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Results of Ichthyoplankton Survey on the Flemish Cap Bank in March-April 1984

by

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#### ABSTRACT

The paper considers results of the ichthyoplankton survey conducted on the Flemish Cap bank in March-April 1984. The distribution of larval Sebastes spp. is studied, quantitative and qualitative characteristics of eggs and larvae are given.

#### INTRODUCTION

In 1977 a programme of research into reasons for fluctuations of year class abundance of commercial fishes in the Flemish Cap was developed at the meeting of the ICNAF Working Group held in Murmansk.

In 1978 the Flemish Cap Project was started, with the ichthyoplankton survey being one of its stages.

The present paper gives results of the ichthyoplankton survey, completed by the RV "Poisk" on the Flemish Cap bank from 23 March to 8 April 1984.

#### MATERIAL AND METHODS

Ichthyoplankton samples were collected at 42 standard complex oceanographic and ichthyoplankton stations (Fig.1). Three tows were made at each station: a) a vertical tow (bottom-surface), a 800-0 m layer was sampled, with the net hauled at the speed of 0.8-1 m/s, when the sea depth exceeded 1000 m; b) a surface tow and a tow in the 25-30 m layer (in this case two nets were attached to a rope with the distance of 50 m between them and the vessel circulating for 10 minutes at a speed of 2.0-2.6 knots).

Material collected was fixed in a 3-5% formalin solution.

Identification and biometrical treatment of ichthyoplankton samples were carried out in PINRO. A standard length (SL) of larvae was taken. To determine the distribution pattern of larval Sebastes spp. results of a vertical tow of the IKS-80 net were converted to an index of larvae number per 1 m<sup>2</sup>.

#### RESULTS

Eggs and larvae of 16 fish species were collected and identified. During a whole period of long-term observations 42 fish species were identified in ichthyoplankton samples collected on the Flemish Cap bank (Serebryakov et al., 1984). Table 1 gives quantitative and qualitative characteristics of eggs and larvae sampled in spring 1984.

Larval redfish were most abundant in ichthyoplankton. They occurred over most of the area surveyed, excluding the shallowest waters on the bank. The densest larval concentrations of the Sebastes genus were observed at the western slope of the bank above 300-400 m depths (Fig.2). Their size varied from 4.5 to 9.5 mm and averaged 7.25 mm. Fig.3 shows a length frequency distribution of larval Sebastes spp.

The family of Myctophidae was presented by two species: a typical arcto-boreal species Benthosema glaciale and an uncommon for this area species Myctophum punctatum. Larval B.glaciale had the length from 4.5 to 9.8 mm and in M.punctatum it varied from 7.8 to 13.5 mm.

Due to the fact that all larvae of M.punctatum were found at the most extreme south-eastern station in the surveyed area, they may be supposed to have been transported into the area by marginal waters of the North Atlantic Current.

Ichthyoplankton samples contained eggs belonging to two families: Gadidae and Pleuronectidae. Fig.4 shows the distribution of eggs of Gadus morhua and Hippoglossoides platessoides.

REFERENCES

Serebryakov V.P., A.V.Astafjeva, V.K.Aldonov, and A.K.Chumakov.  
 1984. USSR ichthyoplankton investigations within the  
 framework of the Flemish Cap Project in 1978-1983.  
 NAFO SCR Doc. 84/IX/95, 1-47.

Table 1. Fish species which larvae and eggs were collected  
 in the Flemish Cap in March-April 1984.

Taxon	Eggs	Larvae	Stations
Anguilliformes g.sp		1	5.4
Gonostomatidae			
Cyclothone braueri		11	1.1;1.5;4.6;5.4;6.1; 6.6;7.4;7.6
Cyclothone acclinidens		2	7.1;7.3
Paralepididae			
Notolepis rissoi		1	7.6
Myctophidae			
Myctophum punctatum		21	7.5
Benthoosema glaciale		26	1.5;7.5
Gadidae			
Gadus morhua	148	4	1.5;2.3;2.4;2.5;4.2; 4.4;4.5;5.1;5.2;5.4; 5.5;6.2;6.5;6.6;7.2; 7.6
Pollachius virens		1	5.2
Brosme brosme		3	2.4;5.3;7.5
Urophycis chuss		3	5.2
Osmeridae			
Mallotus villosus		1	5.5
Scorpaenidae			
Sebastes spp.		13048	1.1-1.6;2.1-2.6;3.1- 3.6;4.1-4.6;5.1-5.6; 6.1-6.6;7.1-7.6
Lumpenidae			
Lumpenus maculatus		3	2.4;4.5;5.1
Pleuronectidae			
Hippoglossoides platessoides	127		3.4;4.4;5.1;5.2;5.3 5.4;5.5;6.4
Hippoglossus hipp.	2		7.5
Anarhichadidae g.spp		1	5.5

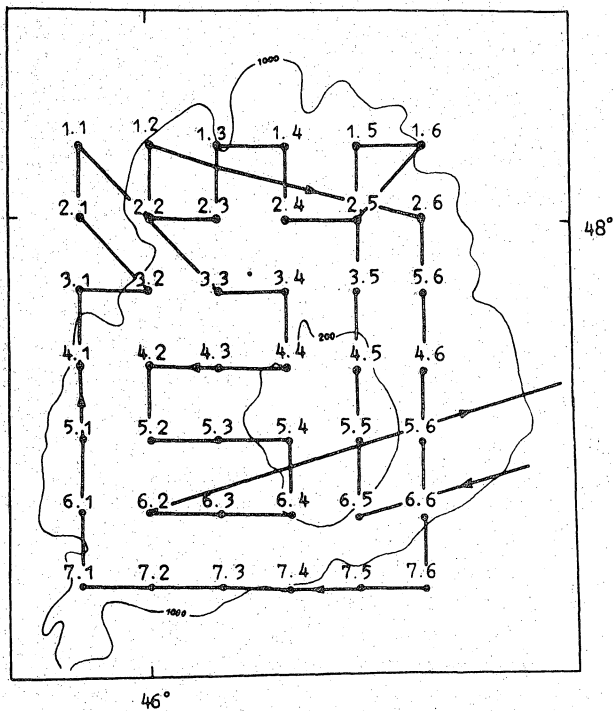


Fig. 1 Scheme and track of the ichthyoplankton survey in the Flemish Cap in March-April 1984

