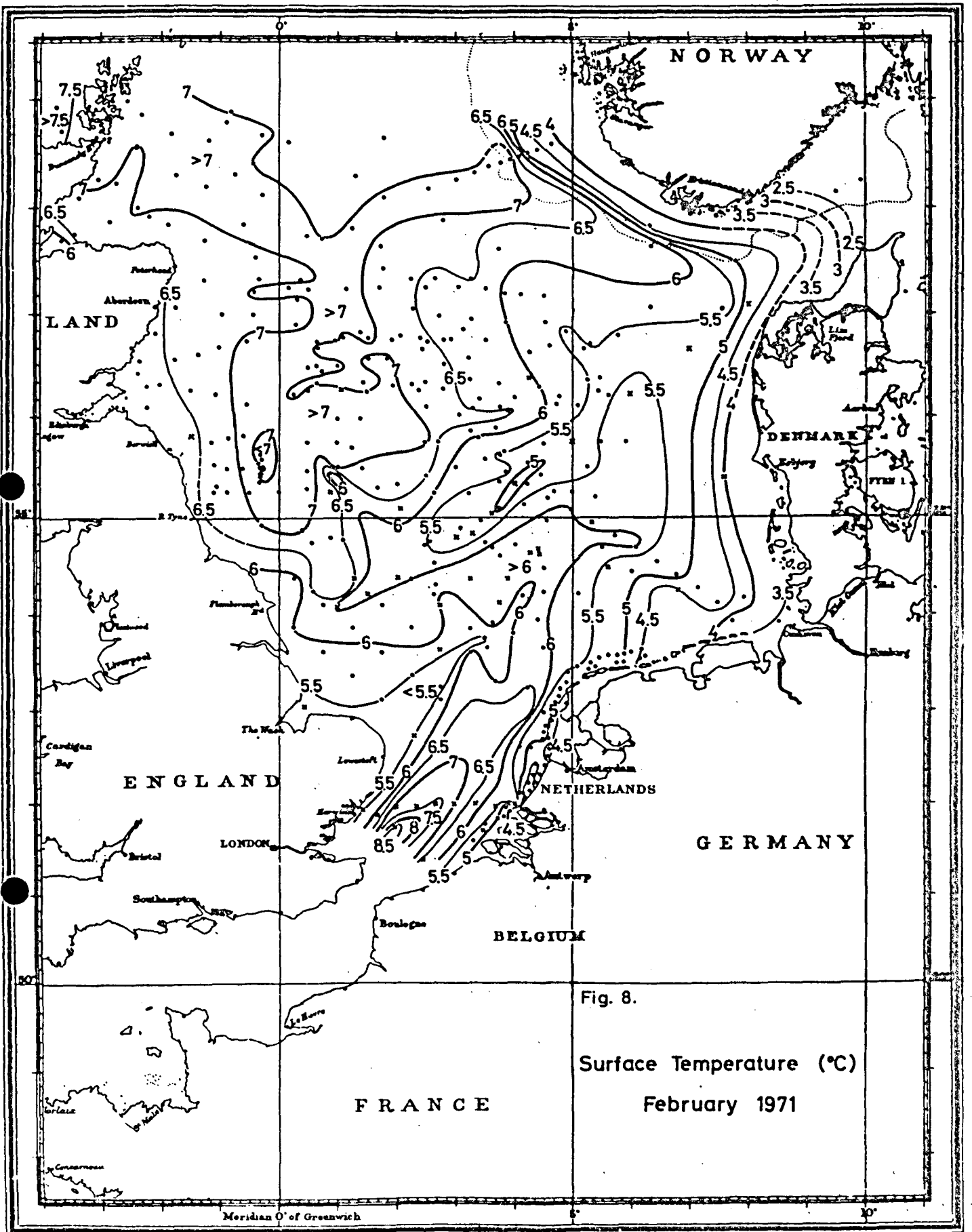


Fig. 8.

