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reference to the Laboratory.

R1/7

8
6MR66

CRUISE REPORT

F.R.V. "MARA"

13th June-1st July 1966

Narrative

"Mara" sailed from Buckie on 13th June and proceeded to Loch Ness, where she was engaged in trials, on 14th June, of an acoustic device developed by Birmingham University. The personnel for the main part of the cruise joined "Mara" at Fort William on 15th June. Work continued in the South Minch, Loch Linnhe and Colonsay areas until 29th June, after which "Mara" returned to Buckie and unloaded on 1st July.

Results

Hauls of 30 minutes duration were taken with a Danish shrimp trawl. The best haul of pandalids was taken in 55 fathoms, 5 miles ENE of the north end of Colonsay, where 643 mixed Pandalus montagui and P. bonnierii were taken. Fair concentrations were also found 8 miles E of Eriskay, where the catch from 76 fathoms numbered 165. Haddock, whiting and small gadoids were present in these hauls.

Trial hauls were made using the net fishing off the bottom. Extra floats were added, and the headline depth was measured using a Furuno depth telemeter. The net rose off the bottom when the warps were shortened, but no shrimps were caught.

Nephrops were taken in the same positions as the pandalids, and also in Loch Linnhe (where very few shrimps were caught). 1802 specimens were sexed and measured. The mean carapace length for males was 39.56 mm in Loch Linnhe, compared with 31.44 mm for the other areas.

Plankton hauls were taken in areas XX13c, XX12a and YY11c.

J. Drinkwater
15th September, 1966.

HAUL No. M66/1 DATE 16/6/66 AREA XX11A ~~XXXX~~/SMALL MESH
 DURATION OF HAUL 55 min No. of SHEETS 2

<u>Whiting</u>			<u>Whiting (continued)</u>			<u>T. (g.) smarki</u>		
<u>M66</u>			<u>M66</u>			<u>M66</u>		
0			40	1		0		
1			1 :	2		1		
2			2			2		
3			3			3		
4			4			4		
5			5			5		
6			6			6		
7			7			7		
8			8			8		
9			9			9		
10			0			10		
1			1			1		
2			2			2		
3			3			3 :		2
4			4			4 H:		12
5			5			5 H:		11
6	1		6			6 HH		20
7 :	2		7			7 :		9
8	1		8			8 H:		11
9 :	2		9			9 :		4
20 :	6		0			20 :		2
1	1		1			1 :		3
2	5		2			2		
3 :	2		3			3		
4	5		4			4		
5 :	2		5			5		
6 :	3		6			6		
7	1		7			7		
8 :	4		8			8		
9			9			9		
30 :	2		0			0		
1 :	2		1			1		
2	1		2			2		
3 :	4		3			3		
4			4			4		
5 :	2		5			5		
6	1		6			6		
7			7			7		
8			8			8		
9			9			9		
	47	→		3			74	
COUNT			COUNT			COUNT		
RANGE			RANGE			RANGE		
FRACTION SAMPLED	ALL		FRACTION SAMPLED			FRACTION SAMPLED	ALL	

HAUL No. 1/SMALL MESH. 2

4 bearded rockling

0		6		6		6
1		7		7		7
2		8		8		8
3		9		9		9
4		0		0		0
5		1		1		1
6		2		2		2
7		3		3		3
8		4		4		4
9		5		5		5
10	1	6		6		6
1	1	7		7		7
2	3	8		8		8
3	5	9		9		9
4	3	0		0		0
5		1		1		1
6		2		2		2
7		3		3		3
8		4		4		4
9	2	5		5		5
20	1					

COUNT

RANGE

FRACTION SAMPLED

SPECIES

5	<i>Scyllium canic.</i>	Neas	♂ $\frac{1}{65}$	♀ $\frac{1}{64}$ $\frac{1}{89}$	3
6	Angler	"	$\frac{1}{43}$		1
7	<i>L. minutus</i>	"	$\frac{1}{9}$ $\frac{3}{11}$ $\frac{1}{12}$ $\frac{1}{19}$		6
8	<i>M. pontassou</i>	"	$\frac{1}{23}$		1
9	L.R. dab	"	$\frac{1}{17}$		1
0	Witch	"	$\frac{1}{19}$ $\frac{1}{33}$ $\frac{1}{37}$		3
1	Sprat	"	$\frac{1}{7}$ $\frac{8}{8}$ $\frac{1}{9}$ $\frac{1}{13}$		11

(19)

