

International Commission for



the Northwest Atlantic Fisheries

Serial No. 5470

ICNAF Res. Doc. 79/VI/105

ANNUAL MEETING - JUNE 1979

Investigations on Larvae and Pre-recruits of Capelin in the
Northwest Atlantic in September 1978

by

V. A. Poletayev
Polar Research Institute of Marine Fisheries and Oceanography (PINRO)
Murmansk, USSR

From September 1 till September 20 1978 the RV "Gemma" carried out the first survey of pre-recruits and larvae of capelin in Divisions 2J, 3K, 3L, 3N and 3O. 35 stations were made, each station consisting of control trawling by a pelagic trawl, fishing of ichthyoplankton and plankton, and taking water temperature on standard depths. Each trawling was conducted during an hour by the pelagic trawl with a small-meshed netting (5 and 10 mm) inserted into the cod - end. Trawlings were conducted depending on echo - recordings from the bottom to the surface and also when echo - recordings were lacking. Ichthyoplankton was caught by the IKS-80 net (the diameter of opening 80 cm) at depths of 0, 50, 100, 150 and 200 m. Fishing was conducted in the course of drifting of the vessel during 20 minutes. Plankton was caught by a Juday net (diameter 38 cm) in the 0 - 50 m layer. The stations were made every 40 miles. During the survey the distance of about 1500 miles was observed.

R e s u l t s

During the survey pre-recruits of capelin in the area of investigations were not found.

When fishing by the ichthyoplankton net IKS - 80 148 larvae of capelin and 5 more larvae by the Juday net were caught (Fig.1). The length of larvae ranged from 12 to 26 mm (TL) (Fig.2), the average $M = 17,55$ mm. All specimens caught were at the larval stage of development (there were two rows of lower lateral and one row of

ventral melanophores, fatty fin, rays in dorsal and anal fins). Larvae were caught at depths from 50 to 200 m (Figs. 3, 4, 5, 6), near the surface not a single specimen was caught (Table I). This is, perhaps, connected with a sudden jump in water temperature in the 30 to 50 m layer where it dropped by 5 - 10° C on the whole of the area surveyed. All the larvae caught kept to the layers with water temperature from +0.60 to -1.21° C (surface layer temperature ranged from 4.23 to 10.70° C).

The bulk of the larvae were caught at depths of 50 m (79 spec.) and 150 m (47 spec.). The larvae caught at a greater depth were somewhat larger: 50 m - $M = 17.08$ ($n = 79$); 150 m - $M = 18.07$ ($n = 47$); at night the larvae were caught more often at depths of 100, 150 m, in the day-time - at the 50 m depth, but the fragmentariness of the material does not allow to draw any conclusions. Nearly all the larvae were caught in Division 3L. The highest catches (up to 44 larvae per station) were in the north-western part of the area (Fig. 1).

C o n c l u s i o n s

Pre-recruits of capelin were absent during the survey in the area investigated. Larvae of capelin were distributed in Divisions 3K and 3L.

Taking into consideration that all the specimens caught were already at the larval stage of development (presence of rays in unpaired fins) it would be more reasonable to carry out the survey a little earlier, say, in the first half of August. It is even more reasonable to carry out such a survey simultaneously by the Soviet and Canadian vessels in the territorial waters.

Table 1. Distribution of larvae of different length by depths, spec.

Depth, m	L e n g t h, mm												n		
	13	14	15	16	17	18	19	20	21	22	23	24		25	26
0															0
50	6	9	11	10	7	16	8	4	3	1	4				79
100		2	2	1	1	1	2	5	1	1			1	1	18
150			2	6	4	11	8	2	5	6		2	1		47
200				2		1	1								4
Total	6	13	21	15	20	26	12	14	10	2	6	1	1	1	148

Note: The data of catches by the IKS-80 net are given in Table.

