

**Bedford Institute of Oceanography**

**L'Institut océanographique de Bedford**

Dartmouth / Nova Scotia / Canada

**An Illustrated Catalogue of Foraminifera and Ostracoda  
from Canso Strait and Chedabucto Bay, Nova Scotia**

DFO - Library / MPO - Bibliothèque



10034779

BEDFORD INSTITUTE  
REFERENCE

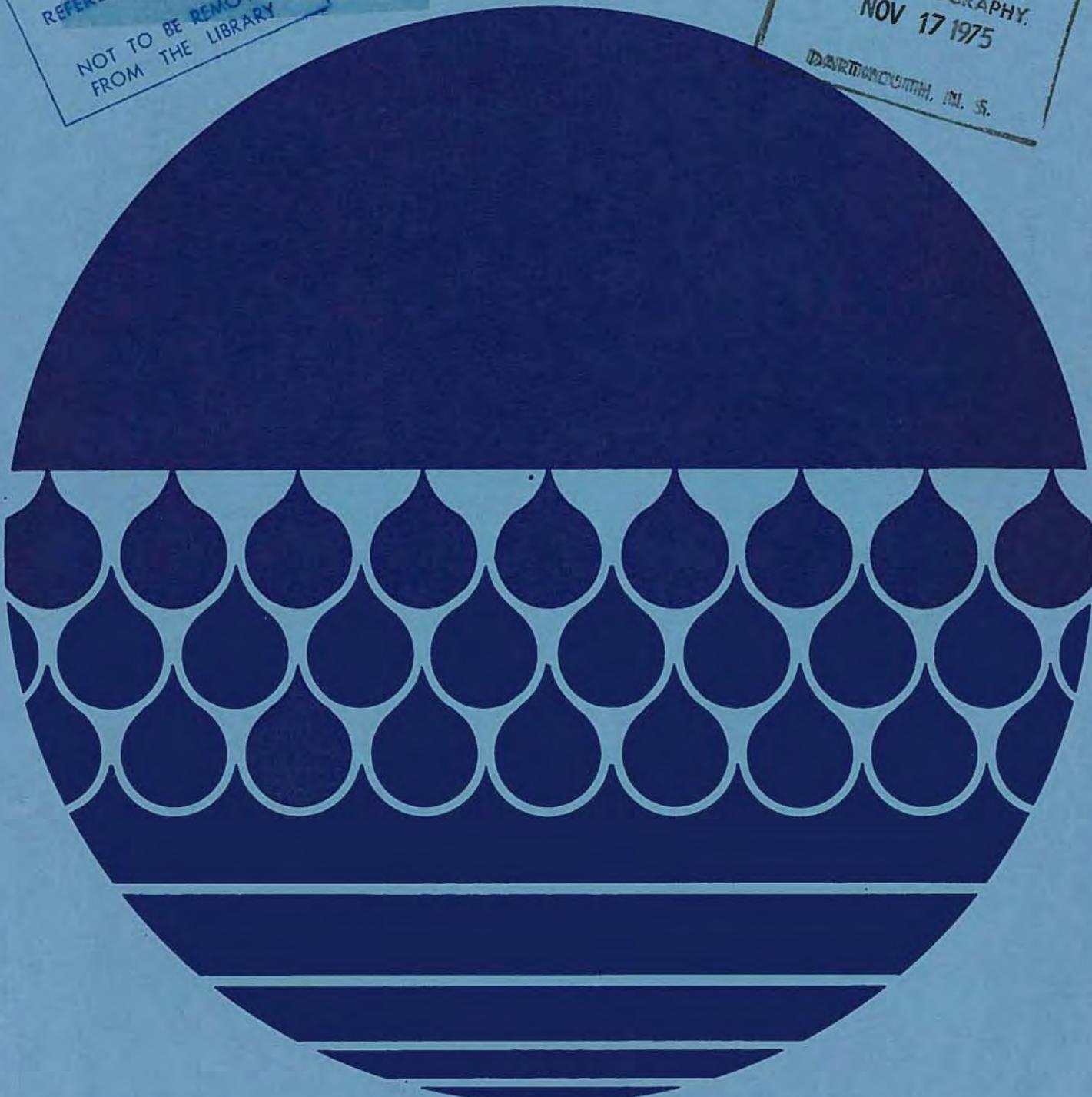
NOT TO BE REMOVED  
FROM THE LIBRARY

F. Cole and C. Ferguson

Report Series/BI-R-75-5/March 1975

LIBRARY  
BEDFORD INSTITUTE  
OF OCEANOGRAPHY  
NOV 17 1975

DARTMOUTH, N.S.



The Bedford Institute of Oceanography is a Government of Canada establishment whose staff undertake scientific research and surveys in the marine environment. It consists of three main units: (1) the Atlantic Oceanographic Laboratory, which is part of Fisheries and Marine Service, Department of the Environment, (2) the Marine Ecology Laboratory, also of Fisheries and Marine Service, Department of the Environment, and (3) the Atlantic Geoscience Centre of the Geological Survey of Canada, Department of Energy, Mines and Resources.

L'Institut océanographique de Bedford est un établissement du gouvernement du Canada, dont le personnel entreprend des travaux de recherche scientifique et des études se rapportant au milieu marin. Il comprend trois services principaux: (1) le Laboratoire océanographique de l'Atlantique, qui fait partie du Service des pêches et des sciences de la mer du ministère de l'Environnement, (2) le Laboratoire d'écologie marine, qui relève également du Service des pêches et des sciences de la mer du ministère de l'Environnement, et (3) le Centre géoscientifique de l'Atlantique de la Commission géologique du Canada, ministère de l'Energie, des Mines et des Ressources.

BEDFORD INSTITUTE OF OCEANOGRAPHY

Dartmouth, Nova Scotia  
Canada

AN ILLUSTRATED CATALOGUE OF FORAMINIFERA

AND OSTRACODA FROM CANSO STRAIT

AND CHEDABUCTO BAY, NOVA SCOTIA

by

Flona Cole and Carolyn Ferguson

Atlantic Geoscience Centre  
Geological Survey of Canada  
Department of Energy, Mines and Resources

ABSTRACT

This report contains an illustrated catalogue of the Foraminifera and Ostracoda of the Strait of Canso and Chedabucto Bay, Nova Scotia, which were recorded in April and August of 1973.

