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Preliminary statement on ICNAF NORWESTLANT 2 Canadian zooplankton collections

by E. H. Grainger
Arctic Biological Station
Fisheries Research Board of Canada
Montreal

During the Norwestlant-2 phase of the 1963 ICNAF Greenland survey zooplankton collections from the Canadian vessels Baffin and Sackville comprised 70 Hensen, 37 Icelandic and 25 stramin net tows. All collections were made according to the standardized methods agreed to for the full ICNAF survey, Hensen nets being hauled vertically from 100 metres to the surface at the rate of 1 metre in 3 seconds, Icelandic and stramin gear being hauled obliquely from 50 metres to the surface for 30 minutes, the first at 5 knots, the second at 2 knots.

Laboratory treatment of samples varied, according to the size of the sample, its composition and the information sought from it. Complete analysis of Hensen samples is being undertaken, while from the Icelandic and stramin samples only "large" organisms are being considered. With Hensen collections all "large" forms were removed and treated in their entirety. This group includes adult euphausiids, most pteropods, amphipods, medusae, chaetognaths, ctenophores, tomopterids, certain other polychaetes, cypris larvae, certain decapod and echinoderm larvae, large copepods and fish larvae and eggs. The remainder, for the most part copepods, ostracods, larvaceans and various young stages, were subsampled, usually as 5% or 10% subsamples. With Icelandic and stramin tows a similar preliminary treatment was followed, but with these only the larger organisms were recorded, copepods below stage V (stage IV in 3 especially large species), ostracods, larvaceans and all young stages being omitted from the records. Frequently samples were so small that no subsampling was done.

The following station list gives locations and dates of collections reported in the accompanying tables.

Station	Date	N. Lat.	W. Long.	Station	Date	N. Lat.	W. Long.
2	26/5	57°27'	58°50.3'	38	8/6	65°06'	53°57'
3	"	58°13.5'	57°04'	39	"	65°05.6'	53°38.5'
4	27/5	58°47'	55°08'	40	"	65°06.2'	53°00'
5	"	59°25'	53°09.2'	47	11/6	68°08'	57°06'
6	28/5	60°00'	51°15'	48	"	68°05'	56°45'
7	"	60°29'	50°24.8'	49	"	67°57.8'	55°53'
8	"	60°37.8'	50°01.5'	50	"	67°53.8'	55°24'
9	"	60°50'	49°24'	51	"	67°50.9'	55°02'
10	"	60°49'	48°34.5'	BT33	3/6	62°41'	51°43'
12	29/5	61°50.9'	50°36.5'	BT34	"	62°44'	52°29.2'
14	"	61°40.5'	51°45'	BT37	"	63°08'	52°17'
16	30/5	61°26'	53°30.2'	BT38	4/6	63°27.9'	51°50'
18	"	60°48'	57°30'	Bt39	"	63°52.8'	53°22.2'
22	1/ 6	63°11.5'	58°13'	BT40	"	63°54.2'	53°53.9'
25	"	63°37.2'	55°23'	BT41	6/6	64°34.2'	52°58'
27	2/6	63°54.2'	53°53.5'	BT42	"	64°40'	53°55'
30	"	64°05.3'	52°46.8'	BT43	7/6	64°45'	54°47.9'
31	"	63°59.5'	52°22'	BT44	"	64°52'	55°40'
32	3/6	62°46.8'	53°11'	BT53	8/6	65°15'	53°55'
33	7/6	65°05.5'	57°45'	BT54	"	65°20'	54°40'
34	"	65°06'	56°30'	BT55	"	65°28.2'	55°32'
35	"	65°06'	55°40'	BT56	"	65°37.5'	56°30'
36	"	65°06'	54°55'	BT72	10/6	67°27.1'	56°48.2'
37	8/6	65°06'	54°24'				

All the stramin net, about one half the Icelandic net and about 1/10 the Hensen net material is reported here in the attached tables. Stramin and Icelandic records are given as numbers of individuals per 30-minute tow, Hensen records as numbers of individuals in the upper 100 metres beneath a square metre.