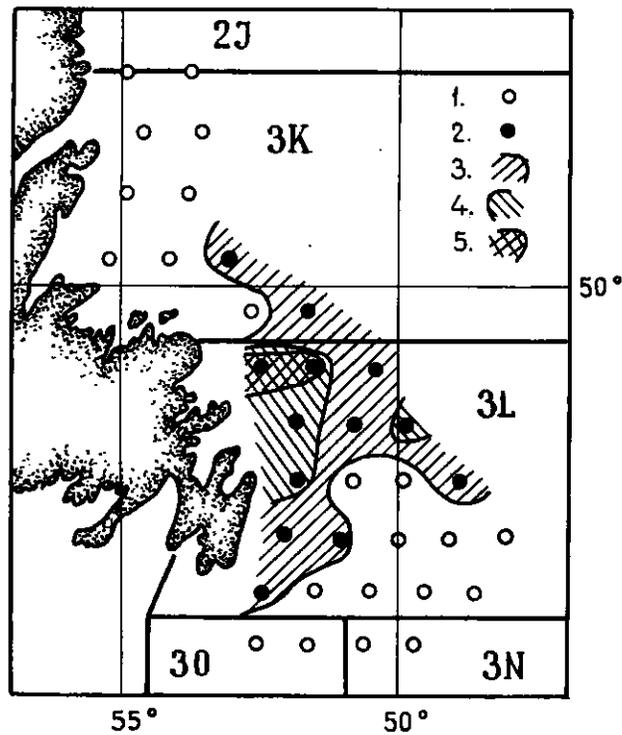


Fig.1. The area of capelin larvae distribution, September, 1978

- 1 - larvae absent
- 2 - larvae present
- 3 - 1-10 larvae
- 4 - 11-20 larvae
- 5 - over 20 larvae

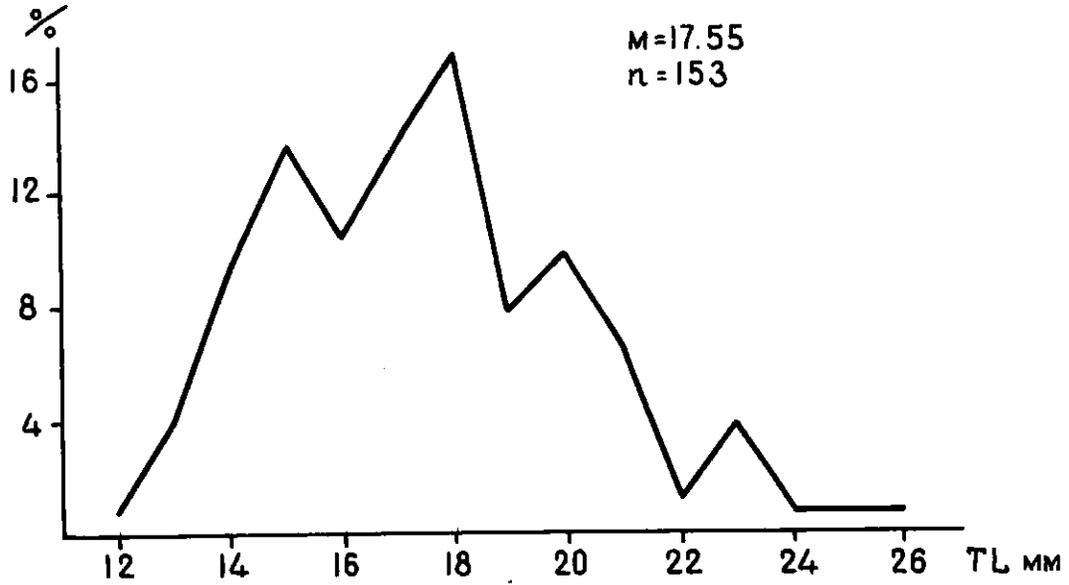


Fig.2. Length frequency of capelin larvae, September, 1978

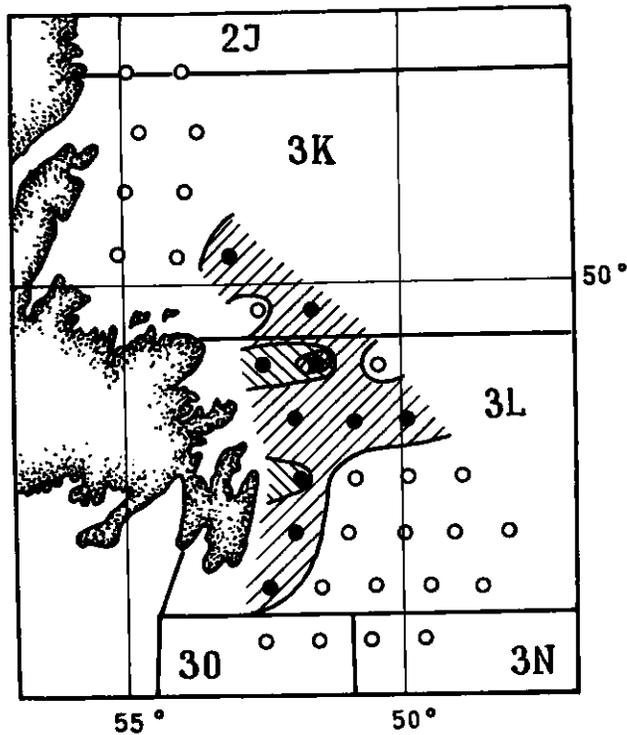


Fig.3. Distribution of capelin larvae. The 50 m depth.

