International Council for the Exploration of the Sea

CM 1977/H: 14
Pelagic Fish (Northern) Committee
Ref. Demersal Fish (S) Cttee

Investigations on Blue Whiting (Micromesistius poutassou) in the Faroe area, the west coast of the British Isles and the Bay of Biscay during January 1977.

by

R. Schöne
Institut für Seefischerei
Hamburg
Federal Republic of Germany

GENERAL

In Janurary 1977 FRV "Walther Herwig" carried out investigations on blue whiting in the area between the Faroes and the Bay of Biscay. Biological aspects, possibilities of a commercial fishery during this time of the year and processing trials were the main subjects of this cruise.

The cruise track, distribution of blue whiting concentrations and fishing stations are shown in Fig. 1.

Nearly all hauls were made with the 1000 # pelagic trawl, only 10 hauls with the 200' bottom trawl. The echo-survey was conducted by means of two middle frequency echo sounders (35+37kHz).

DISTRIBUTION OF BLUE WHITING

1. Faroes

NE of the Faroes (62°26'N/04°15'W) considerable concentrations of blue whiting were detected in a depth of 400m.

The blue whiting traces showed typical diurnal modifications in their vertical distribution (Fig. 2). In the early morning time the blue whiting layer was diffuse and catches amounted to less than 1 t/hour. During the day the layer became more dense and good catches were made (10 t/30 min).

2. West of the British Isles

West of Hebrides a few juvenile blue whiting were caught by bottom trawl. But the quantity was a too small one using it for further interpretation.

No concentrations of blue whiting could be found in the whole area between St. Kilda and SW-Ireland. Instead of these, however, dense traces of pearl-side or Sheppy argentine (Maurolicus mülleri/ GONOSTOMATIDAE) (Fig. 3a+b) were detected. Catches of this fish (3-4cm in average length) remained very low, because no small meshed cod-end was used in the pelagic trawl.

3. Bay of Biscay

Small concentrations of blue whiting were observed in the northern part of the Bay of Biscay (48°15'N-46°30'N).

Experimental hauls resulted in not more than 1 t/h.

In the middle part of the Bay of Biscay between 45°40'N and 44°10'N more dense shoals of blue whiting were found. Their traces were observed near the bottom at the edge of the continental shelf in a depth of 170-280m (Fig. 4).

Often blue whiting catches (1-5 t/30min) were mixed with horse-mackerel, pilchard and mackerel.

LENGTH DISTRIBUTION, SEX AND MATURITY

1. Faroes

The length distribution of blue whiting catches in the Faroe area is given in Fig. 5. It shows a range from 23cm to 37cm with a peak at 30cm.

The sex ratio was nearly 50:50. Some differences were observed in single hauls. The gonads of the blue whitings showed stages of maturity III-IV.

2. Bay of Biscay

Length distributions of the blue whiting catches in different parts of the Bay of Biscay are demonstrated in Fig. 6. The length composition in the northern part of the area shows peaks at 17cm and 22cm, in the other parts of the Bay of Biscay at 15 cm, respectively.

Nearly all blue whiting caught in this area were juveniles (maturity stage I). Few adult fish in the hauls showed maturity stages III and IV.

ENVIRONMENTAL STUDIES

Water temperature was measured at the fishing stations with a bathythermograph (down to 275m). At deeper stations Nansen bottles were used. Furthermore measurements with the temperature netsonde were done.

In the Faroe area blue whiting were caught at temperatures between 1°C-4°C, in the Bay of Biscay at temperatures between 9°-11°C.

DISCUSSION

In the investigation area a commercial fishery on blue whiting during this time of the year seems only to be possible around the Faroes. West of the British Isles no blue whiting was found. However, from results of other surveys, done by research vessels of the Federal Republic of Germany, it is known that blue whiting could be caught west of the Hebrides in considerable quantities in March/April. There are indications that blue whiting gather near the Faroes in winter before they migrate for spawning in spring a the banks west of Ireland.

In the Bay of Biscay good catches were available but the fish were too small for using them directly for human consumption. More investigations should be done to clarify the biology and the distribution of blue whiting in the Biscay area over the whole year.

REFERENCES

Sahrhage, D. and Schöne, R. (1975):
Preliminary results of German investigations on blue whiting (Micromesistius poutassou)
ICES CM 1975/H: 20, Pelagic Fish (N) Committee.

Schöne, R.: Fischereibiologische Untersuchungen am Blauen Wittling und Stöcker in den Gewässern westlich der Britischen Inseln und in der Biskaya.
Infn. Fischw. 24 (2): 43-48, 1977.