RESUME

Le présent rapport contient un catalogue illustré des foraminifères et des ostracodes du Détroit de Canso et de la Baie de Chedabucto (Nouvelle-Ecosse), qui ont été relevés en avril et en août 1973.

TABLE OF CONTENTS

	<u>Page No.</u>
Introduction	1
Method	1
Explanation of figures and plates	1
Acknowledgements	1
Station locations	2
Foraminifera	7
Foraminiferal Reference List	32
Ostracods	45
Ostracod Faunal List	52
Selected Bibliography	55

## INTRODUCTION

A multidisciplinary survey was carried out in the Strait of Canso area during the summer of 1973 to determine the possible effects of causeway construction and subsequent industrialization of the area on the marine environment (Buckley, 1973; Buckley *et al.*, 1974; Vilks *et al.*, 1975). This is an illustrated catalogue of the Foraminifera and Ostracoda of the study area.

## METHOD

Sampling methods for the collection of grab and core samples are described by Buckley (1973).

Laboratory processing of paleontological samples was as follows. Samples were measured volumetrically and wet sieved to remove the silt-clay fraction below 0.063 mm. Grab samples were stained for 30 minutes in 1 gm/l of water solution of Rose Bengal (to stain the protoplasm and differentiate living from empty tests), then rewashed. After drying, each sample was weighed in order to calculate total dry weight from results of sedimentary analysis of duplicate samples. Dried weighed samples were transferred to beakers and covered with a 10:4 Bromoform-Acetone mixture, in which the less dense tests and shells were separated from the denser sands, which sank to the bottom.

The 'floats' were washed into filter paper, rinsed with acetone and dried.

The dry 'floats' were examined under the microscope and the Foraminifera and Ostracoda were identified and counted.

## EXPLANATION OF FIGURES AND PLATES

Figures 1 to 4 show station locations.

Plates 1 to 12 are Foraminifera found in the study area, and Plates 13 to 15 show the Ostracoda.

## ACKNOWLEDGEMENTS

The authors wish to express many thanks to the scientists who were involved in the gathering of the data, and who confirmed the identifications, in particular C. Schafer. Special thanks go to technician B. Baker, who helped analyze the samples and the data, and to the critical readers. F. Wagner, C. Schafer and G. Vilks, for their helpful comments and criticisms of this paper.