Surface Temperature (°C)
February 1971

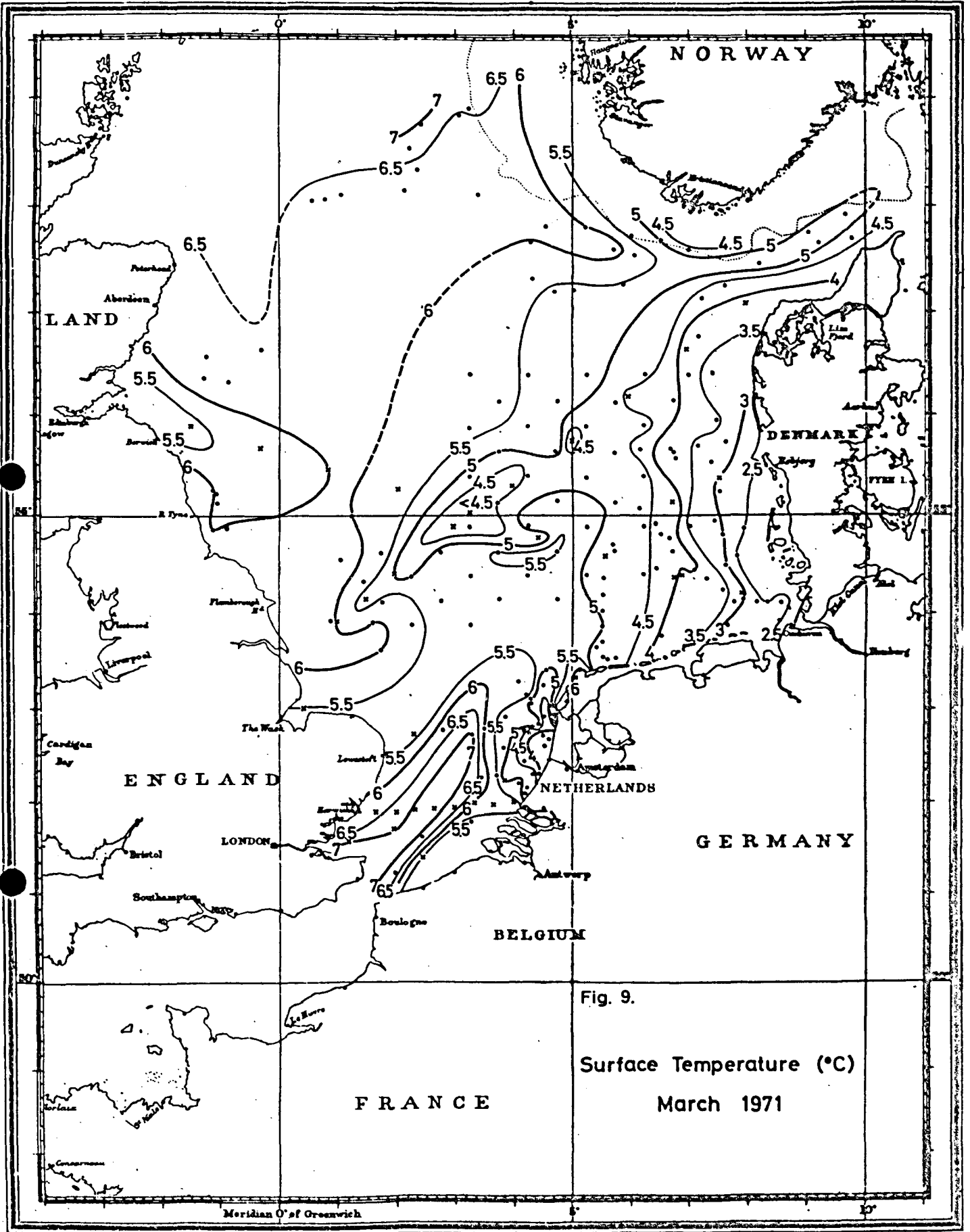


Fig. 9.