COUNT

RANGE

FRACTION SAMPLED All

HAUL No. M 66/1 DATE 16/6/66 AREA XX11d XXXX/SMALL MESH

DURATION OF HAUL 55 mins No. of SHEETS 2

9

Soft

♀ ♂

[illegible]

COUNT

RANGE

FRACTION SAMPLED *A44*

HAUL No. 1~~SMALL~~/SMALL MESH 2*Crangon allmani**Wae*

0	6	6	6
1	7	7	7
2	8	1	8
3	9	10	9
4	10	19	0
5	1	5	1
6	2	6	2
7	3		3
8	4		4
9	5		5
0	6		6
1	7		7
2	8		8
3	9		9
4	0		0
5	1		1
6	2		2
7	3		3
8	4		4
9	5		5

(40)

COUNT

RANGE

FRACTION SAMPLED *ALL*

SPECIES

6	<i>Calocaris</i>	1	1
7	<i>Pandalus</i>	237	(237)

COUNT

RANGE

FRACTION SAMPLED

HAUL No. M66/2 DATE 17/6/66 AREA 44/20 LARGE/SMALL MESH

DURATION OF HAUL 2 hrs No. of SHEETS 2

Rephaga

♀

344

0		0		0	
1		1		1	
2		2		2	
3		3		3	
4		4		4	
5		5		5	
6		6		6	
7		7		7	
8		8		8	
9		9		9	
10		10		10	
1		1		1	
2		2		2	
3		3		3	
4		4		4	
5		5		5	
6		6		6	
7		7		7	
8		8		8	
9		9		9	
20		20		20	
1		1		1	
2		2		2	
3		3		3	
4		4		4	
5	1	5		5	
6	1	6		6	
7		7		7	
8		8		8	
9		9		9	
30	2	30		30	
1		1		1	
2		2		2	
3		3		3	
4		4		4	
5		5		5	
6		6		6	
7		7		7	
8		8		8	
9		9		9	
40	1	40		40	
1		1		1	
2		2		2	
3	1	3		3	
4	1	4		4	
5		5		5	
6		6		6	
7		7		7	
8		8		8	
9		9		9	

$\frac{1}{42}$

(9)

8 + 100ft

(6)

4 + 20ft

COUNT
RANGE
FRACTION SAMPLED

ALL

COUNT
RANGE
FRACTION SAMPLED

COUNT
RANGE
FRACTION SAMPLED

1 2

HAUL No. 2~~1~~ E/SMALL MESH 2

0	6	6	6
1	7	7	7
2	8	8	8
3	9	9	9
4	0	0	0
5	1	1	1
6	2	2	2
7	3	3	3
8	4	4	4
9	5	5	5
0	6	6	6
1	7	7	7
2	8	8	8
3	9	9	9
4	0	0	0
5	1	1	1
6	2	2	2
7	3	3	3
8	4	4	4
9	5	5	5

COUNT

RANGE

FRACTION SAMPLED

SPECIES

5	Munida	2 3	2
6	Calocaris	1	1
7	Pteripha	4	4
8	Crangon al.	1/11	1
9	Pandalus	13	13

COUNT

RANGE

FRACTION SAMPLED

HAUL No. M66/2 DATE 17/6/66 AREA XY12C ~~EAGE~~/SMALL MESH

DURATION OF HAUL 2hr No. of SHEETS 2

Haddock										Whiting									
Mass										Mass									
0										0								0	
1										1								1	
2										2								2	
3										3								3	
4										4								4	
5										5								5	
6										6								6	
7										7								7	
8	1									8								8	
9										9								9	
0										10								0	
1										1								1	
2										2								2	
3										3								3	
4										4								4	
5										5								5	
6										6								6	
7										7								7	
8										8	1							8	
9										9								9	
0										20	1							0	
1										1								1	
2										2								2	
3										3								3	
4										4								4	
5										5								5	
6										6								6	
7										7								7	
8										8								8	
9										9								9	
0										0								0	
1										1								1	
2										2								2	
3										3								3	
4										4								4	
5										5								5	
6										6								6	
7										7								7	
8										8								8	
9										9								9	

①
COUNT
RANGE
FRACTION SAMPLED ALL

②
COUNT
RANGE
FRACTION SAMPLED ALL

COUNT
RANGE
FRACTION SAMPLED

INITIALS.....

