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NORWESTLANT 1963

Hensen-net samples collected by the R.V. DANA during NORWESTLANT Cruises II and III.

Analysis Tables

by

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As part of NORWESTLANT II and III, Hensen-net samples were collected from the R.V. DANA during the following cruises, designated here as DANA cruises A, B and C.

Cruise A: 25 May - 14 June; south-eastern approaches to Greenland and the waters west of Greenland to 64°09'N.

Cruise B: 30 June - 16 July; west Greenland waters from 59°06'N to 68°00'N.

Cruise C: 31 July - 4 August; twelve stations south-east of Cape Farewell.

Plankton volumes were measured after which fish eggs and larvae were removed. The samples were then sent by Mr Møller Jensen of Danmarks Fiskeri-og Havundersøgelser to the Oceanographic Laboratory, Edinburgh where a general analysis of the plankton was undertaken.

Methods of analysis

The large organisms listed below were counted and removed from the whole sample.

Calanus hyperboreus V & VI	*Clione* - large
Euchaeta norvegica V & VI	*Tomopteris* > 10 mm
Amphipoda > 5 mm	Chaetognatha > 10 mm
Euphausiacea > 6 mm	Larvacea > 10 mm tail
Decapoda	Coelenterata
Spiratella spp. - large	Ctenophora

Samples were then divided into subsamples for counts of the smaller organisms, usually by means of the subsampler designed by Hopkins (1962)** but in about 25% of the samples a whirling flask and Stempel pipette was used. Generally aliquots of 1/25 to 1/100 of the original sample, comprising over 100 organisms, were counted and identified to the following species and groups.

* *C. finmarchicus* V - VI
C. finmarchicus I - IV
* *C. glacialis* V - VI
* *C. hyperboreus* I - IV
* Total *Metridia*
* *Euchaeta* I - IV
Pseudocalanus sp.
Oithona sp.
Acartia sp.
Scolecithricella sp.
and other small adult copepods (e.g. *Microcalanus*)
Unidentified copepodites
Copepod nauplii

Euphausiid eggs
Euphausiid nauplii
*Euphausiid calyptopes
*Euphausiid furcilias
*Amphipoda < 5.0 mm
*Ostracoda
Cirripede larvae
* *Tompoteris* < 10.0 mm
*Chaetognatha < 10.0 mm
*Larvacea < 10.0 mm tail
Spiratella - small
Echinoderm larvae

** Limnology & Oceanography Vol. 7, pp. 424-426.

The remainder of the sample was then searched for any of the organisms marked here with an asterisk if these were not present in the subsample.

Presentation of Data

Tables I - III give, in a condensed form, the results of the general zooplankton analyses. The positions of the stations listed are given in the DANA cruise report. It should be noted that Hensen-net hauls were not taken at all stations and that the sample from station 11.926 was lost on board ship.

The results are expressed as numbers of animals per cubic metre. These values were calculated on the assumption of 100% filtration by the Hensen net (mouth diameter 72 cm). The depths of the hauls and the assumed volumes filtered are given below to allow conversion ofthe data to other forms (e.g. numbers under a square metre).

Station	Depth of Haul m	Volume filtered m^3
All except the following -	100 - 0 m	40.7
11.923	70 - 0	28.5
928	80 - 0	32.6
944	80 - 0	32.6
945	38 - 0	15.5
975	90 - 0	36.6
988	80 - 0	32.6
989	42 - 0	17.1
12.002	65 - 0	26.4
003	40 - 0	16.3
023	74 - 0	30.1
024	60 - 0	24.4
040	39 - 0	15.9
046	75 - 0	30.5
047	35 - 0	14.3
048	75 - 0	30.5
052	60 - 0	24.4
053	25 - 0	10.2

The sign (+) in Tables I - III indicates occurrence at less than 1 per cubic metre. In the final column of each table letters represent the presence of species or groups which were not numerically important, but which may be useful as indicator species. A key to these species and groups is given below.