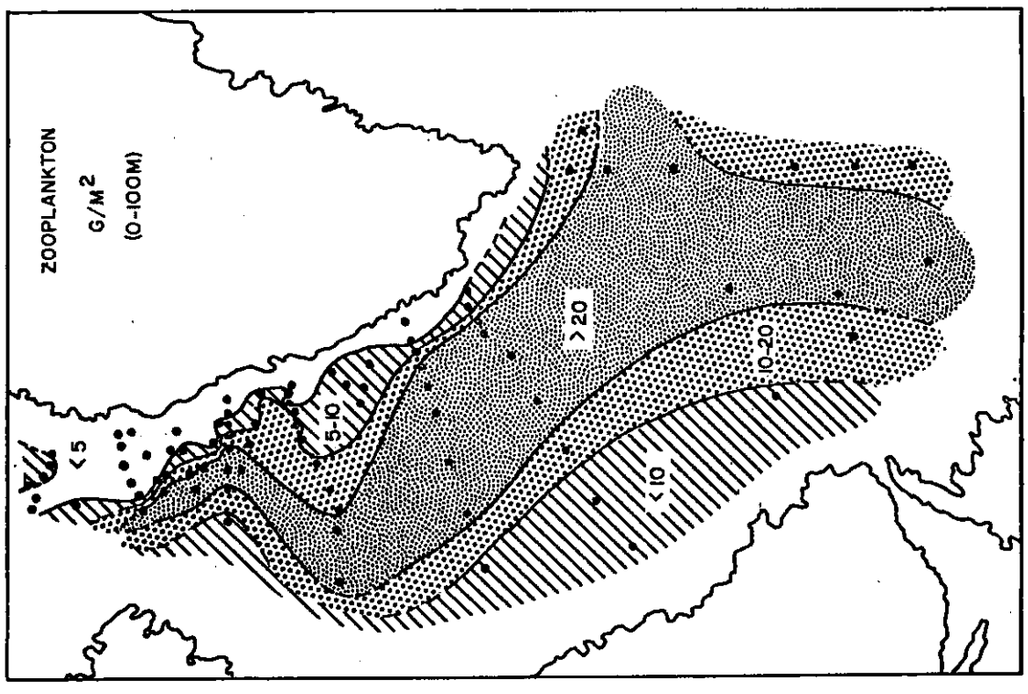
Wet weights of all the Hensen collections have been determined. Results are shown on the accompanying map, expressed as grams of plankton in the upper 100 metres beneath a square metre of surface.

Lowest standing crop values (below 5 grams per square metre) were found immediately along the West Greenland coast, over relatively shallow water. To the west, and running along approximately the 100-fathom line, quantities ranged from 5 to 10 grams, and to the west of this from 10 to 20 grams. In much of the central Labrador Sea and Davis Strait the largest quantities (more than 20 grams) were found. Farther still to the west gradually lowering values were found towards the Canadian coast.

The central waters with the highest standing crop showed the largest populations of pteropods (L. retroversa), chaetognaths (E. hamata), amphipods (P. gaudichaudi), euphausiids (T. longicaudata), ostracods (C. obtusata), tomopterids (Tomopteris sp.) and copepods (for the most part C. finmarchicus). Along the Greenland coast the largest numbers of several smaller forms occurred (young Cirripedia, copepod nauplii, holothurian larvae) along with a few large forms such as euphausiids other than T. longicaudata, the amphipod P. abyssorum and the copepod C. glacialis.

Several of the species appear to have real value as indicators of arctic and Atlantic waters in the Davis Strait and Labrador Sea regions. Included are the cold-water species Calanus glacialis, Limacina helicina, Parathemisto abyssorum, Pareuchaeta glacialis and others, and the warm-water species Calanus finmarchicus, Pareuchaeta norvegica, Limacina retroversa, Parathemisto gaudichaudi, Thysanoessa longicaudata, Tomopteris spp. and others. Further analysis of the Hensen material is required to elaborate on this.

A great amount of valuable information remains to be extracted from these plankton collections.



Stramin Net, Baffin, 1963

Species	No. per 30-min. tow at stations											
	27	32	BT 37	BT 38	BT 39	BT 41	BT 42	BT 43	BT 44	33	34	35
Sarsia tubulosa						1	2					
S. princeps												1
Bougainvillea superciliaris						1	14					
Halitholus cirratus				4	1	1	1				2	3
Aglantha digitale	1	765	66	10		7	23	291	35	90	51	43
Dimophyes arctica		14										
Beroe sp.		29							5			1
Tomopteris sp.		2		1								
Autolytus sp.												
Eukrohnia hamata		821	1	39					19	776		1
Sagitta maxima		34	3			1			4	15		
S. elegans												
Limacina retroversa		1751	162	41	10		79	1780	26	33		13
L. helicina												2
Clione limacina		3	5				8	3				
cephalopod mollusc		3										
Calanus hyperboreus, VI♀		58					1	10	1	72	1	2
V		322						20	2	528	5	20
IV		39							12	376	3	16
C. finmarchicus, VI♀		145		3			2	150	16	370	1	8
V		38							5		3	7
C. glacialis, VI♀				1			3	110	18	240	4	5
V				3		1	67	360	161	728	539	355
Eucalanus elongatus, VI♀		14		1								
Pareuchaeta norvegica, VI♀												
V				1								
IV		496		1				10	4			
P. glacialis, VI♀									2			
V												
IV									1			
Heterorhabdus norvegicus, VI♀		67		1								
Metridia longa, VI♀		174							1	8		
Pseudalibrotus nanseni				1								1
P. glacialis		1	14	1		1	1	7		1		
Anonyx nugax												
Onesimus plautus												
Gammarus wilkitzki		1	3					1				
Tiron acanthurus				1								
Halimedon megalops				1								
Apherusa glacialis										2		
Hyperia galba	1											
Parathemisto abyssorum				6			1		4			
P. gaudichaudi		153	25			3		101		2	2	
P. libellula	1					4	4	2		9	2	3
Thysanoessa longicaudata		80	1					21		31		1
T. raschi				1								
T. inermis				1							2	3