HAUL No. 2GE/SMALL MESH. 2J. minutes
Wus

0	6	6	6
1	7	7	7
2	8	8	8
3	9	9	9
4	0	10	0
5	1	1	1
6	2	2	2
7	3	3	3
8	4	4	4
9	5	5	5
0	6	6	6
1	7	7	7
2	8	8	8
3	9	9	9
4	0	0	0
5	1	1	1
6	2	2	2
7	3	3	3
8	4	4	4
9	5	5	5

36

1	COUNT	—
2	RANGE	—
3	FRACTION SAMPLED	ALL
4	SPECIES	
5	Thornback	$\sigma^1 \frac{1}{56} \frac{1}{13}$ 2
6	Seyllium conic.	$\sigma \frac{1}{62} \frac{1}{63} \frac{2}{65}$ 4
7	Davis Sole	$\frac{1}{10} \frac{1}{38}$ 2
8	Cod	$\frac{1}{35} \frac{1}{6}$ 2
9	G. esomoki	$\frac{1}{13} \frac{1}{12}$ 2
0	Sprat	$\frac{1}{11} \frac{1}{9}$ 2

COUNT

RANGE

FRACTION SAMPLED

HAUL No. M66/3 DATE 17/6/66 AREA 4412c ~~LARGE~~/SMALL MESH

DURATION OF HAUL 2hrs 35 mins No. of SHEETS 2

Meas Haddock

Meas Whiting

0	
1	
2	
3	
4	
5	
6	1
7	5
8	4
9	3
10	3
1	4
2	2
3	
4	
5	
6	
7	
8	
9	
10	
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4	
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22

COUNT /
 RANGE /
 FRACTION SAMPLED ALL

0	
1	
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16

COUNT /
 RANGE /
 FRACTION SAMPLED ALL

0	
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9	

COUNT /
 RANGE /
 FRACTION SAMPLED /

INITIALS

HAUL No. 3

SE/SMALL MESH 2

T. esmarki
MoasSprat
MoasHerring
Moas

0	6	6	1	6
1	7	7	HH	22
2	8	8	HI	19
3	9	9	HI	16
4	10	10	H	10
5	1	1	:	3
6	2	2	H	12
7	3	3	HHH	28
8	4	4	HHHH	43
9	5	5	HHHH	43
0	6	6	:	8
1	7	7	:	4
2	8	8	:	1
3	9	9	:	1
4	0	0	:	3
5	1	1	:	20
6	2	2	:	1
7	3	3	:	2
8	4	4	:	3
9	5	5	:	3
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4				
5				

M66/3 HAUL No. DATE 17/6/61 AREA 4412c ~~1000~~GE/SMALL MESH

DURATION OF HAUL 2 hrs 35 mins No. of SHEETS 2

Neptopis ♂ ♀

10		10		10	
1		1		1	
2		2		2	
3		3		3	
4		4		4	
5		5		5	
6		6		6	
7		7		7	
8		8		8	
9		9		9	
20		20		20	
1		1		1	
2		2		2	
3		3		3	
4		4		4	
5		5		5	
6		6		6	
7		7		7	
8		8		8	
9		9		9	
30		30		30	
1		1		1	
2		2	1	2	
3		3		3	
4		4		4	
5	1	5	2	5	
6		6		6	
7		7	1	7	
8		8		8	
9	1	9	1	9	
40		40		40	
1		1		1	
2		2		2	
3	1	3		3	
4	1	4		4	
5		5		5	
6	1	6		6	
7		7		7	
8	1	8		8	
9		9		9	
50	1				

COUNT

RANGE

FRACTION SAMPLED

ALL

COUNT

RANGE

FRACTION SAMPLED

ALL

COUNT

RANGE

FRACTION SAMPLED

INITIALS

HAUL No. 3~~LARGE~~/SMALL MESH. 2

0	6	6	6
1	7	7	7
2	8	8	8
3	9	9	9
4	0	0	0
5	1	1	1
6	2	2	2
7	3	3	3
8	4	4	4
9	5	5	5
0	6	6	6
1	7	7	7
2	8	8	8
3	9	9	9
4	0	0	0
5	1	1	1
6	2	2	2
7	3	3	3
8	4	4	4
9	5	5	5
0			

COUNT

RANGE

FRACTION SAMPLED

SPECIES

Phasipha

Count 10

10

Many jelly fish.