A - Calanus glacialis
B - Calanus hyperboreus
C - Metridia longa
D - Heterorhabdus norvegicus
E - Scolecithricella minor
F - Pseudocalanus sp.
G - Microcalanus sp.
H - Oncaea sp.
I - Euchirella rostrata
J - Acartia longiremis
K - Centropages hamatus
L - Ostracoda
M - Amphipoda
N - Clione limacina
O - Spiratella helicina
P - Aglantha digitale

TABLE I

NORWESTLANT 1963 - DANA CRUISE A.

HENSEN NET SAMPLES (Nos. per cubic metre)

STATION NUMBER	COPEPODA						EUPHAUSIACEA					THECOSOMATA		LARVACEA	CHAETOGNATHA	Tomopteris	COELENTERATA	Larvae of bottom inverts.	Other species or groups
	Calanus finmarchicus V-VI	Calanus finmarchicus I-IV	Paraeuchaeta norvegica	Oithona	other small copepods	copepod nauplii	Adult (T. long.)	furcilia stages	calyptopis stages	nauplius stages	eggs	Spiratella retroversa	small Spiratella						
11.899	15	22	1	56	-	22	+	-	6	3	4	1	4	2	1	+	+	-	BLP
900	6	4	-	-	1	1	+	-	-	-	-	2	1	1	-	+	-	-	BEFLMN
901	5	1	+	1	2	+	+	-	2	-	-	2	1	3	-	-	+	-	BEFLMP
902	+	28	-	54	1	52	+	-	2	-	-	1	5	4	-	+	+	-	BCFLM
904	17	4	-	7	4	2	+	-	9	2	4	2	6	1	+	+	+	-	ELP
905	1	24	+	35	-	111	-	-	-	-	-	+	-	-	+	1	-	+	BCD
906	1	17	-	31	2	24	+	-	1	-	-	+	2	3	+	+	-	-	CF
907	3	12	-	22	3	29	+	-	4	-	-	2	-	2	+	-	+	-	BCFLMP
910	16	3	+	8	1	1	-	-	+	-	-	1	2	7	+	1	+	-	BELMP
911	15	34	1	133	2	192	+	+	5	-	-	1	10	10	+	+	+	5	BCELMP
914	34	130	1	18	2	35	-	+	1	-	-	+	2	-	2	-	-	1	BLM
915	1	37	+	37	3	147	-	-	1	13	-	+	1	14	-	1	+	3	AFGP
916	20	37	-	108	5	57	+	-	-	10	-	1	2	5	+	-	-	-	BF
917	10	33	2	113	-	118	+	-	10	10	-	1	-	8	+	-	+	+	ABCLMP
918	20	154	+	23	-	44	+	1	4	1	-	1	1	9	2	+	+	-	BLMP
919	20	150	+	147	10	111	-	+	17	5	-	11	-	12	+	+	-	-	BH
920	14	150	-	4	2	12	+	+	3	1	-	1	1	21	+	1	+	-	BFLMOP
921	6	35	1	11	-	18	+	+	7	-	-	1	2	10	5	+	+	+	BNP
922	1	1	-	1	1	3	-	-	+	1	-	+	-	+	-	+	-	+	DF
923	+	8	-	8	3	27	-	-	2	50	1	-	-	35	-	-	-	10	ABF
924	-	36	-	13	2	44	-	-	4	20	2	1	-	21	-	-	-	12	AM
925	4	85	-	15	-	49	-	+	9	-	-	1	-	8	+	-	+	2	P
927	2	57	-	35	-	56	-	+	4	-	-	+	1	13	+	-	-	2	BCL
928	+	12	-	13	4	55	-	-	4	5	-	-	-	33	3	-	-	2	ABFH
929	+	49	-	9	7	610	-	-	55	31	-	-	-	28	+	-	-	41	AF
930	+	61	-	-	2	49	-	-	-	64	-	+	-	10	-	-	-	14	BF
931	+	78	-	5	2	174	-	-	22	47	-	-	-	27	-	-	-	7	AF
932	3	94	1	14	1	193	-	-	5	43	-	+	1	47	+	-	-	10	BLO
933	4	218	1	14	4	44	+	1	3	1	-	1	1	8	1	-	+	3	BCEFLMOP
941	+	62	-	10	1	233	+	+	1	-	-	1	-	-	-	-	-	-	H
942	-	11	1	4	1	30	-	+	1	2	-	-	1	9	-	-	-	2	CM
943	-	62	-	10	2	110	-	+	20	33	+	-	1	17	-	-	-	19	AF
944	-	6	-	3	-	18	-	-	5	13	-	-	-	68	-	-	-	2	-
945	-	19	-	8	-	47	-	+	6	5	-	-	-	24	-	-	-	10	-
946	1	113	-	8	-	180	-	+	27	1	13	-	1	92	-	-	1	22	-
947	-	236	-	17	7	206	-	+	4	13	98	+	-	7	-	-	-	7	CL
948	+	109	-	8	4	96	-	+	18	16	+	+	1	8	-	-	-	4	ABFM
953	+	172	-	2	2	137	-	-	11	18	+	+	-	44	-	-	-	2	-
954	+	23	-	2	1	14	-	-	1	10	-	-	-	2	-	-	-	1	F
955	+	147	-	18	9	84	-	-	4	2	+	-	-	51	-	-	-	2	ABFG
956	-	26	-	6	-	14	-	-	1	3	-	-	1	1	-	-	-	2	-
957	-	50	-	-	-	66	-	-	3	6	-	-	-	13	-	-	-	6	M