 Surface Temperature (°C)
 March 1971

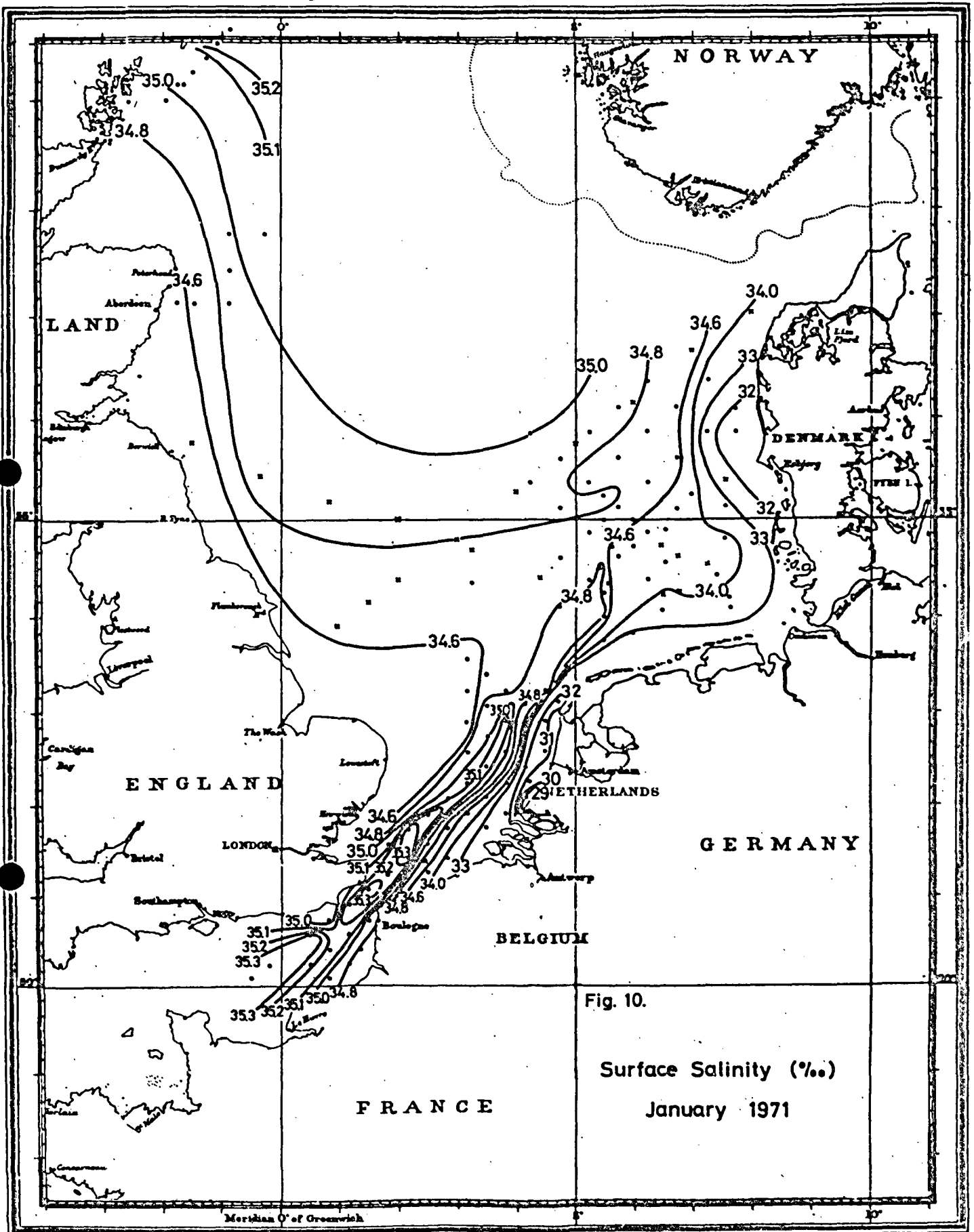


Fig. 10.