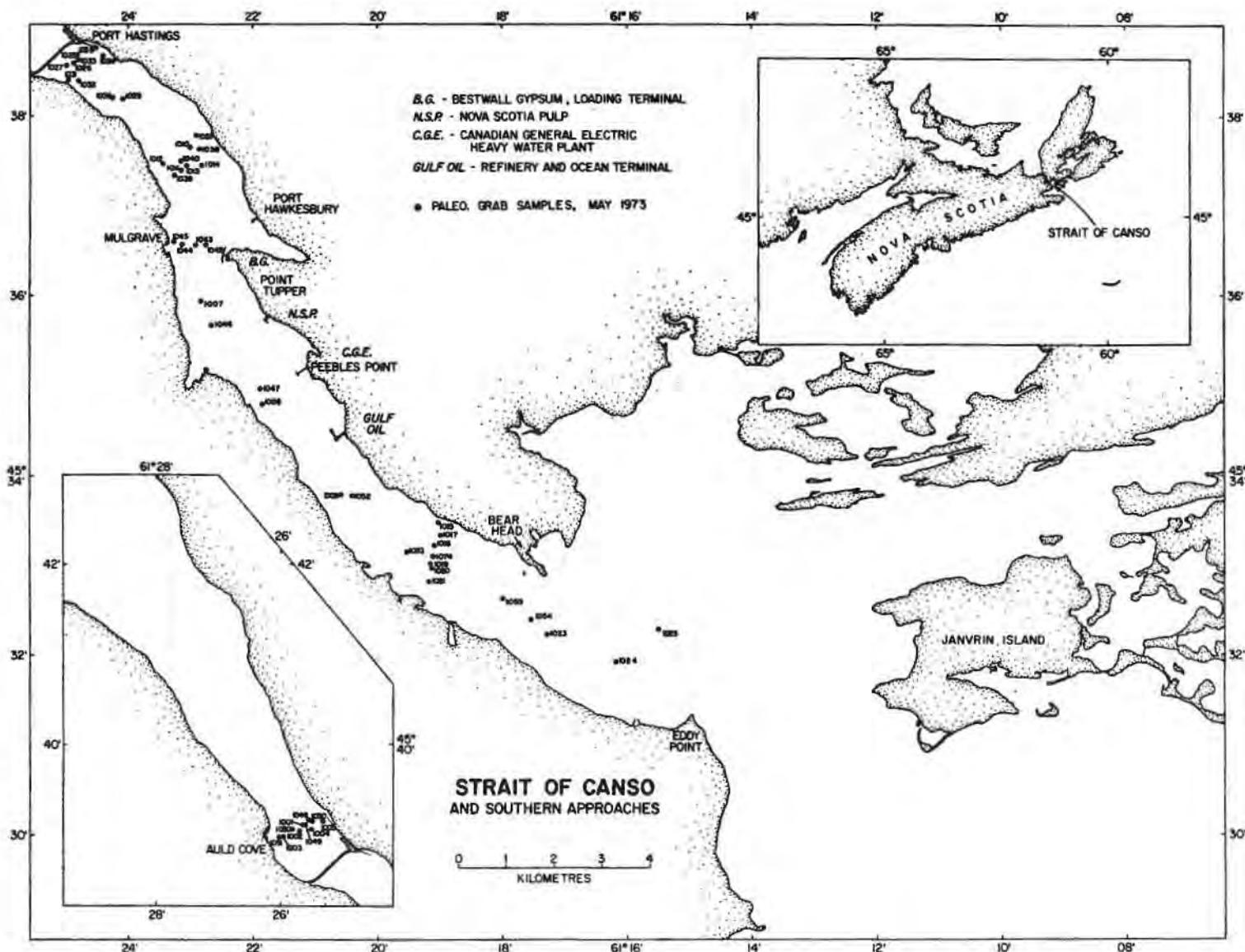


Figure 1. Grab Sample Locations, May 1973

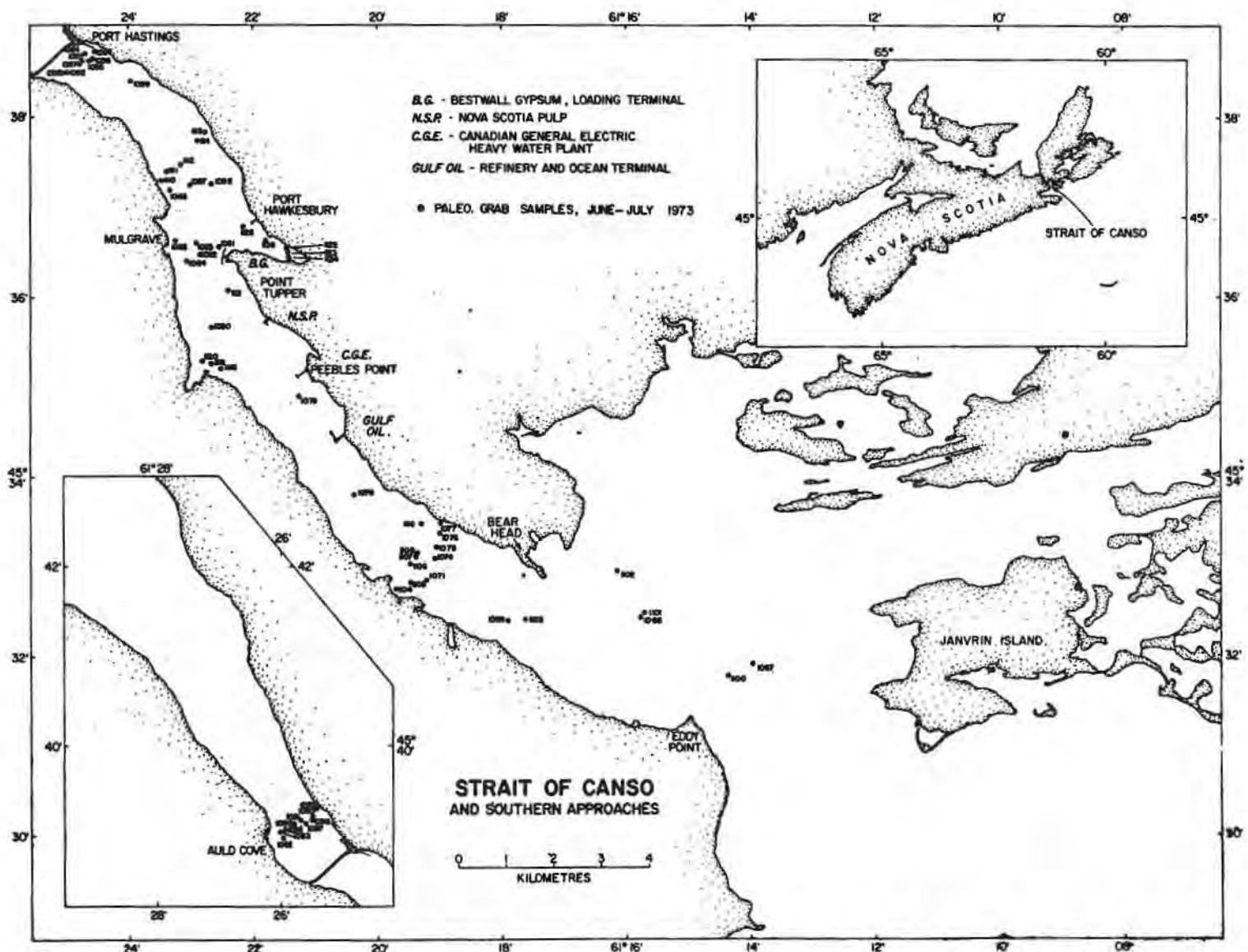