COUNT

RANGE

FRACTION SAMPLED

HAUL No. MUG/6 DATE 20/6/66 AREA XX12a ~~XXXX~~ SMALL MESH
DURATION OF HAUL 1/2 hr No. of SHEETS 2

NEPHROPS

10	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9
20	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9
30	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9
40	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9
50	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

COUNT
RANGE
FRACTION SAMPLED

COUNT
RANGE
FRACTION SAMPLED

COUNT
RANGE
FRACTION SAMPLED

HAUL No. 6LARGE/SMALL MESH 2

0	6	6	6
1	7	7	7
2	8	8	8
3	9	9	9
4	0	0	0
5	1	1	1
6	2	2	2
7	3	3	3
8	4	4	4
9	5	5	5
0	6	6	6
1	7	7	7
2	8	8	8
3	9	9	9
4	0	0	0
5	1	1	1
6	2	2	2
7	3	3	3
8	4	4	4
9	5	5	5

COUNT

RANGE

FRACTION SAMPLED

SPECIES

COUNT

RANGE

FRACTION SAMPLED

HAUL No. M66/L DATE 20/6/66 AREA XX12a ~~LARGE~~/SMALL MESH
DURATION OF HAUL 1/2 hr No. of SHEETS 2

0
1
2
3
4
5
6
7
8
9
0
1
2
3
4
5
6
7
8
9
0
1
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2
3
4
5
6
7
8
9
0
1
2
3
4
5
6
7
8
9

0
1
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4
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7
8
9
0
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3
4
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9
0
1
2
3
4
5
6
7
8
9
0
1
2
3
4
5
6
7
8
9

COUNT

RANGE

FRACTION SAMPLED

COUNT

RANGE

FRACTION SAMPLED

COUNT

RANGE

FRACTION SAMPLED

HAUL No. 6

~~SIZE~~/SMALL MESH 2

0	6	6	6
1	7	7	7
2	8	8	8
3	9	9	9
4	0	0	0
5	1	1	1
6	2	2	2
7	3	3	3
8	4	4	4
9	5	5	5
0	6	6	6
1	7	7	7
2	8	8	8
3	9	9	9
4	0	0	0
5	1	1	1
6	2	2	2
7	3	3	3
8	4	4	4
9	5	5	5

COUNT

RANGE

FRACTION SAMPLED

SPECIES

5	Pristionus	Mass	♀ 1/23 1/18	2
6	4 Bearded looby	"	1/15	1
7	Witch	"	1/14	1
8	3 Bearded looby	"	1/16	1
9	Lump snail	"	1/3	1

COUNT

RANGE

FRACTION SAMPLED

HAUL No. M667 DATE 20/6/66 AREA WW13d ~~LARGE~~/SMALL MESH
 DURATION OF HAUL 1 1/2 hr No. of SHEETS 1

0
1
2
3
4
5
6
7
8
9
0
1
2
3
4
5
6
7
8
9
0
1
2
3
4
5
6
7
8
9
0
1
2
3
4
5
6
7
8
9
0
1
2
3
4
5
6
7
8
9

0
1
2
3
4
5
6
7
8
9
0
1
2
3
4
5
6
7
8
9
0
1
2
3
4
5
6
7
8
9
0
1
2
3
4
5
6
7
8
9
0
1
2
3
4
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6
7
8
9

0
1
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4
5
6
7
8
9
0
1
2
3
4
5
6
7
8
9
0
1
2
3
4
5
6
7
8
9
0
1
2
3
4
5
6
7
8
9
0
1
2
3
4
5
6
7
8
9

COUNT
RANGE
FRACTION SAMPLED

COUNT
RANGE
FRACTION SAMPLED

COUNT
RANGE
FRACTION SAMPLED

HAUL No. 7

SMALL MESH 1

0	6	6	6
1	7	7	7
2	8	8	8
3	9	9	9
4	0	0	0
5	1	1	1
6	2	2	2
7	3	3	3
8	4	4	4
9	5	5	5
0	6	6	6
1	7	7	7
2	8	8	8
3	9	9	9
4	0	0	0
5	1	1	1
6	2	2	2
7	3	3	3
8	4	4	4
9	5	5	5

COUNT

RANGE

FRACTION SAMPLED

SPECIES

5	<i>T. esmarkii</i>	Meas	1/10	1/17	2
6	<i>T. minutus</i>	"	1/16		1
7	<i>M. pantodon</i>	"	1/24		1
8	<i>Phaeophae</i>	Count	14		14

COUNT

RANGE

FRACTION SAMPLED

HAUL No. M/1/8 DATE 20/6/66 AREA WW13d ~~W~~ SE/SMALL MESH
 DURATION OF HAUL 1 1/2 hr No. of SHEETS 3

<u>Haddock</u>			<u>Whiting</u>		
<u>Meas</u>		<u>Meas</u>	<u>Meas</u>		
0		40	10		
1		1	1		
2		2	2		
3		3	3		
4		4	4		
5		5	5		
6		6	6		
7		7	7		
8		8	8		
9		9	9		
10		50	20		
1		1	1	1	
2		2	2	1	
3		3	3		
4		4	4	1	
5		5	5	4	
6		6	6	1	
7		7	7		
8	1	8	8		
9		9	9	2	
20	1	60	30		
1	1	1	1	1	
2	1	2	2		
3	1	3	3	1	
4	2	4	4		
5		5	5	2	
6		6	6		
7		7	7		
8	1	8	8		
9		9	9		
30		70	40	2	
1	1	1	1	2	
2	1	2	2		
3	1	3	3		
4		4	4	1	
5	3	5	5		
6	3	6	6		
7	1	7	7		
8	8	8	8		
9	8	9	9		
34		27	19		