Surface Salinity (‰)
January 1971

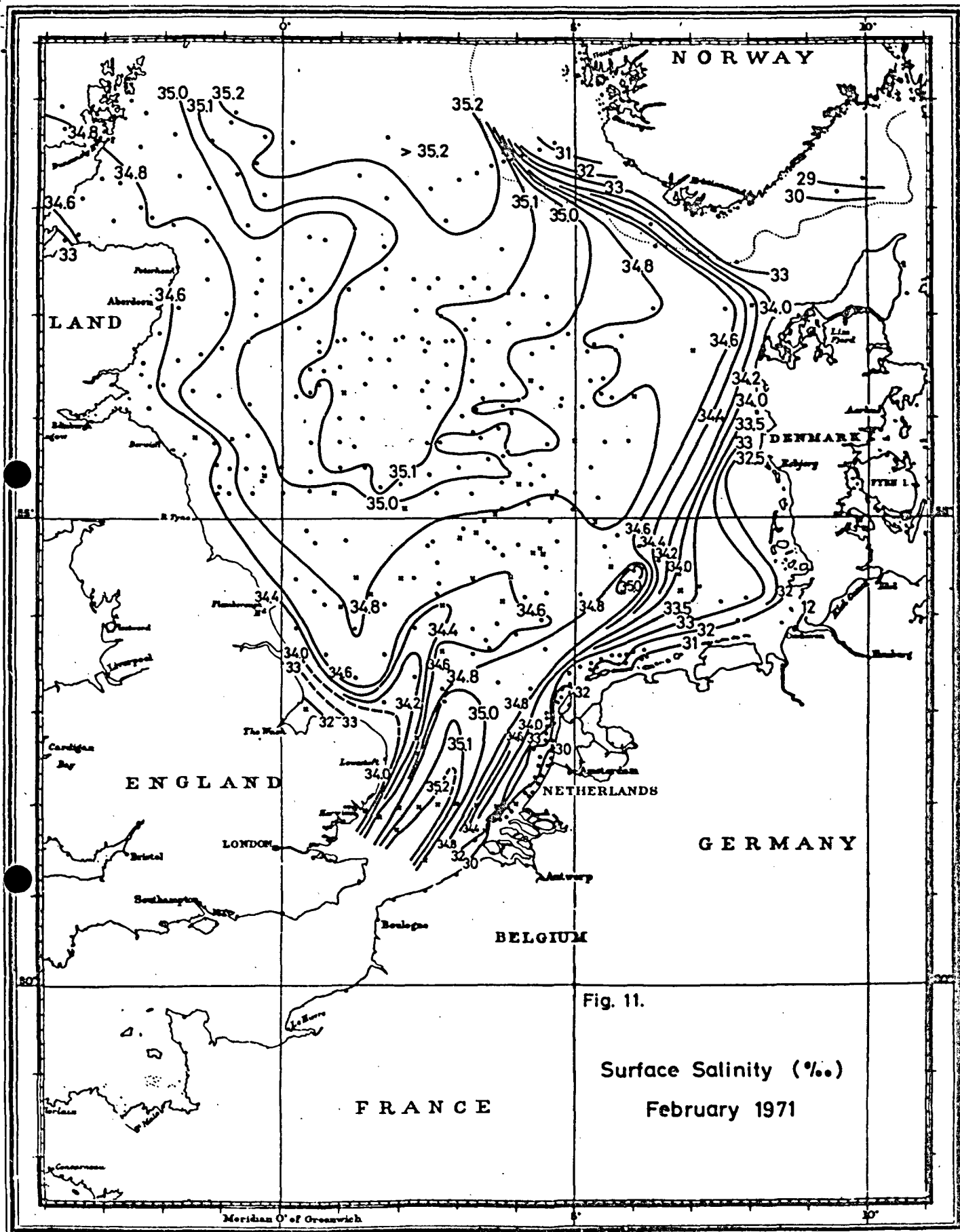


Fig. 11.