Figure 2. Grab Sample Locations, June-July 1973

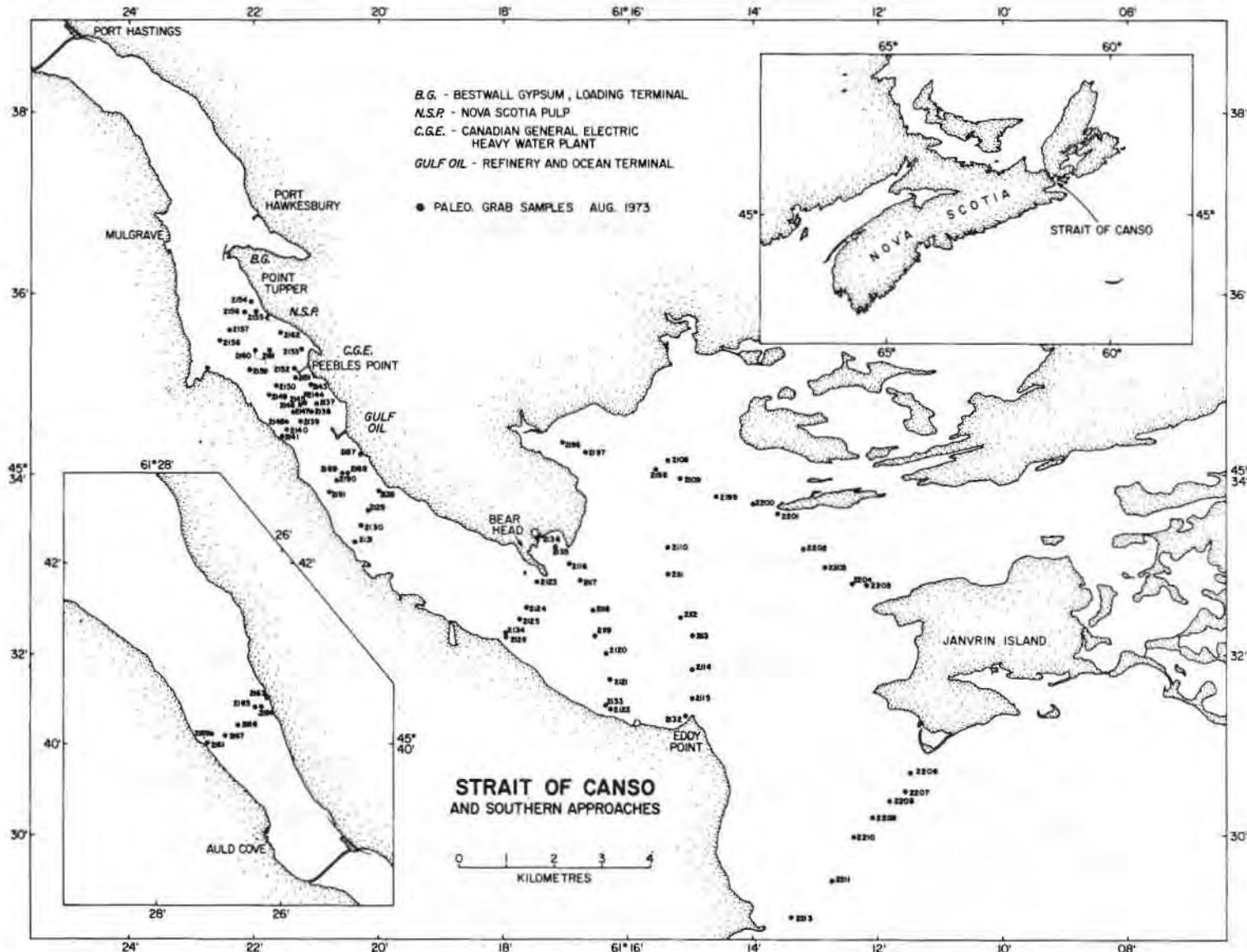
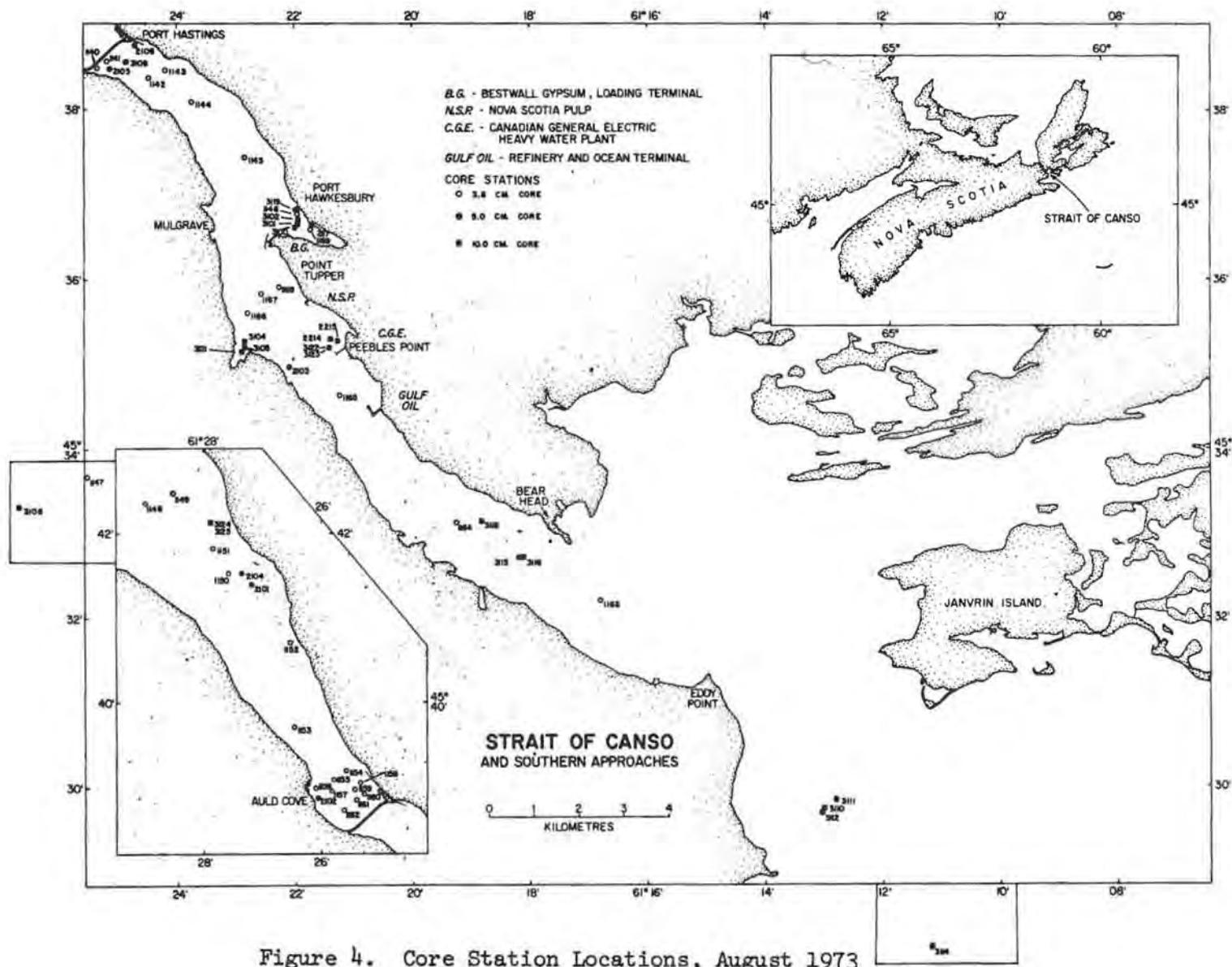