TABLE II

HENSEN NET SAMPLES (Nos. per cubic metre)

STATION NUMBER	COPEPODA						EUPHAUSIACEA					THECOSOMATA		LARVACEA	CHAETOGNATHA	Tomopteris	COELENTERATA	Larvae of bottom inverts.	Other species or groups
	Calanus finmarchicus V-VI	Calanus finmarchicus I-IV	Paraeuchaeta norvegica	Oithona	other small copepods	copepod nauplii	Adult (T. long.)	furcilia stages	calyptopis stages	nauplius stages	eggs	Spiratella retroversa	Small Spiratella						
11.964	7	42	1	6	1	2	-	4	5	-	-	+	+	20	2	+	+	1	ELP
965	6	149	-	4	-	-	-	3	4	-	-	-	2	12	+	+	4	-	P
966	29	563	2	123	10	54	-	2	10	2	-	1	34	47	-	+	+	20	FGHP
967	+	187	-	9	6	11	-	-	2	2	-	+	1	43	-	-	6	7	BF
968	13	232	-	6	4	43	-	+	+	1	-	+	16	20	-	-	4	5	P
969	8	81	+	22	12	39	-	-	-	-	-	+	12	22	-	-	-	5	-
970	39	403	+	15	-	16	+	3	9	-	-	1	5	10	-	1	+	-	MP
971	143	184	3	5	10	3	-	15	7	-	-	2	-	2	-	+	-	-	EFLM
972	9	36	1	7	1	2	-	12	1	-	-	1	2	13	+	-	1	+	AMP
973	22	376	10	88	9	10	+	14	29	-	-	1	30	61	+	-	-	5	BHO
974	5	111	-	-	5	52	-	5	5	2	-	+	7	20	-	-	+	7	P
975	-	18	-	5	1	5	-	+	9	6	-	-	1	6	+	-	3	7	J
976	10	103	-	25	+	34	-	+	+	-	-	+	5	56	-	-	5	+	BFM
977	+	68	1	13	2	1	-	+	1	+	-	+	1	13	-	+	+	19	BFHP
978	1	147	-	28	1	7	-	2	1	-	-	+	14	5	+	+	+	29	P
979	+	270	-	4	4	9	+	1	+	-	-	+	4	12	-	+	1	10	ABHP
980	10	23	+	10	-	-	-	3	11	-	-	+	1	9	1	+	+	19	BLP
981	12	42	-	5	+	-	-	3	2	-	-	1	1	2	2	+	1	2	FLP
982	-	128	-	7	2	2	-	+	2	-	-	+	-	5	-	+	+	2	-
983	-	16	-	-	3	2	-	-	+	1	-	+	3	3	-	-	6	2	FH
984	-	98	-	12	2	12	-	+	+	1	-	-	-	10	2	-	+	-	P
