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Brief Information on Adult Fishes sampled during the Investigations carried out  
in accordance with the NORWESTLANT programme  
in 1963

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During the ICNAF Environmental Survey, NORWESTLANT I-III, carried out in April-June of 1963, adult fishes were collected along with eggs and larvae samples. They were caught by research fishing gear (pelagic trawl, mid-water Isaacs-Kidd trawl, plankton nets and so on) and by commercial otter trawl. A brief description of the adult fishes, reported by some countries participating in the NORWESTLANT programme, follows.

I. Adult fish caught by research fishing gear

Adult redfish were caught on four occasions by the pelagic trawl of the German R/V ANTON DOHRN during NORWESTLANT II. Table 1 shows data presented by Dr. A. Kotthaus.

Some specimens of bathypelagic fish as well as invertebrates (Periphylla hyacinthina, Schizopoda, Cephalopoda, Chaetognatha) were taken by the mid-water Isaacs-Kidd trawl (Station 583/63, June 5, between 0155-0350 hours, at 62°31'N and 37°50'W, depth 2250 m, hauling layer 400-500 m). All the specimens of bathypelagic fish sampled during the trip of the R/V ANTON DOHRN by the pelagic and mid-water Isaacs-Kidd (KMT) trawls will be treated and described by Dr. Kotthaus.

On two occasions, adult fish were caught by a stramin net from the Soviet research vessel ACADEMIC KNIPOVICH during NORWESTLANT III (Table 2).

II. Adult fish taken by bottom otter trawl

(a) from R/V ANTON DOHRN

Three hauls were made using bottom otter trawl on board the German R/V ANTON DOHRN during NORWESTLANT II (Table 3).

The first haul took 162 cod (Gadus morhua). The size composition is given in Table 4. Fifty-five cod were measured and gutted. Twenty-five were males (including 14 spent) and 30 were females (including 13 spent).

In addition, 5 baskets (about 200 kg) of redfish (Sebastes marinus type marinus) were caught. One hundred and twelve of these were measured (Table 5).

Five redfish (Sebastes viviparus), 5-10 cm in length, were taken. They were put alive into an aquarium. Four specimens of haddock (Melanogrammus aeglefinus) were 24, 26, 39 and 47 cm in length, one spotted catfish (Anarhichas minor) was 112 cm in length, one blue catfish (Anarhichas latifrons) was 104 cm in length and 37 specimens of catfish (Anarhichas lupus) were from 19-69 cm. Furthermore, there were 6 American plaice (Hippoglossoides platessoides) from 27-40 cm; 4 specimens of halibut (Hippoglossus hippoglossus) of 50, 53, 56 and 65 cm; one argentine (Argentina silus) of 38 cm and one Arctic cod (Boreogadus saida) of 25 cm in length.

The second haul took mainly redfish (Sebastes marinus type mentella). Some 1,000 specimens were measured (Table 6). Also captured were 110 argentine (Argentina silus) from 15-32 cm in length; 11 redfish (Sebastes viviparus) from 17-25 cm; 39 black-spined dogfish (Etmopterus spinax) from 13-42 cm; 5 ratfish (Chimaera monstrosa); 17 specimens of Lepidion eques from 9-44 cm in length; 23 white hake (Urophycis blennoides) of 47 cm, one specimen of megrim (Lepidorhombus whiff) of 34 cm and some 50 kg of the gadoid fish (Micromesistius poutassou).

The third haul took 13 redfish (Sebastes marinus type marinus), including 9 males from 32-57 cm long and 4 females from 26-66 cm. 2 redfish (Sebastes viviparus) of 16 and 20 cm in length, 2 cusk (Brosme brosme) of 33 and 53 cm, one American plaice (Hippoglossoides platessoides) of 32 cm, 39 gadoid fish (Micromesistius poutassou) from 24-33 cm in length and 19 argentine (Argentina silus) from 30-37 cm.

(b) from R/V ERNEST HOLT and R/V EXPLORER

The English research vessel ERNEST HOLT during NORWESTLANT I made one haul on 28 April with the otter trawl on the Filker Bank (62°27.5'N and 40°42'W) at 210-247 m. The haul lasted from 2010-2040 hours, but it failed because the headline was damaged and the net broken.

The catch consisted of 38 cod from 55-99 cm long, more than one third of them were spent; stomachs were mainly empty but some contained euphausiidae. In addition, there were 10 haddock from 34-81 cm in length, 3 of them of 50, 51 and 81 cm long were mature males, all the others were immature. All stomachs contained ophiura. Furthermore, there were 11 redfish (Sebastes marinus), 7 were males and 4 females. There were also 6 halibut from 52-63 cm in length.

During NORWESTLANT III near West Iceland 3 hauls were made at 165-201 m. Redfish predominated in the catches. Another English research vessel EXPLORER made a trawl haul near Southeastern Greenland, but the nets were broken and the catch consisted mainly of specimens of redfish and cod.