Figure 3. Grab Sample Locations, August 1973





FORAMINIFERA

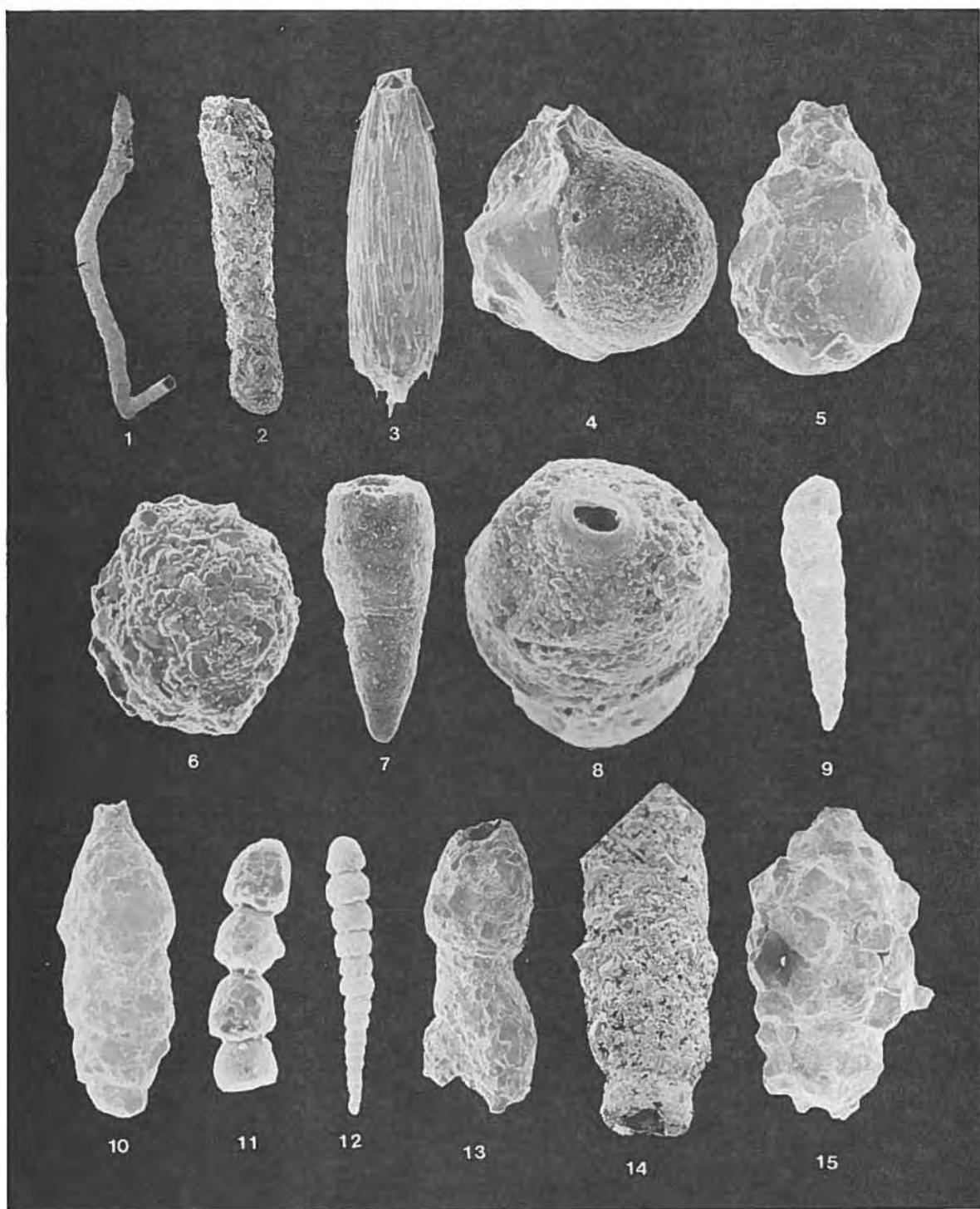
One hundred and eleven species of foraminifera were identified from the grabs and core samples taken in the Strait of Canso, St. Georges Bay and Inhabitants Bay. Of these, 74 species are calcareous, the remaining 37 are arenaceous. Arenaceous species in the genus *Reophax* dominate numerically in the Strait of Canso from the causeway south to Eddy Point. Calcareous species in the genera *Elphidium*, *Protelphidium* and *Islandiella* dominate in the bays and the Strait north of the causeway.

Four species were found only in the cores. One species (*Ammobaculites dilitatus*) is found in east coast bays and estuaries, one (*Silicosigmoilina groenlandica*) is an Arctic species, and the other two are found today in very deep waters. *Sigmoilopsis schlumbergeri* is commonest below 600 metres, and *Pyrgo comata* is found at similar depths. Otherwise the assemblages in which these two species were found are Continental Shelf to Arctic in nature.

## Plate 1. Foraminifera

## Astrorhizidae, Saccamminidae, Hormosinidae

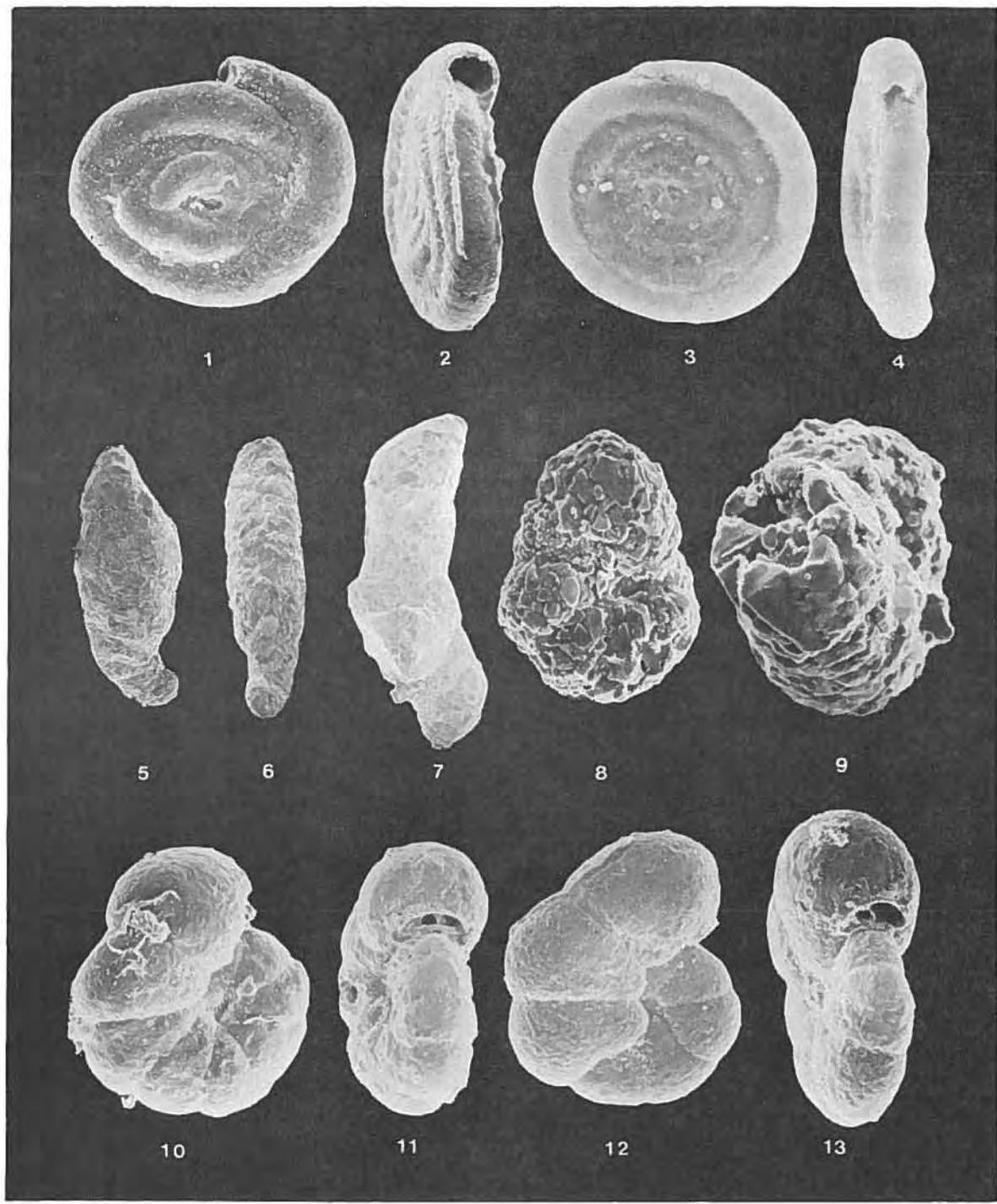
1.	<i>Bathysiphon rufus</i> de Folin	Station 1055	X32
2.	<i>Hyperammina elongata</i> Brady	Station 2210	X21
3.	<i>Technitella legumen</i> Norman	Station 1100	X53
4.	<i>Hemisphaerammina</i> sp.	Station 1035	X127
5.	<i>Saccammina atlantica</i> (Cushman)	Station 1055	X69
6.	<i>Saccammina sphaerica</i> Brady	Station 1054	X95
7.	<i>Hippocrepina indivisa</i> Parker	Station 1069	X69
8.	<i>Hippocrepina indivisa</i> Parker	Station 1069	X159
9.	<i>Reophax arctica</i> Brady	Station 1094	X69
10.	<i>Reophax dentaliniformis</i> Brady	Station 1005	X53
11.	<i>Reophax gracilis</i> (Kiaer)	Station 1029	X212
12.	<i>Reophax scottii</i> Chaster	Station 1094	X106
13.	<i>Reophax nodulosus</i> Brady	Station 2143	X42
14.	<i>Reophax</i> cf. <i>nodulosus</i> Brady	Station 2210	X16
15.	<i>Reophax fusiformis</i> (Williamson)	Station 1094	X27