Stramin Net, Baffin, 1963 (cont.)

Species	No. per 30-min. tow at stations											
	36	37	38	39	40	BT 53	BT 54	BT 72	48	49	50	51
Sarsia tubulosa			1		3							
S. princeps												
Bougainvillea superciliaris			7	3	104		4	4		4	2	158
Halitholus cirratus			10	4	12		5			3	7	282
Aglantha digitale	275	32	135	59	23	4	1	93	18	1	8	16
Dimophyes arctica												
Beroe sp.	1		2		1				1	2		3
Tomopteris sp.												
Autolytus sp.						1						14
Eukrohnia hamata			6	54	2	2	3	1		5		
Sagitta maxima												
S. elegans			1	50				8	119	2	1	16
Limacina retroversa	972	1200	157	32	66	20	80	113	242			
L. helicina	1					1		8	145	6		
Clione limacina	8	21	3	2	2	3	1		2	1		
Cephalopod mollusc												
Calanus hyperboreus, VI♀				4		1		2	39	1		
V		6		60		15		126	420	40	1	4
IV			2	104		23		420	15	1		
C. finmarchicus, VI♀		23	1					48	14	8		
V												
C. glacialis, VI♀		4		8		1		36	180	64	2	7
V		130	4	888	2	33	1	1144	246	62	3	1
Eucalanus elongatus, VI♀												
Pareuchaeta norvegica, VI♀												1
V												
IV												2
P. glacialis, VI♀												1
V												
IV												
Heterorhabdus norvegicus, VI♀												
Metridia longa, VI♀									8	1		
Pseudalibrotus nanseni	1	4				1		1				
P. glacialis						1	2		1	1		1
Anonyx nugax												1
Onesimus plautus												3
Gammarus wilkitzki	1	2					1					
Tiron acanthurus												
Halimedon megalops												
Apherusa glacialis								4				1
Hyperia galba												
Parathemisto abyssorum	2		2	7		2						
P. gaudichaudi								1		1	1	
P. libellula	1	3	2	1	1		3	24	27	39		2
Thysanoessa longicaudata	2											
T. raschi	74							2	3			
T. inermis	8					1		5	1			

At station 51 the additional amphipods Atylus carinatus (1), Rhacotropis sp. (4), Ampelisca microcephala (1), Syrrhoe crenulata (3), Paradelisca cuspidata (2), Westwoodilla megalops (2) and Ischyrocerus anguipes (2) were taken.

Icelandic Net, Baffin, 1963

Species	No. per 30-min. tow at stations							
	3	5	7	9	12	14	16	18
Aglantha digitale	3		1	8	8	6	5	60
Tomopteris sp.	8					15	1	
Eukrohnia hamata	17	21	4	2	2	63		30
Sagitta maxima						2		
Limacina retroversa	34	54	73	26	2	12	167	6
L. helicina								
Clione limacina							1	
cephalopod mollusc			1				1	
Calanus hyperboreus, VI♀	29	22	8			4	3	1
V	10	11	24			42	42	
IV	40	20	20		2	20	42	70
C. finmarchicus, VI♀	2700	4710	4590	251	210	3480	2536	1001
V	290	260	860	17	26	600	341	320
C. glacialis, VI♀				9	8			
V				15	2			
Eucalanus elongatus, VI♀				1				
Pareuchaeta norvegica, VI♀							28	
V							9	
IV	120		10		1		40	60
Metridia longa, VI♀							160	10
Pseudalibrotus glacialis				2				
Gammarus wilkitzki				2				
Parathemisto abyssorum			22				2	1
P. gaudichaudi	450	90	55		3	106	15	22
P. libellula								
Thysanoessa longicaudata	362	162	131	2		64	152	163
T. inermis								