985	-	169	-	5	9	7	-	-	2	1	-	+	4	6	-	+	3	23	ABFH
986	6	191	+	20	2	54	-	3	5	-	-	1	-	20	-	-	5	22	MP
987	17	136	-	38	4	5	+	1	4	-	-	+	7	32	-	-	1	18	BFHLMP
988	-	162	-	13	10	25	-	+	5	4	-	-	4	18	-	-	1	42	FGHMP
989	-	33	-	9	6	6	-	1	26	3	-	-	-	15	-	-	1	61	FP
990	-	160	-	5	5	2		1	2	5	-	+	-	5	-	-	2	10	FHP
991	-	130	-	9	1	2	-	1	1	-	-	+	1	10	-	-	6	6	HLMN
992	1	43	1	25	1	6	-	1	-	-	-	+	1	15	+	-	+	4	ELM
993	18	121	+	12	2	13	-	1	-	-	-	+	1	1	-	-	-	-	ELM
994	12	315	+	74	12	17	-	3	-	-	-	+	-	-	-	-	+	5	LM
995	4	55	+	9	13	6	-	1	-	-	-	+	-	1	+	-	+	+	ABE
999	2	155	-	48	9	9	-	1	2	-	-	1	6	4	-	-	+	1	BEFHLMP
12.000	-	41	-	25	5	-	-	2	1	1	-	+	4	6	-	-	+	13	FHP
001	+	77	+	10	4	4	-	+	-	1	-	+	1	5	-	-	2	9	AFMP
002	-	47	-	4	2	3	-	+	1	1	-	-	6	8	1	-	1	34	FM
003	-	92	-	55	-	40	-	-	+	-	-	-	3	-	-	-	-	18	-
004	-	44	-	20	25	19	-	-	7	2	-	-	1	6	-	-	4	9	FHJ
005	5	143	-	54	17	10	+	1	-	-	5	-	5	5	-	-	+	2	BFP
006	+	106	-	44	-	2	-	6	10	-	-	+	7	10	-	-	10	20	BM
007	6	84	7	34	12	7	+	1	2	-	-	-	1	10	+	-	4	9	BEFHLMN
008	13	223	1	44	14	7	-	1	-	-	-	+	3	4	-	-	+	6	ABEFMP
009	+	63	-	15	2	12	-	1	1	-	-	-	5	4	-	-	2	7	H
010	-	197	-	26	12	3	-	1	1	1	-	-	1	1	+	-	1	2	BCFHMP
011	2	66	-	23	8	5	-	+	-	-	-	-	1	1	-	-	+	10	FJP
012	2	49	+	23	13	10	-	+	1	1	1	-	1	1	-	-	1	1	FGP
013	+	176	-	26	7	26	-	1	1	29	44	-	+	1	-	-	+	23	AFHP
014	1	136	-	10	6	9	-	1	2	1	-	-	1	8	-	-	3	18	CFHP
015	5	64	+	20	7	11	-	1	1	-	-	-	1	4	-	-	2	27	ABEFGHM
016	5	147	-	25	3	-	-	+	-	-	-	-	-	5	-	-	1	10	ABCFMP