Wheeler, A.: The fishes of the British Isles and North-West Europe. London 1969.

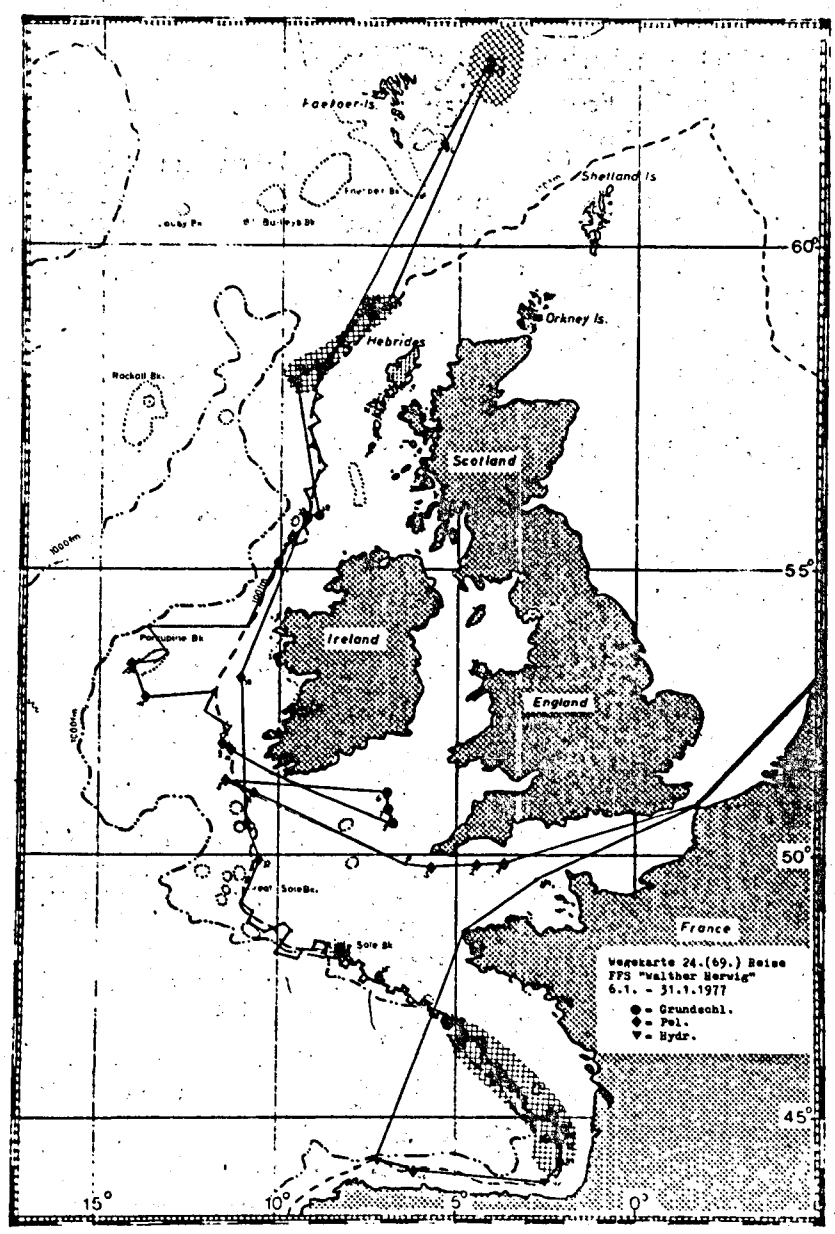


Fig. 1 : 24. Cruise FRV "Walther Herwig"
January 1977

distribution of blue whiting

● bottom trawl

◆ pelagic trawl

▼ hydrography

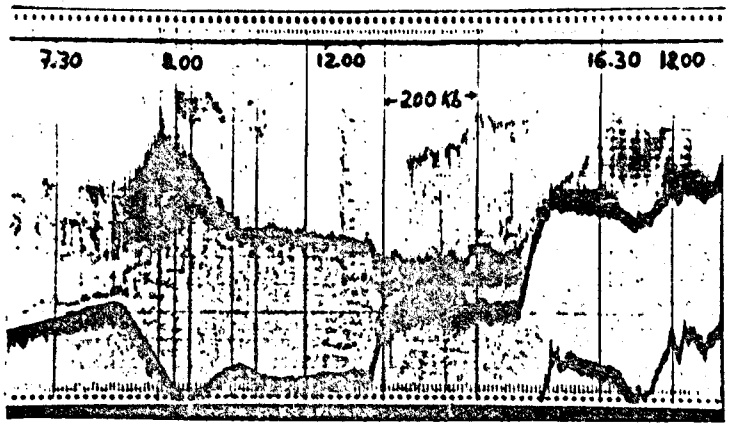


Fig. 2: Echo recordings of blue whiting (NE-Faroes - 62°26'N/04°15'W)