COUNT

RANGE

FRACTION SAMPLED

ALL

COUNT

RANGE

FRACTION SAMPLED

COUNT

RANGE

FRACTION SAMPLED

ALL

HAUL No. 8

LARGE/SMALL MESH.....3

Hake		T. minckleyi		M. pontassou		T. (G.) macki	
Rows		Rows		Rows		Rows	
20	1/16	6		6		6	
1		7		7		7	
2		8		8	1	8	
3		9		9		9	:
4		10		20	5	10	:
5		1		1	:	1	:
6	1	2	1	2	:	2	:
7		3		3	:	3	HH:
8		4	1	4	:	4	HHI:
9		5	6	5	:	5	H:
30		6	7	6	:	6	I
1	1	7	5	7	:	7	HHI
2		8	14	8	:	8	HHI:
3		9	10	9	:	9	HHI:
4	1	20	8	30	H	20	HHI:
5	1	1	2	1	:	1	:
6	1	2	1	2	:	2	
7	1	3		3	:	3	
8	1	4		4	:	4	
9	2	5		5	:	5	
10	2						

527

55

58

159

COUNT

RANGE

FRACTION SAMPLED *A11*

SPECIES

Pristurus	Meas	♀ $\frac{1}{21} \frac{1}{24} \frac{1}{26}$	♂ $\frac{1}{25} \frac{1}{29} \frac{1}{33}$	
S. coniculum	"	♀ $\frac{1}{17}$		1
Thornback Ray	"	♀ $\frac{1}{38}$	♂ $\frac{1}{17}$	2
Cod	"	$\frac{1}{37}$		1
Herring	"	$\frac{1}{28}$		1
Callionymus	"	$\frac{3}{13}$	$\frac{1}{15} \frac{1}{16} \frac{1}{18}$	6
Grounded	"	$\frac{1}{17}$		1

COUNT

RANGE

FRACTION SAMPLED ^{ALL}

2ND FISH SHEET
HAUL No. 8 DATE 20/6/66 AREA WW13d ~~LARGE~~/SMALL MESH
DURATION OF HAUL 1 1/2 hr No. of SHEETS 3

0
1
2
3
4
5
6
7
8
9
0
1
2
3
4
5
6
7
8
9
0
1
2
3
4
5
6
7
8
9
0
1
2
3
4
5
6
7
8
9
0
1
2
3
4
5
6
7
8
9

0
1
2
3
4
5
6
7
8
9
0
1
2
3
4
5
6
7
8
9
0
1
2
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6
7
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9
0
1
2
3
4
5
6
7
8
9
0
1
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3
4
5
6
7
8
9

0
1
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3
4
5
6
7
8
9
0
1
2
3
4
5
6
7
8
9
0
1
2
3
4
5
6
7
8
9
0
1
2
3
4
5
6
7
8
9
0
1
2
3
4
5
6
7
8
9