TABLE II (continued)

STATION NUMBER	COPEPODA						EUPHAUSIACEA					THECOSOMATA		LARVACEA	CHAETOGNATHA	Tomopteris	COELENTERATA	Larvae of bottom inverts.	Other species or group
	Calanus finmarchicus V-VI	Calanus finmarchicus I-IV	Pareuchaeta norvegica	Oithona	other small copepods	copepod nauplii	Adult (t. long.)	furcilia stages	calyptopis stages	nauplius stages	eggs	Spiratella retroversa	small Spiratella						
12.017	10	467	5	25	+	64	-	9	-	-	-	+	-	+	+	-	+	5	ABCFMP
018	2	386	+	54	17	22	-	7	-	-	-	+	-	2	2	-	+	5	BFMP
019	2	329	1	52	12	22	-	1	+	-	-	+	-	10	+	-	8	10	BCMP
020	-	73	-	30	14	6	-	2	1	-	-	+	-	2	-	-	3	11	FP
021	2	117	-	23	5	2	-	2	4	-	1	-	2	7	-	-	+	8	FHP
022	+	120	-	17	10	2	-	1	1	1	-	-	4	11	+	-	14	13	ABCFG
023	-	203	-	43	20	11	-	1	3	14	-	-	3	7	+	-	10	13	-
024	3	397	-	72	32	4	-	+	5	7	-	-	-	17	-	-	2	21	ABFGJ
025	1	351	-	59	78	10	-	+	-	2	-	-	2	-	-	-	+	5	ACFP
026	1	176	-	11	11	21	-	1	5	28	6	-	1	8	-	-	2	14	H
027	1	197	-	34	20	10	-	2	5	10	-	-	5	20	-	-	+	74	BCEFHMP
028	+	252	-	17	17	15	-	1	2	6	-	+	2	4	-	-	3	27	ABFH
029	+	15	-	7	2	15	-	5	-	-	-	+	-	-	-	-	+	-	AMP
030	-	74	-	5	15	7	-	1	-	-	-	-	-	7	-	-	8	2	FHLP
031	-	91	-	9	4	7	-	1	9	15	15	-	+	7	-	-	+	8	JN
032	+	147	-	17	17	12	-	+	7	34	-	-	2	11	-	-	1	13	AJ
033	10	595	-	84	64	31	-	2	8	8	9	-	-	20	-	-	5	15	FGP
034	+	26	-	1	1	4	-	+	-	1	-	-	-	2	-	-	+	1	-
035	3	160	+	18	12	9	-	8	2	-	-	+	2	5	+	-	7	17	BEFHLMP
036	-	12	-	4	1	1	-	+	1	17	1	-	-	16	-	-	+	2	FK
040	+	8	-	17	19	6	-	+	5	8	-	-	2	-	-	-	+	31	FJ
041	-	123	-	2	10	-	-	2	12	17	22	-	-	7	-	-	+	7	ABFP
042	+	118	-	15	22	15	-	2	2	12	5	-	-	10	-	-	+	12	FK
043	1	126	-	6	6	6	-	1	3	1	-	-	2	6	1	-	3	10	HMN
044	10	202	+	33	39	4	+	11	15	2	-	+	-	10	+	-	+	22	ABJMP
045	++	84	-	26	20	15	-	2	2	4	-	+	3	2	-	-	2	14	AGHP
046	+	7	-	4	7	-	-	+	-	5	48	-	-	1	-	-	-	2	ACFM
047	-	7	-	15	14	16	-	-	+	-	-	-	-	7	-	-	-	146	FJMN
048	-	11	-	12	16	-	-	+	1	29	190	-	-	-	-	-	+	26	AFJKP
049	1	196	-	15	56	106	-	+	36	10	-	-	-	104	-	-	+	10	ABFHJNP
050	-	80	-	9	-	-	-	+	4	5	-	-	+	7	-	-	-	24	GJ
051	+	26	-	14	18	9	-	1	3	8	20	-	1	3	+	-	-	25	BFJ
052	-	14	-	12	27	2	-	1	11	62	16	-	-	-	-	-	-	17	BEJ
053	-	11	-	1	1	-	-	1	+	+	-	-	-	-	-	-	+	+	-

TABLE III — DANA CRUISE C.

I2.064	39	45	-	277	8	1	+	1	2	-	-	-	6	4	+	2	22	5	EFGHNP
065	61	29	2	295	7	32	+	1	5	-	-	+	10	10	5	5	5	5	NMP
066	39	33	2	154	4	10	+	1	2	-	-	-	4	15	+	2	11	1	FHP
067	71	20	2	305	7	10	5	+	-	-	-	1	15	10	+	+	+	-	DELMP
068	63	3	5	31	7	1	+	3	-	-	-	1	1	2	2	1	-	-	ELMNP
069	36	17	1	80	4	18	+	+	-	-	-	+	5	1	+	+	-	-	ELM
070	3	3	4	128	2	12	+	1	-	-	-	1.	2	-	1	1	-	-	EMN
071	5	6	+	115	-	21	-	+	-	-	-	+	2	2	+	1	-	-	LMN
072	619	1236	3	12	8	1	-	4	4	-	-	2	20	-	1	-	-	-	EFM
073	275	44	5	7	7	-	-	+	-	-	-	1	20	-	3	-	-	-	EM
074	265	7	+	+	2	-	+	-	-	-	-	-	+	-	+	-	-	-	E
075	138	43	4	30	7	1	+	1	2	-	-	-	3070	2	1	-	-	-	EIM