	22	25	27	30	31	BT 33	BT 34	32	BT 40	BT 55	BT 56
Aglantha digitale	1	1	13			2		7			
Tomopteris sp.				1				1			
Eukrohnia hamata		6	1					72	1		
Sagitta maxima											
Limacina retroversa	5		8	1		19	35	18	1	1	1
L. helicina											1
Clione limacina											
cephalopod mollusc											
Calanus hyperboreus, VI♀											
V								2			
IV	45				1			16			
Calanus finmarchicus, VI♀		2	850	21	27	165	909	119	3		182
V	225	6	80	5		66	165	34		10	22
Calanus glacialis, VI♀											
V	45	1	20								
Eucalanus elongatus, VI♀										11	58
Pareuchaeta norvegica, VI♀			5								
V			1								
IV			50								
Metridia longa, VI♀			60	1							
Pseudalibrotus glacialis											
Gammarus wilkitzki											
Parathemisto abyssorum	39										
P. gaudichaudi			79	5		3	9	5		1	
P. libellula											1
Thysanoessa longicaudata	3		56	3		1		3		1	3
T. raschi											
T. inermis			2								

Hensen Net, Baffin, 1963
No. of individuals per m^2 at stations

Species	2	3	4	6	7	8	9	10	31	BT 55	47
Aglantha digitale	10		32	2	20	27		10			2
Bougainvillea sp.										2	
Beroe sp.	2										
Tomopteris sp.	15	22	10	209			32				
Polynoid larvae									98	142	
Spionid larvae										2	19
other polychaetes							2				
Eukrohnia hamata	72	25	76	2	49	81	15				
Sagitta maxima			10	2	2	27					
unident. chaetognaths						325					
Limacina retroversa	76		27	153	140	135	52	113		5	
L. helicina	2				83						
Clione limacina						2					
Conchoecia obtusata	66	50	974	3059	478	974	27	42			
C. elegans			81								
Cirripedia nauplii						81	204	849	294	280	
Cypris larvae		2							392	1120	
Calanus hyperboreus											
VI♂				2							
VI♀	2		5	2		89					
V	52		22			20	2				
IV		5	81	162			17				
III	42	2			81		2			700	59
II	84			162		2		84			130
I											
Calanus finmarchicus											
VI♂	84	2			81	82		41			
VI♀	1756	62	817	1786	3237	8120	135	1385			52
V	42	25		649	1137	487	22	43			
IV	971	60		4221	9082	243	7	84		701	
III	1349	295	325	17860	27682	1218		849		7151	
II	1506	443	1542	16398	10635	1147		1004	492	20332	
I	962	455	487		568	731		1255	3332	45712	
Calanus glacialis											
VI♀								42			10
V							30	42			2
IV							12	84			5
III								168			10
II								209			30
I								125			81
Pareuchaeta norvegica											
VI♀			66	10							
V			44	2							
IV				325	162	406	2				
III		2	42			243					
II						246					
P. glacialis IV											2
Pseudocalanus											
minutus VI♀			84	162		406	24	25			
V								84			
IV								309			
III								376			19
II											79
I							22				
Microcalanus											
pygmaeus VI♀								41			39
V											
IV							31				

Hensen Net, Baffin, 1963 (cont.)

no. of individuals per m^2 at stations

Species		2	3	4	6	7	8	9	10	31	BT 55	47
Scolecithricella minor	VI♂			42			244					
	VI♀			209			325					
	V						165					
	IV			249								
S. ovata	VI♀			81								
Metridia longa	VI♀			43			81					
Acartia longiremus	VI♀											12
Oithona similis	VI♀		37	325				111				59
	V		12					89				39
O. atlantica	VI♀			81								
Oncaea borealis	VI♀			80								
other cyclopoids							2517	254	84			
harpacticoids							80	30				2
copepod nauplii		376		81	162		161	522	1046	686	1542	472
Apherusa glacialis									2			
Lanceola clausi				2								
Parathemisto gaudichaudi		12		20	64	157	37				2	
P. abyssorum		12					12	7			5	2
unident. hyperiids							2				7	
Thysanoessa longicaudata	adult	11		5	37	32	59					
	furcilia 3		2									
	2		12									
	1	2	10	81	164							
	calyptopis 3	7	30		162							
	2	209	25	162	160							
	1	209	12	1055	649							
T. inermis	adult								2			
Thysanopoda acutifrons	furcilia 1						2					
	calyptopis 3			5								
	2			2								
unident. euphausiids	furcilia 1										140	
	calyptopis 3										982	
	2						81		42	98	4207	
	1						2048			1470	4767	19
	metanauplii									392	701	20
	nauplius 2		12						418	196	140	39
	1							465	1255	195		79
	eggs							30				1063
Spirontocaris sp.								2				5
Pandalus sp.												2
Galatheidae							2	5				
Paguridae								2				
Brachyura								2		5		
holothurian larvae										1960	701	
pluteus larvae								30		490	280	19
Oikopleura sp.			248	249	1461		182	387	979	7938	3506	
Fritillaria sp.								282	89	4900		
unident. eggs				487			162			196		