## Plate 2. Foraminifera

## Ammodiscidae, Lituolidae

1.	<i>Glomospira gordialis</i> (Jones & Parker)	Station 1094	X160
2.	<i>Glomospira gordialis</i> (Jones & Parker)	Station 1094	X137
3.	<i>Ammodiscus catinus</i> Höglund	Station 1111	X285
4.	<i>Ammodiscus catinus</i> Höglund	Station 1111	X242
5.	<i>Ammotium cassis</i> (Parker)	Station 1034	X37
6.	<i>Ammotium cassis</i> (Parker)	Station 1034	X37
7.	<i>Ammobaculites salsus</i> Cushman & Bronnimann	Station 1010	X27
8.	<i>Ammobaculites dilitatus</i> Cushman & Bronnimann	Core 1164 (32-33 cm)	X171
9.	<i>Ammobaculites dilitatus</i> Cushman & Bronnimann	Core 1164 (32-33 cm)	X257
10.	<i>Cribrostomoides crassimargo</i> (Norman)	Station 1093	X49
11.	<i>Cribrostomoides crassimargo</i> (Norman)	Station 1092	X57
12.	<i>Cribrostomoides jeffreysi</i> (Williamson)	Station 1093	X80
13.	<i>Cribrostomoides jeffreysi</i> (Williamson)	Station 1047	X103



## Plate 3. Foraminifera

## Lituolidae, Textulariidae, Ataxophragmiidae

1.	<i>Textularia earlandi</i>	Station 1094	X123
2.	<i>Textularia torquata</i> F. Parker	Station 1093	X128
3.	<i>Spiroplectammina biformis</i> (Parker & Jones)	Station 1093	X91
4.	<i>Recurvoides contortus</i> Earland	Station 1093	X149
5.	<i>Recurvoides contortus</i> Earland	Station 1093	X91
6.	<i>Recurvoides contortus</i> Earland	Station 1008	X128
7.	<i>Recurvoides turbinatus</i> (Brady)	Station 1092	X117
8.	<i>Recurvoides turbinatus</i> (Brady)	Station 1092	X96
9.	<i>Recurvoides turbinatus</i> (Brady)	Station 1008	X117
10.	<i>Eggerella advena</i> (Cushman)	Station 1001	X107
11.	<i>Eggerella advena</i> (Cushman)	Station 1001	X240
12.	<i>Adercotryma glomeratum</i> (Brady)	Station 1001	X160
13.	<i>Adercotryma glomeratum</i> (Brady)	Station 1001	X133