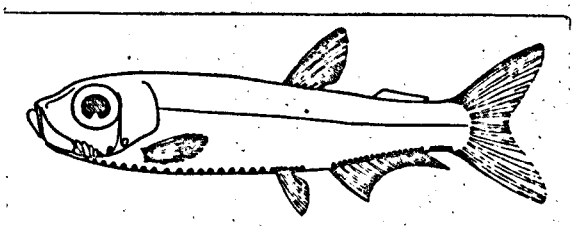


Fig. 3a: Maurolicus mülleri (from Wheeler, 1969)

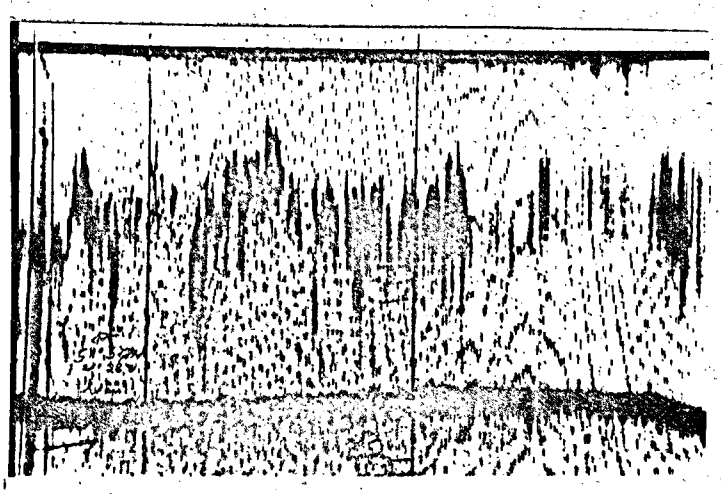


Fig. 3b: Echo recordings of Maurolicus mülleri (51°58'N/11°28'W)

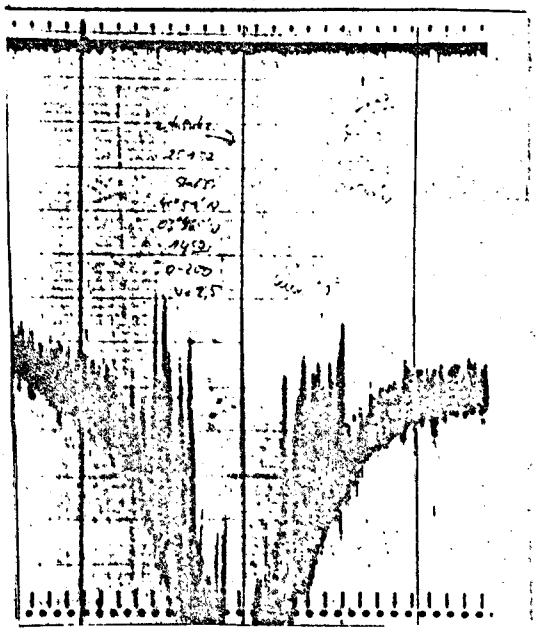


Fig. 4: Echo recordings of blue whiting in the Bay of Biscay (45°51'N/03°47'W)