 Surface Salinity (‰)
 February 1971

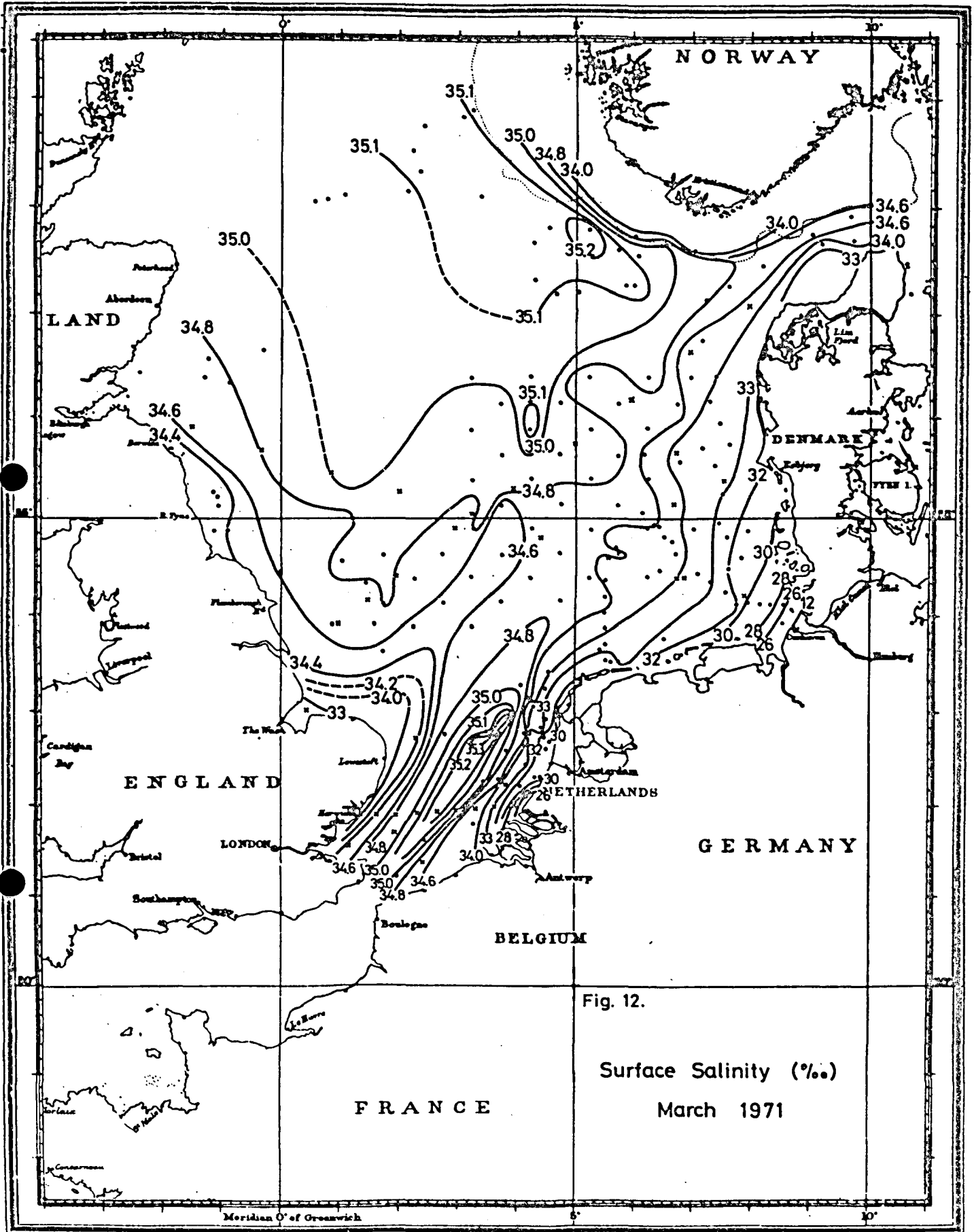


Fig. 12.