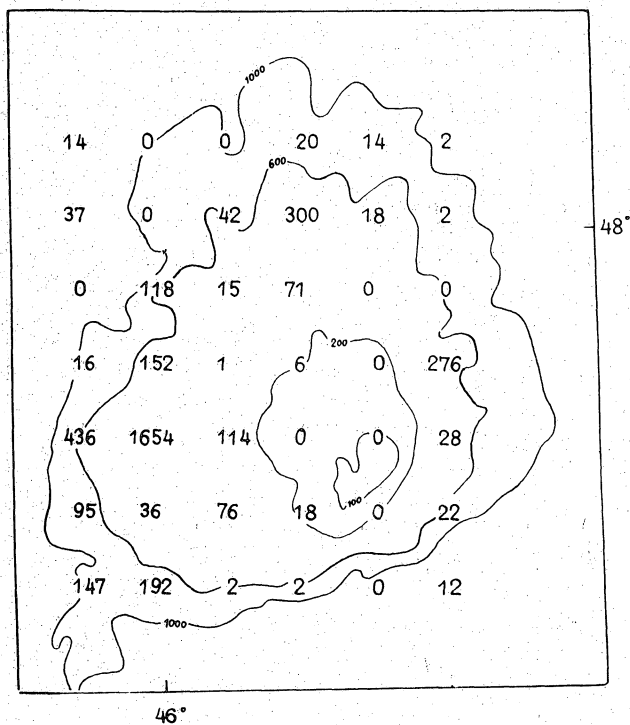


Fig. 2 Distribution of larval *Sebastes* spp. on Flemish Cap in March-April 1984 (individuals/m<sup>2</sup>).

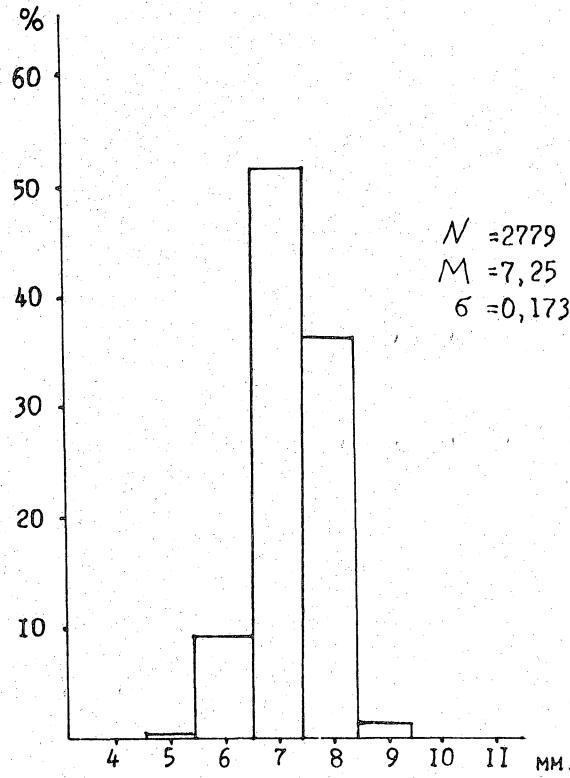


Fig.3 Length frequency distribution of larvae of the Sebastes genus from ichthyoplankton samples collected on Flemish Cap in March-April 1984.

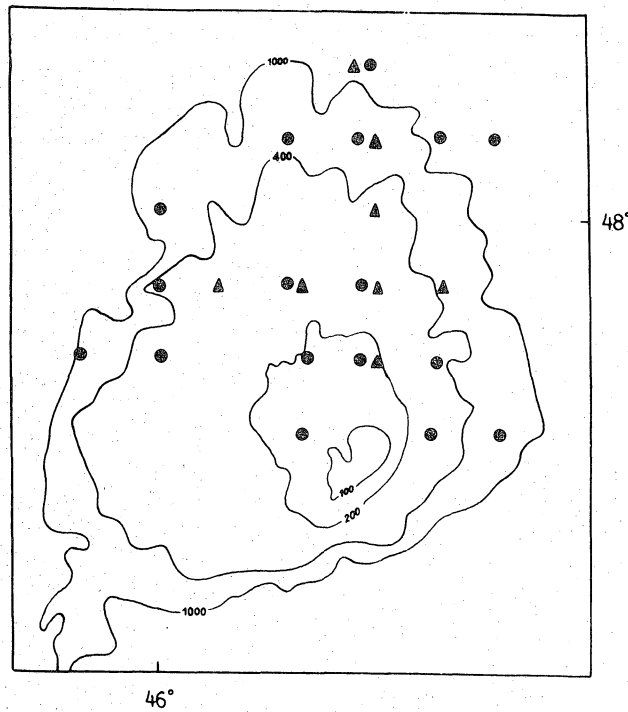


Fig.4 Distribution of eggs of Gadus morhua and Hippoglossoides platessoides on Flemish Cap in March-April 1984  
● - Gadus morhua ; ▲ - Hippoglossoides platessoides