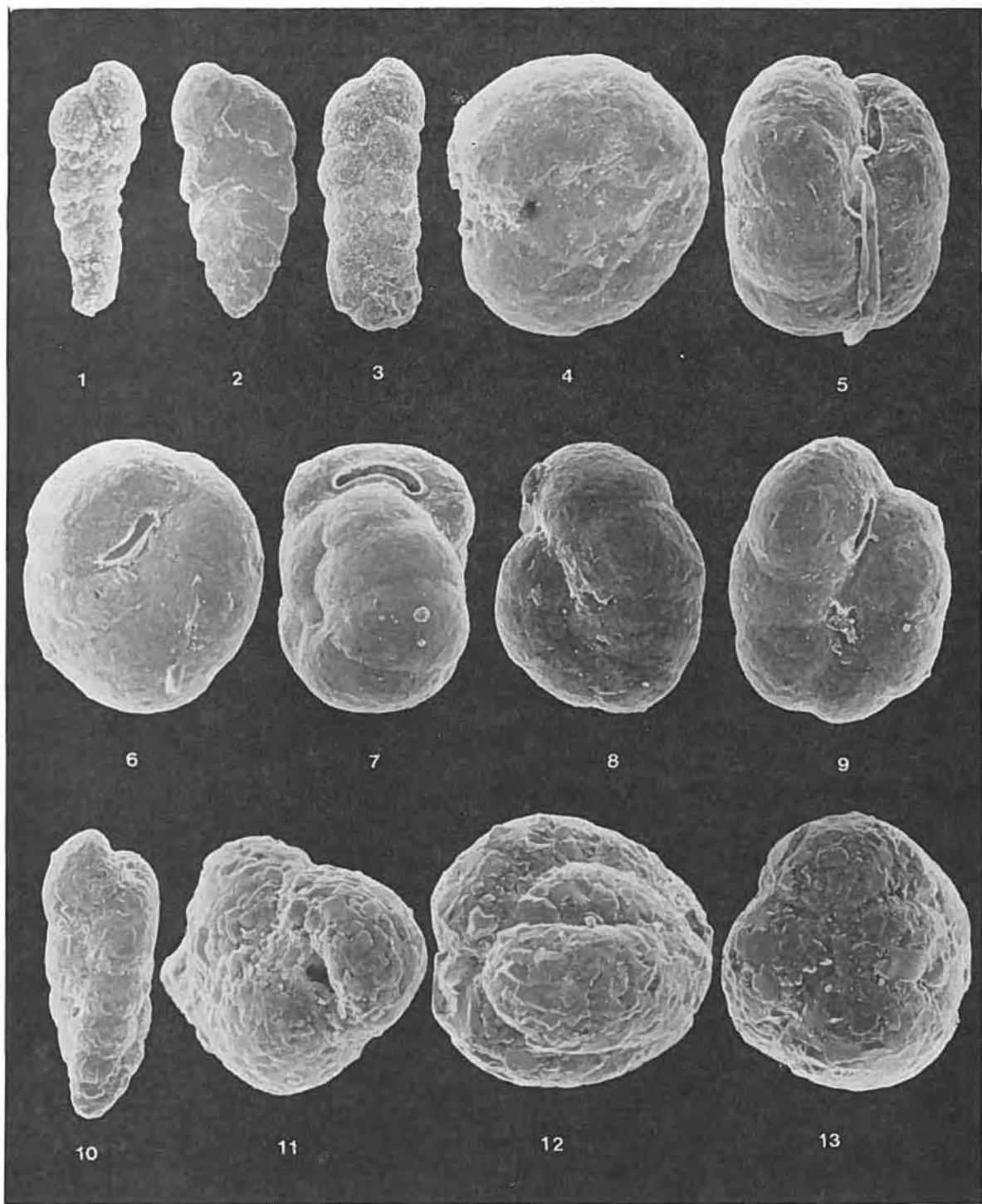
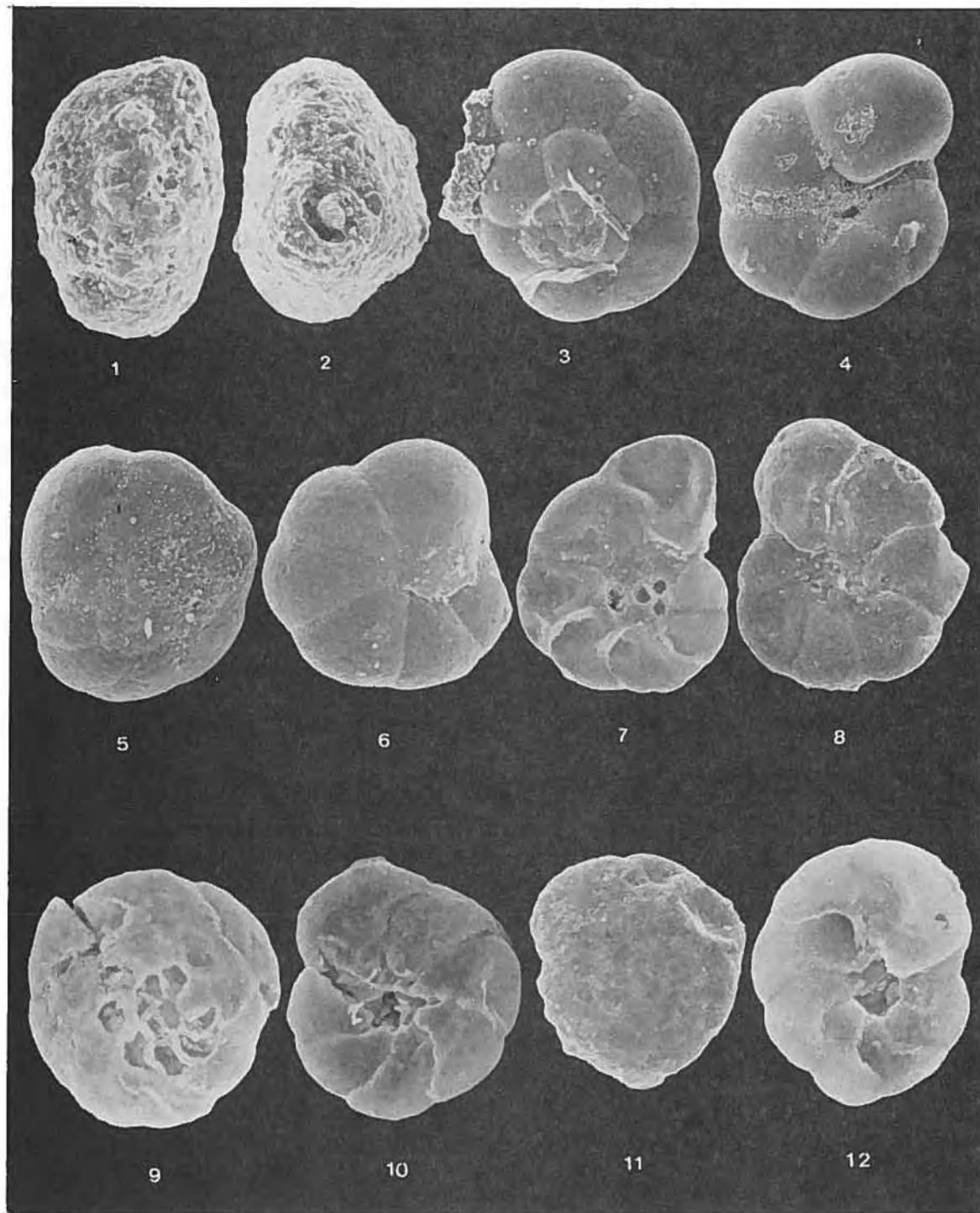