Surface Salinity (‰)

March 1971

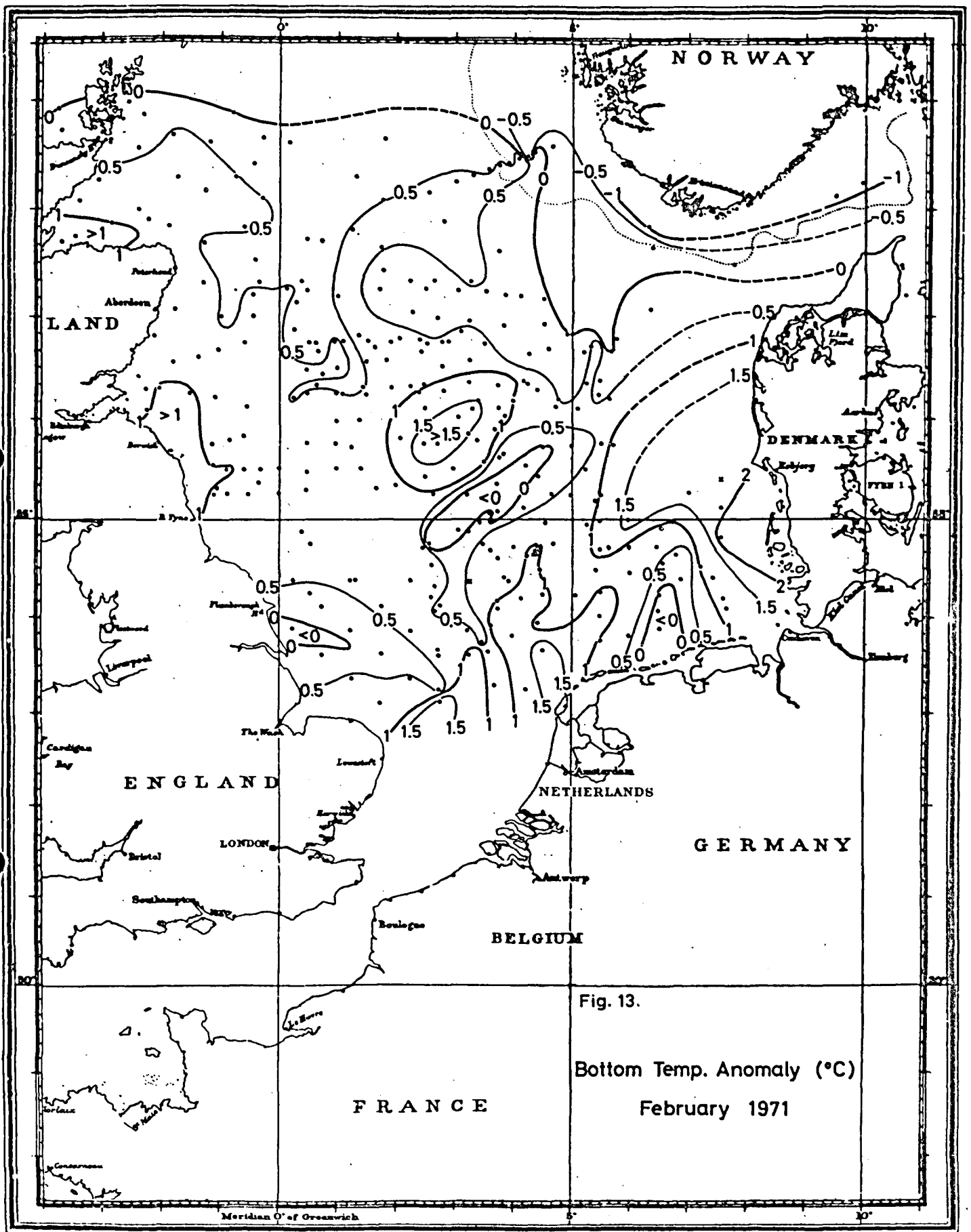


Fig. 13.