COUNT
RANGE
FRACTION SAMPLED

COUNT
RANGE
FRACTION SAMPLED

COUNT
RANGE
FRACTION SAMPLED

1-5/SMALL MESH.....3

4 B. Rocking

News

16	:	3
7		
8		
9		
20		
1		1
2		1
3		
4		
5		
6		

6		
7		
8		
9		
0		
1		
2		
3		
4		
5		11

 $\frac{1}{26} \frac{1}{27} \frac{1}{30} \frac{1}{34} \frac{1}{39} \frac{1}{42}$

FRACTION SAMPLED ALL

HAUL NO. M66/8 DATE 20/6/66 AREA WW13d ~~WIDE~~/SMALL MESH
 DURATION OF HAUL 1 1/2 hr No. of SHEETS 3

NEPHROPS

♂

♀

Soft

10

50

10

1

1

1

2

2

2

2

3

3

1

3

4

4

4

5

5

5

6

6

6

7

7

1

7

8

8

8

9

9

9

20

60

20

1

1

1

2

2

2

3

3

3

4

4

4

5

5

5

6

6

6

7

7

7

8

8

8

9

9

9

30

30

30

1

1

1

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2

2

3

3

3

4

4

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5

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5

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6

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40

40

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5

5

5

6

6

6

7

7

7

8

8

8

9

9

9

11 + ->

4

3 + 1 soft

COUNT

COUNT

COUNT

RANGE

RANGE

RANGE

FRACTION SAMPLED

FRACTION SAMPLED

FRACTION SAMPLED

ALL

HAUL No. 8LARGE/SMALL MESH. 3

0	6	6	6
1	7	7	7
2	8	8	8
3	9	9	9
4	0	0	0
5	1	1	1
6	2	2	2
7	3	3	3
8	4	4	4
9	5	5	5
0	6	6	6
1	7	7	7
2	8	8	8
3	9	9	9
4	0	0	0
5	1	1	1
6	2	2	2
7	3	3	3
8	4	4	4
9	5	5	5

COUNT

RANGE

FRACTION SAMPLED

SPECIES

Eupogonius + *Adamsia**Rossia**Holothurians**Telca**Inachus**Antedon**Salps**Unknown (preserved)*

28

6

6

1

5

8

several

3

COUNT

RANGE

FRACTION SAMPLED

HAUL No. M66/9 DATE 20-6-66 AREA WW13d ~~WIDE~~/SMALL MESH

DURATION OF HAUL..... No. of SHEETS 2

0
1
2
3
4
5
6
7
8
9
0
1
2
3
4
5
6
7
8
9
0
1
2
3
4
5
6
7
8
9
0
1
2
3
4
5
6
7
8
9

0
1
2
3
4
5
6
7
8
9
0
1
2
3
4
5
6
7
8
9
0
1
2
3
4
5
6
7
8
9
0
1
2
3
4
5
6
7
8
9

0
1
2
3
4
5
6
7
8
9
0
1
2
3
4
5
6
7
8
9
0
1
2
3
4
5
6
7
8
9
0
1
2
3
4
5
6
7
8
9

COUNT

RANGE

FRACTION SAMPLED

COUNT

RANGE

FRACTION SAMPLED

COUNT

RANGE

FRACTION SAMPLED

HAUL No. 9~~LARGE~~/SMALL MESH 2

0	6	6	6
1	7	7	7
2	8	8	8
3	9	9	9
4	0	0	0
5	1	1	1
6	2	2	2
7	3	3	3
8	4	4	4
9	5	5	5
0	6	6	6
1	7	7	7
2	8	8	8
3	9	9	9
4	0	0	0
5	1	1	1
6	2	2	2
7	3	3	3
8	4	4	4
9	5	5	5

COUNT

RANGE

FRACTION SAMPLED

SPECIES

Forkhead

Mars

 $\frac{1}{45}$

1

L. R. Dab

"

 $\frac{1}{10}$

1

H. B. Rockling

"

 $\frac{1}{16}$ $\frac{1}{23}$

2

M. Fontasson

"

 $\frac{1}{27}$

1

T. esmarkii

"

 $\frac{1}{12}$ $\frac{1}{13}$ $\frac{1}{14}$ $\frac{1}{17}$

5

T. minutus

"

 $\frac{1}{16}$ $\frac{1}{21}$

2

COUNT

RANGE

FRACTION SAMPLED

HAUL No. 9

~~COARSE~~/SMALL MESH 2

0	6	6	6
1	7	7	7
2	8	8	8
3	9	9	9
4	0	0	0
5	1	1	1
6	2	2	2
7	3	3	3
8	4	4	4
9	5	5	5
0	6	6	6
1	7	7	7
2	8	8	8
3	9	9	9
4	0	0	0
5	1	1	1
6	2	2	2
7	3	3	3
8	4	4	4
9	5	5	5

1	COUNT
2	RANGE
3	FRACTION SAMPLED
4	SPECIES

5 *A. rubens* Count 1

COUNT

RANGE

FRACTION SAMPLED

HAUL No. M66/10 DATE 23/6/66 AREA XX11d 1GE/SMALL MESH

DURATION OF HAUL 1/2 hr No. of SHEETS 2

Whiting
Meas

T. esmarki
Meas

10		0
1		1
2		2
3		3
4		4
5		5
6		6
7	1	7
8	2	8
9	6	9
20	11	0
1	7	1
2	11	2
3	14	3
4	14	4
5	11	5
6	9	6
7	16	7
8	8	8
9	12	9
30	13	0
1	11	1
2	14	2
3	12	3
4	10	4
5	13	5
6	5	6
7	12	7
8	4	8
9	7	9
40	4	0
1	1	1
2		2
3		3
4		4
5		5
6		6
7	1	7
8		8
9		9