- 1 - larvae absent
- 2 - larvae present
- 3 - 1-10 larvae
- 4 - 11-20 larvae
- 5 - over 20 larvae

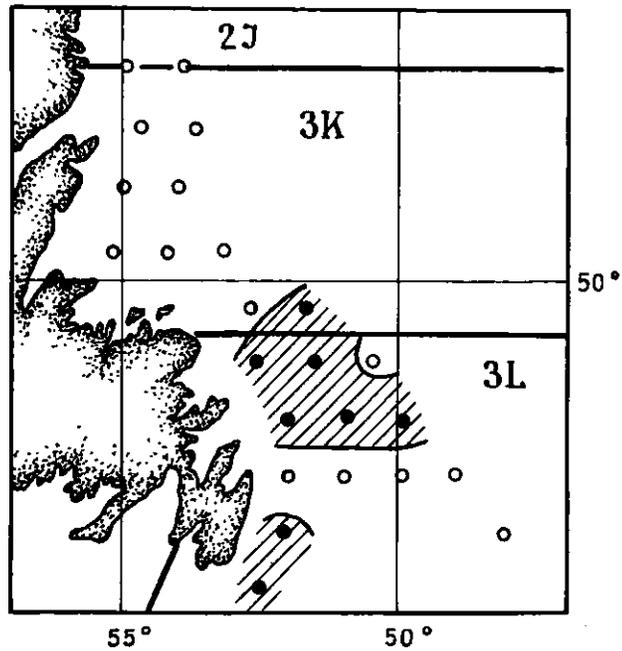


Fig.4. Distribution of capelin larvae. The 100 m depth

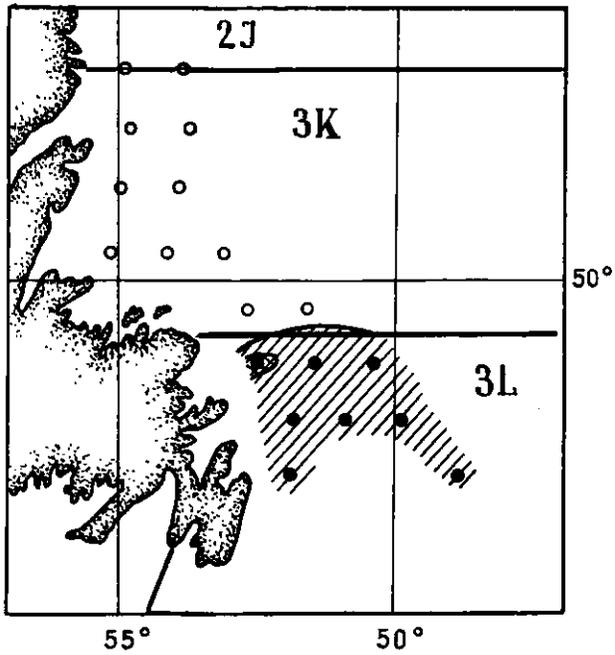


Fig. 5. Distribution of capelin larvae. The 150 m depth.

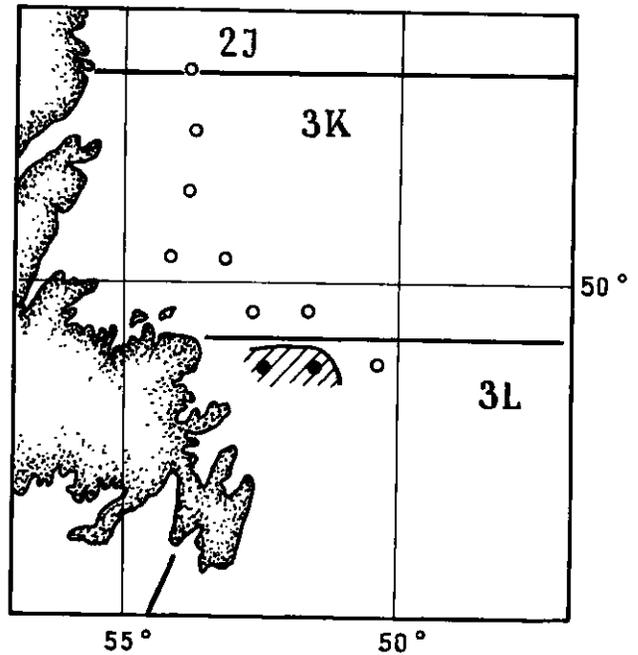


Fig. 6. Distribution of capelin larvae. The 200 m depth.

