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Selectivity experiments with a large-meshed topside chafer.

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Selectivity experiments with large-meshed chafers have been undertaken by Polish, English and Norwegian scientists. Olsen (1966 a) used a standard "Small Granton" trawl with an ulstron cod-end of 140 mm mesh size. To the topside of the cod-end was attached another half with double mesh size, laced knot by knot around all four sides, along the midline with forks to each of the rear corners. Olsen's material was rather limited, but the data indicated that this type of chafer had little effect on the selectivity.

More attention was given to this type of chafer on a cruise with R/V "G.O. Sars" in May 1966 to the East-Finnmark Coast. The same trawl as described by Olsen (1966 a), with an ulstron cod-end of 130 mm mesh size was used. The chafer had exactly the double mesh size, and it was laced in the same manner as given by Olsen.

Selection factors for cod and haddock were estimated to 3.2 for both species (Table 1 and Fig. 1), compared with 3.5 for cod and 3.3 for haddock given by Olsen (1966 a). Selection factors estimated for single cod-end made of ulstron, were 3.5 for cod and 3.4 for haddock (Olsen 1966 b). Compared with these figures the selection factors for cod and haddock in the present material have been reduced by 9 and 6 percent for cod and haddock respectivily. These reductions are, however, smaller than half the reduction estimated for experiments with double cod-end, where the chafer had the same mesh size as the cod-end, and where it was tightly laced into the cod-end only around each edge (Anon 1966).

The catches in the present material were greater than those described by Olsen (1966 a), and about half the catches were in the cover. In some hauls the cover was almost filled with fish, and this might have reduced the selectivity. These experiments seem therefore to confirm the results of Polish, English (Blacker 1966) and Norwegian researches (Olsen 1966 a) that large-meshed chafers may have little effect on the selectivity of cod-ends.

References

Anon 1966. Co-opted members report. Coop.Res.Rep. Ser. B, 1965: 80-97.

Blacker, R. W. 1966. Tests of a large-meshed topside chafer. ICES. C.M., 1966, Doc. F: 2.

Olsen, S. 1966 a. Experiments with a topside chafer of double mesh-size. ICES. C.M., 1966. Doc. F: 1.

Olsen, S. 1966 b. Norwegian mesh selection experiments in 1963 and 1964. Coop.Res.Rep. Ser. B, 1965: 164-168.

Table 1. Records of experiments.

1. Ship - R/V "G.O. Sars"
2. Gear - standard "Small Granton" trawl
3. Date - 7-11 May 1966
4. Time - 6 a.m.-9 p.m.
5. Locality - Nordkyn-Vardø
6. Depth range - 60-360 metres
7. Cod-end material - Polypropylene ("Ulstron"), double braided, 110 yds./lb = 4510 R.tex.
8. Mesh gauge - ICES
9. Mesh size - mean 126.3 mm
   range 112-142 mm
   no. of measurements 180
10. Experimental method - covered cod-end with topside chafer two times the mesh size of the cod-end
11. Cover - ICES specification, mesh size 30 mm
12. Species - cod and haddock
13. 50 % retention length - cod 41 cm
    haddock 41 cm
14. Selection factor - cod 3.21
    haddock 3.21
15. 25-75 % selection range - cod 33.5 to 46.5
    haddock 36.0 to 44.5
16. No. of fish in selection range - Cod-end: cod 7823 haddock 2302
    cover: cod 9694 haddock 5682
17. Mean catch per haul - cod-end 960 kg. cover 630 kg.
18. Other catch - Small quantities
19. No. of hauls - cod 11 haddock 10
20. Average duration of haul - 1 hour 20 min.
21. Towing speed - 3.5 knots

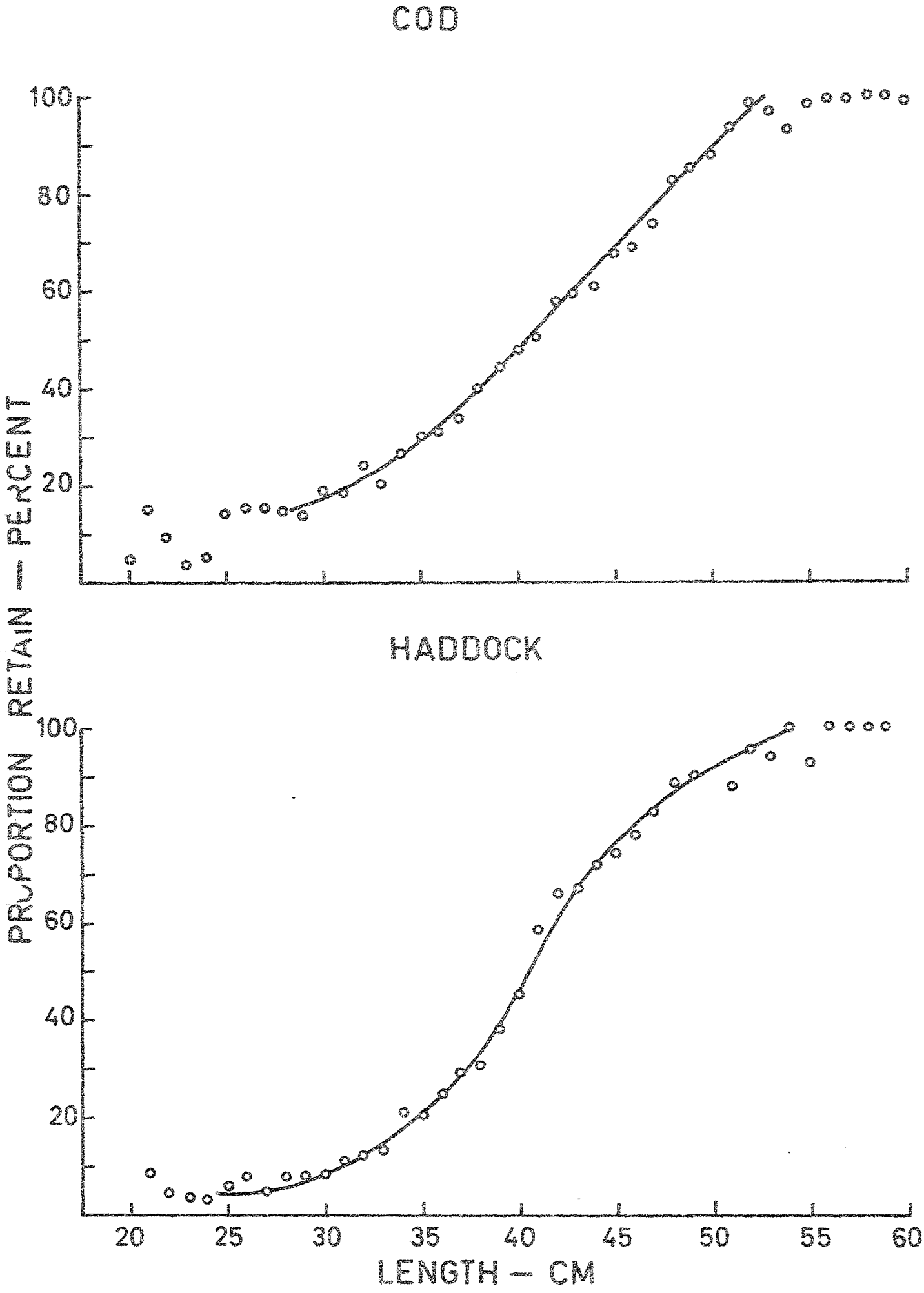

Fig. 1. Selection curves for cod and haddock.