229

COUNT

RANGE

FRACTION SAMPLED

ALL

10		0
1		1
2		2
3		3
4		4
5		5
6		6
7		7
8		8
9		9
20		0
1		1
2		2
3		3
4		4
5		5
6		6
7		7
8		8
9		9
30		0
1		1
2		2
3		3
4		4
5		5
6		6
7		7
8		8
9		9
40		0
1		1
2		2
3		3
4		4
5		5
6		6
7		7
8		8
9		9

COUNT

RANGE

FRACTION SAMPLED

10		
1		1
2		1
3	HI	18
4	HHHHHH	60
5	HHHHHHH	65
6	HHHH	40
7	HH	26
8	HI	18
9		5
20		7
1		2
2		
3		
4		
5		
6		
7		
8		
9		
30		
1		
2		
3		
4		
5		
6		
7		
8		
9		
40		
1		
2		
3		
4		
5		
6		
7		
8		
9		

243

COUNT

RANGE

FRACTION SAMPLED

ALL

HAUL No. 10

LARGE/SMALL MESH 2

Witches Mass	L.R. Dals Mass	4 bearded with the Rockling Mass	g. minutus Mass
10	6	6	6
1	7	7	7
2	8	8	8
3	9	9	9
4	10	10	10
5 ' 1	1 : 2	1 : 1	1 : 5
6	2 : 4	2 : 5	2
7	3 : 3	3 HI 15	3 : 3
8	4 : 5	4 HH 21	4 : 2
9	5 : 1	5 : 4	5 : 1
20	6 : 3	6	6 : 1
1	7 : 4	7	7
2	8 : 1	8 : 6	8 : 3
3	9 : 1	9 : 5	9
4	20 : 2	20 : 3	20
5	1	1 : 1	1 : 1
6	2	2 : 3	2
7	3	3 : 4	3
8	4	4	4
9	5	5	5
30	26	31 69	16
1 : 2	COUNT /	/	/
2	RANGE /	/	/
3 ' 1	FRACTION SAMPLED All	All	All
4	SPECIES		
5	Hake	1/47	1
6	Mackrel	1/33	1
7	Herring	1/25	1
8	Conger	1/32	1
9	Seyll. can	1/64	1
40	Cod	2/6 1/20 1/21	4
1			
2			
3			
4			
5			
6			
7			
8			
9			
5			

COUNT /
 RANGE /
 FRACTION SAMPLED All

HAUL No. M66/10 DATE 23/6/66 AREA XX11d ~~LARGE~~/SMALL MESH

DURATION OF HAUL 12hr

No. of SHEETS 2

♂ NEPHROPS ♀

Amph
Benied

♂ *544* ♀

10		10		10	
1		1		1	
2		2		2	
3		3	1	3	
4	2	4	3	4	
5	3	5	7	5	
6	2	6	4	6	
7	1	7	12	7	
8	5	8	11	8	
9	18	9	13	9	1
20	20	20	22	20	1
1	17	1	23	1	1
2	13	2	11	2	1
3	8	3	25	3	3
4	9	4	36	4	11
5	13	5	38	5	17
6	16	6	43	6	19
7	18	7	39	7	27
8	22	8	34	8	10
29	24	9	12	9	10
30	23	30	10	30	5
1	21	1	4	1	1
2	20	2	6	2	2
3	25	3		3	5
4	16	4	5	4	2
5	14	5		5	2
6	14	6	1	6	
7	14	7	1	7	
8	10	8		8	
9	6	9		9	1
40	10	40		40	
1	12	1		1	
2	10	2	361	2	
3	10	3	+ 22 larvae	3	
4	8	4	+ 118 soft	4	
5	4	5		5	
6	3	6		6	
7	3	7		7	
8	4	8		8	
9	8	9		9	

447

+ 9 soft

456

$\frac{6}{50}$ $\frac{2}{51}$ $\frac{2}{52}$ $\frac{2}{53}$ $\frac{3}{55}$

361

22

9

118

COUNT $\frac{1}{56}$ $\frac{2}{57}$ $\frac{2}{58}$ $\frac{1}{59}$

RANGE

FRACTION SAMPLED

Acc

COUNT

RANGE

FRACTION SAMPLED

COUNT

RANGE

FRACTION SAMPLED

HAUL No. 10

LARGE/SMALL MESH. 2

0	6	6	6
1	7	7	7
2	8	8	8
3	9	9	9
4	0	0	0
5	1	1	1
6	2	2	2
7	3	3	3
8	4	4	4
9	5	5	5
0	6	6	6
1	7	7	7
2	8	8	8
3	9	9	9
4	0	0	0
5	1	1	1
6	2	2	2
7	3	3	3
8	4	4	4
9	5	5	5

COUNT

RANGE

FRACTION SAMPLED

SPECIES

Cancer pag.