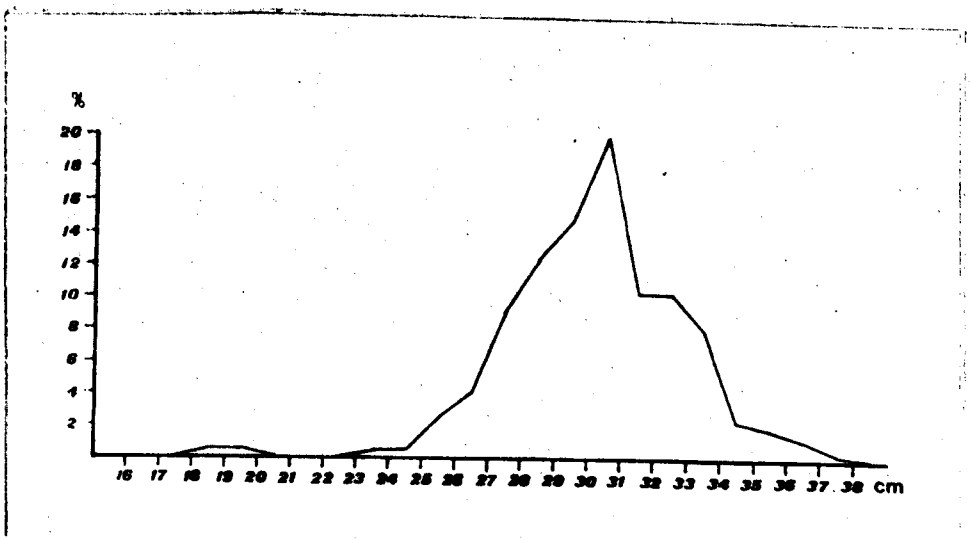
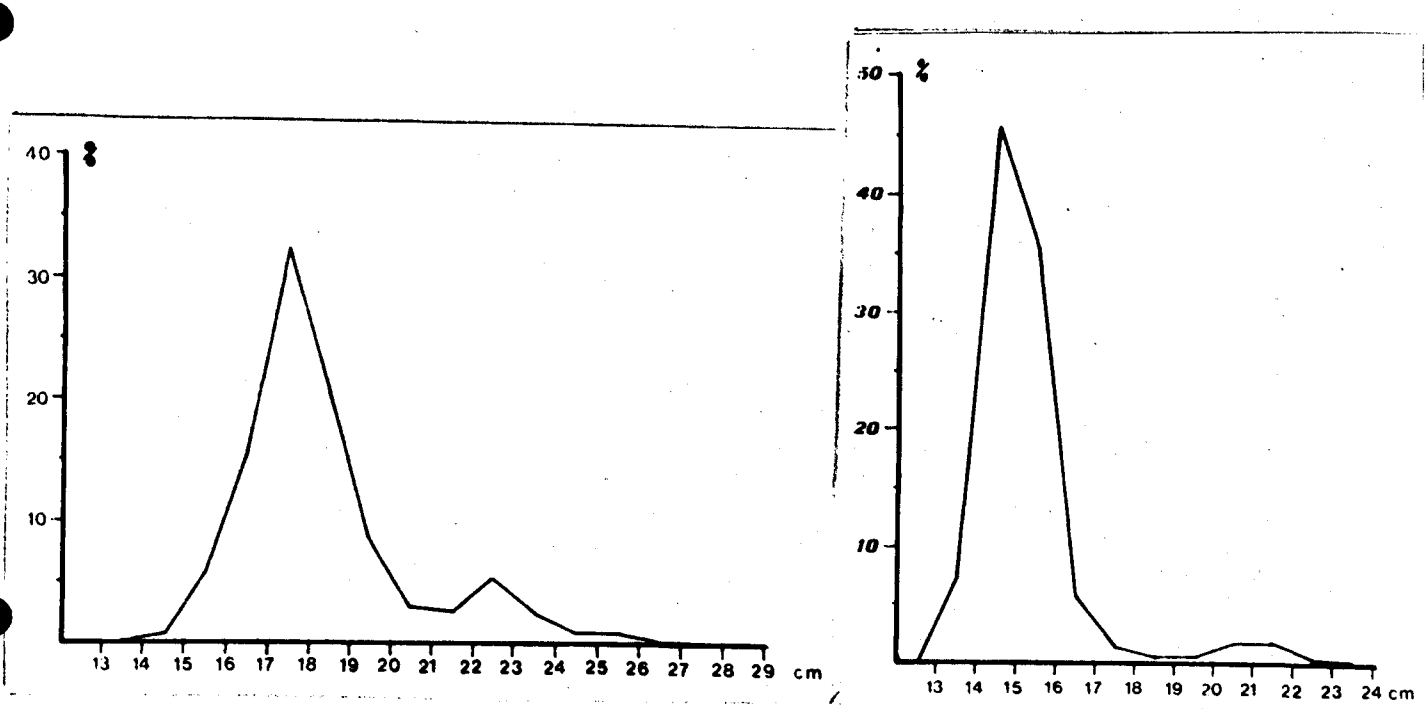


Fig. 5:
Length distribution of blue whiting in the Faroe area
(n = 67335/$\bar{x}$= 29,7cm)



a b

Fig. 6: Length distribution of blue whiting in the Bay of Biscay

a) Northern part (n = 55993/$\bar{x}$ = 17,7 cm)

b) middle part (n = 225335/$\bar{x}$ = 14,7 cm)