The results of handline fishing for redfish will be treated and presented in a separate article by Mr D. N. Johns.

(c) from R/V ACADEMIC KNIPOVICH

The Soviet research vessel ACADEMIC KNIPOVICH during NORWESTLANT I made two hauls. The first haul began at 0835 hours on 10 April, at 57°30'N 59°20'W. The depth was 240 m, and the bottom temperature was 2.17°C. The catch consisted of only 5 cod from 38-58 cm in length. Their stomachs were full of polychaetae, crabs, jellyfish, octopus and small groundfish.

The second haul began at 0715 hours on 13 April and lasted an hour. It was made at 60°50'N, 48°43'W, at 125 m. The bottom temperature was about 0.8°C. Sixty-six cod from 47-70 cm in length were taken with some benthos in their stomachs. In addition, 199 redfish (Sebastes marinus) were taken, 52 were males from 27-43 cm in length and 147 were females from 29-50 cm. Eight spotted wolffish (Anarhichas minor) from 65-115 cm in length, 16 Atlantic wolffish (Anarhichas lupus) from 33-71 cm and one blue catfish (Anarhichas latifrons) were also taken.

During NORWESTLANT III, the ACADEMIC KNIPOVICH made 6 hauls using the bottom otter trawl. The positions and time of these hauls and the catches are given in Table 7.

### III. Summary

The main task of the NORWESTLANT programme was the sampling of larvae and eggs, while the fishing of adult fish was of a casual character.

Some otter trawl hauls described above, were made in the areas of regular and prolonged work of the research vessels and fishing boats and the catches made do not increase our knowledge of the habits of commercial groundfish in the ICNAF area.

Of somewhat greater scientific interest is the fact that adult bottom fish were taken in pelagic fishing gear. For instance, the R/V ANTON DOHRN from 17-22 June 1963 took 4 redfish (Sebastes mentella), including three spent females (Table I). They were taken in the open sea at depths of more than 2,000 m.. These facts indirectly confirm our assumption of the existence of independent pelagic populations of redfish which spawn in the open ocean.

TABLE 1. ADULT FISH TAKEN BY PELAGIC TRAWL FROM THE R/V ANTON DOHRN

STATION NUMBER	DATE	TIME (HOURS)	DEPTH (M)	APPROX. DEPTH OF HAUL (M)	BEGINNING OF HAULING		END OF HAULING		SPECIES	SIZE (CM)	SEX AND MATURITY STAGE	OTHER FISHES INVERTEBRATES
					N	W	N	W				
603/63	15 JUNE	1800-1825	2740	800	60°20'	39°20'	60°17'	39°11'	SEBASTES MARINUS TYPE	38	SPENT FEMALE	BATHYPELAGIC FISH, DEEPWATER SHRIMP, PERYPHYLLA HYACINTHINA
611/63	17 JUNE	0600-0850	2100	800	57°51'	33°52'	57°48'	33°45'	SEBASTES MARINUS TYPE	45	SPENT FEMALE	TODARODES BATHYPELAGIC FISH, DEEPWATER SHRIMP, PERYPHYLLA HYACINTHINA
632/63	21 JUNE	0000-0235	2680 2440	800	57°39'	37°10'	57°42'	37°15'	SEBASTES MARINUS TYPE	40	SPENT FEMALE	BATHYPELAGIC FISH, PERYPHYLLA HYACINTHINA, DEEPWATER SHRIMP
641/63	22 JUNE	2220-0035	2520	800	59°18'	33°33'	59°13'	33°29'	SEBASTES MARINUS TYPE	43 45	MALE SPENT FEMALE	CEPHALOPODA BATHYPELAGIC FISH, DEEPWATER SHRIMP

TABLE 2. ADULT FISH TAKEN BY STRAMIN NET FROM THE R/V ACADEMIC KNIPOVICH

STATION NUMBER	DATE	TIME (HOURS)	DEPTH (M)	DEPTH OF HAUL (M)	SPECIES		SIZE (MM)
					N	W	
791/137	13 JULY	2325-0050	2036	150-0	59°17'	45°11'	MALLOTUS VILLOSUS (3) 63,65,75
806/152	17 JULY	0015-0135	3650	105-0	55°40'	44°00'	STOMIAS FEROX 135

TABLE 3. DATA ON THE HAULS MADE BY THE R/V ANTON DOHRN

STATION NUMBER	DATE	TIME (HOURS)	DEPTH (M)	DIRECTION AND STRENGTH OF WIND		CLOUDINESS
				N	W	
567/63	3 JUNE	0900-0930	240-270	62°32'	40°35'	CLEAR
579/63	4 JUNE	1150-1220	330	63°20'	39°21'	CLEAR
599/63	9 JUNE	0825-0925	450	63°02'	24°00'	CLOUDY