Bottom Temp. Anomaly ($^{\circ}\text{C}$)
February 1971

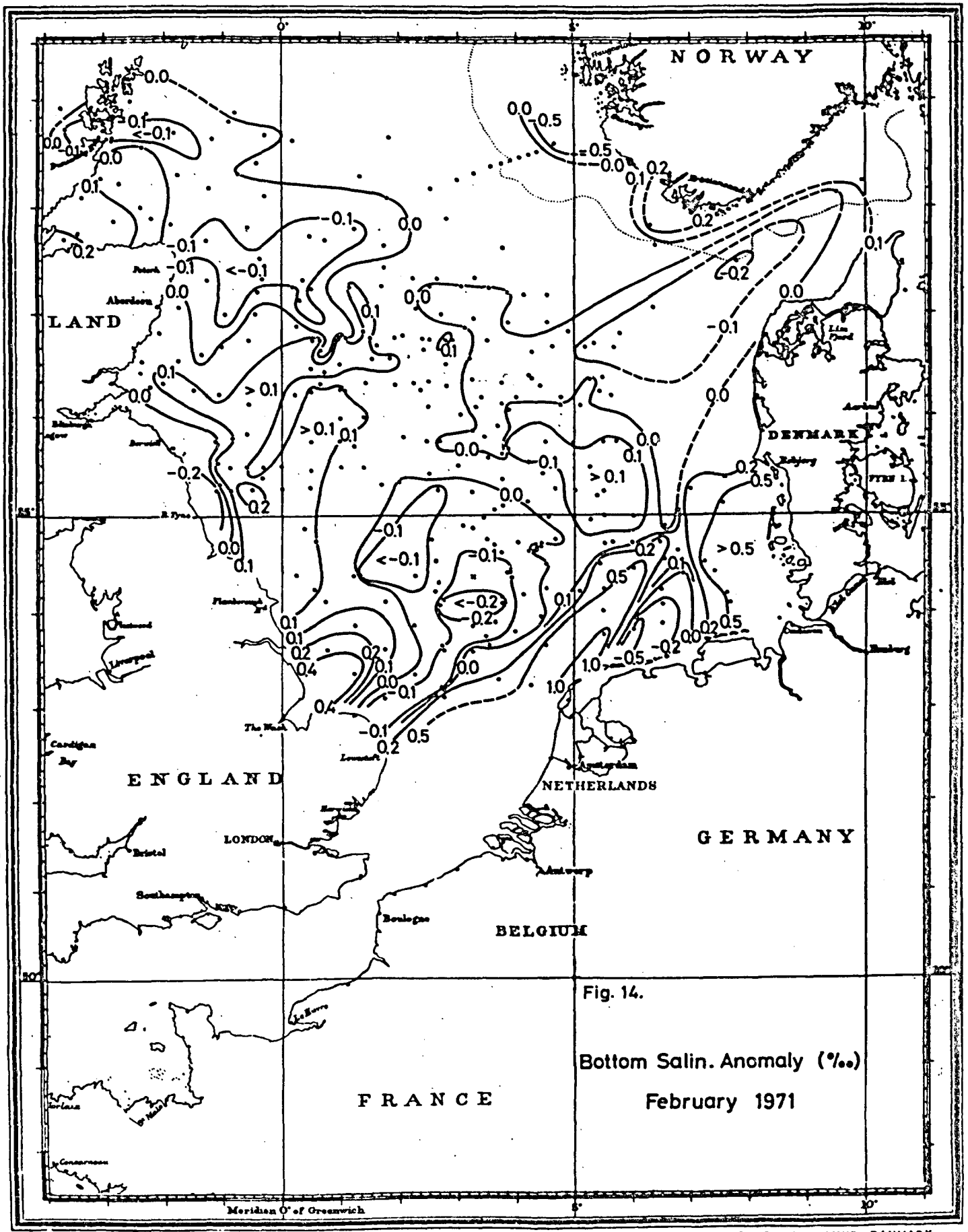


Fig. 14.
 Bottom Salin. Anomaly (‰)
 February 1971