♀ 1/52 HSM. ER. DMSH.

Pandalus

643

643

Crangon al.

76

76

Pharaphes

2

2

Loligo

1/14

1

COUNT

RANGE

FRACTION SAMPLED

HAUL No. M66/11 DATE 28/6/66 AREA 7412c ~~LARGE~~/SMALL MESH

DURATION OF HAUL 1 1/2 hr No. of SHEETS 2

Haddock

Whiting

10

1

2

3

4

5

6

7

8

9

20

1

2

3

4

5

6

7

8

9

0

1

2

3

4

5

6

7

8

9

0

1

2

3

4

5

6

7

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9

0

1

2

3

4

5

6

7

8

9

0

1

2

3

4

5

6

7

8

9

COUNT

RANGE

FRACTION SAMPLED

ALL

COUNT

RANGE

FRACTION SAMPLED

ALL

COUNT

RANGE

FRACTION SAMPLED

HAUL No. 11

SMALL MESH. 2

Herring

Sprat

T. esmarki

0	6		6		6
1	7		7	4	7
2	8		8	HH	8
3	9		9	HHH	9
4	10	1	10	HHHHH	10
5	1	H	1	H	1
6	2	HHH	2		2
7	3	HHHHH	3		3
8	4	HHHHH	4		4
9	5	H	5		5
0	6		6		6
1	7		7		7
2	8		8		8
3	9		9		9
4	20		20		20
5	1		1		1
6	2		2		2
7	3		3		3
8	4		4		4
9	5		5		5

149

101

80

COUNT

RANGE

FRACTION SAMPLED

SPECIES

5	S. coniculum	Meas	1/67 1/63	2
6	Hake	-	1/20	1
7	Mackerel	-	1/40	1
8	Argentine	-	6/13	6
9	Gobius	-	3/9	2
0	Callionymus	-	1/12	1
1	Cod	-	1/6	1
2	L.R. Lab	-	2/11 1/13	3

Tot. 1/2 basket mixed herring + sprat count 196
 of which above were measured range as above
 1/2

COUNT

RANGE

FRACTION SAMPLED

HAUL No. M66/11 DATE 28/6/66 AREA 4412c LARGE/SMALL MESH

DURATION OF HAUL 1/2 hour No. of SHEETS 2

♂			NEPHROPS			♀			Berned		
Soft						Soft					
10			10			10					
1			1			1					
2			2			2					
3			3			3					
4			4			4					
5			5			5					
6			6			6					
7			7			7					
8			8			8					
9			9			9					
20			20			20					
1			1			1					
2			2			2					
3			3			3					
4			4			4					
5			5		1	5					
6			6		1	6					
7	1		7		1	7					
8			8		3	8					
9	2		9		6	9					
30		1	30		11	30		1			
1	1		1	HH	13	1		1			
2	2		2	HH	20	2		3		1	
3	1		3	HH	20	3		1			
4	3		4	1	9	4					
5	1		5	1	5	5		3			
6	4		6	1	5	6					
7	5		7		3	7		1			
8	3		8		3	8		1			
9	5		9		3	9		1			
40			40			40		1			
1	5		1			1					
2	6		2			2					
3	3		3		104	3					
4	5		4		+	4					
5	2		5		13 soft	5					
6	7	67+20 soft	6		+1 berned	6					
7	3		7		(118)	7					
8	3	(69)	8			8					
9	1		9			9					
67		2	104			13		1			

COUNT

RANGE

FRACTION SAMPLED ALL

COUNT

RANGE

FRACTION SAMPLED ALL

COUNT

RANGE

FRACTION SAMPLED

HAUL No. 11

LARGE/SMALL MESH. 2

0	6	6	6
1	7	7	7
2	8	8	8
3	9	9	9
4	0	0	0
5	1	1	1
6	2	2	2
7	3	3	3
8	4	4	4
9	5	5	5
0	6	6	6
1	7	7	7
2	8	8	8
3	9	9	9
4	0	0	0
5	1	1	1
6	2	2	2
7	3	3	3
8	4	4	4
9	5	5	5

COUNT

RANGE

FRACTION SAMPLED

SPECIES

A. subena Count
Chlamys. op.
Salps.

2

1

several

COUNT

RANGE

FRACTION SAMPLED