Plate 4. Foraminifera  
Rzehakinidae, Textulariidae

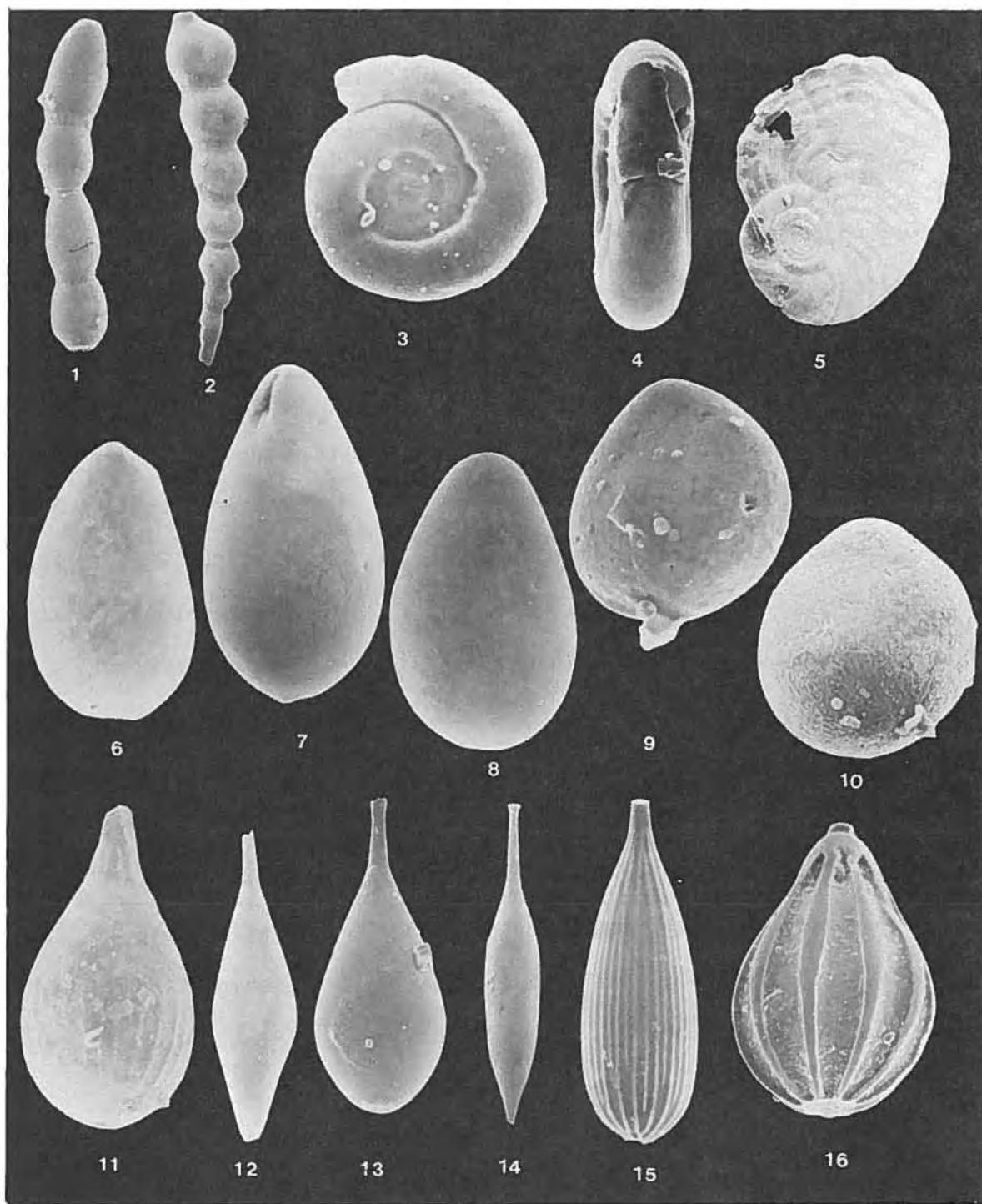
1.	<i>Miliammina fusca</i> (Brady)	Station 1015	X148
2.	<i>Miliammina fusca</i> (Brady)	Station 1015	X185
3.	<i>Trochammina inflata</i> (Montagu)	Station 1029	X85
4.	<i>Trochammina inflata</i> (Montagu)	Station 1042	X64
5.	<i>Trochammina lobata</i> Cushman	Station 1034	X90
6.	<i>Trochammina lobata</i> Cushman	Station 1037	X95
7.	<i>Trochammina macrescens</i> Brady	Station 2213	X143
8.	<i>Trochammina macrescens</i> Brady	STation 2165	X132
9.	<i>Trochammina ochracea</i> (Williamson)	Station 1001	X212
10.	<i>Trochammina ochracea</i> (Williamson)	Station 1050	X185
11.	<i>Trochammina squamata</i> Parker & Jones	Station 1051	X159
12.	<i>Trochammina squamata</i> Parker & Jones	Station 1086	X225



## Plate 5. Foraminifera

## Fischerinidae, Nodosariidae, Glandulinidae

1.	<i>Dentalina ittai</i> Loeblich & Tappan	Station 1055	X60
2.	<i>Nodosaria emphysaocysta</i> Loeblich & Tappan	Station 1025	X24
3.	<i>Cyclogyra involvens</i> (Reuss)	Station 1101	X151
4.	<i>Cyclogyra involvens</i> (Reuss)	Station 1101	X188
5.	<i>Cyclogyra foliacea</i> (Philippi)	Station 1029	X27
6.	<i>Parafissurina himatiostoma</i> Loeblich & Tappan	Station 2209	X215
7.	<i>Fissurina cucurbitasema</i> Loeblich & Tappan	Station 1005	X269
8.	<i>Fissurina cucurbitasema</i> Loeblich & Tappan	Station 1049	X256
9.	<i>Fissurina lucida</i> (Williamson)	Station 1101	X242
10.	<i>Fissurina marginata</i> (Montagu)	Station 1068	X161
11.	<i>Lagena semilineata</i> Wright	Station 1055	X129
12.	<i>Lagena gracillima</i> (Seguenza)	Station 1056	X70
13.	<i>Lagena laevis</i> (Montagu)	Station 2209	X75
14.	<i>Lagena mollis</i> Cushman	Station 2209	X54
15.	<i>Lagena meridionalis</i> Wiesner	Station 2203	X140
16.	<i>Lagena apiopleura</i> Loeblich & Tappan	Station 1024	X113

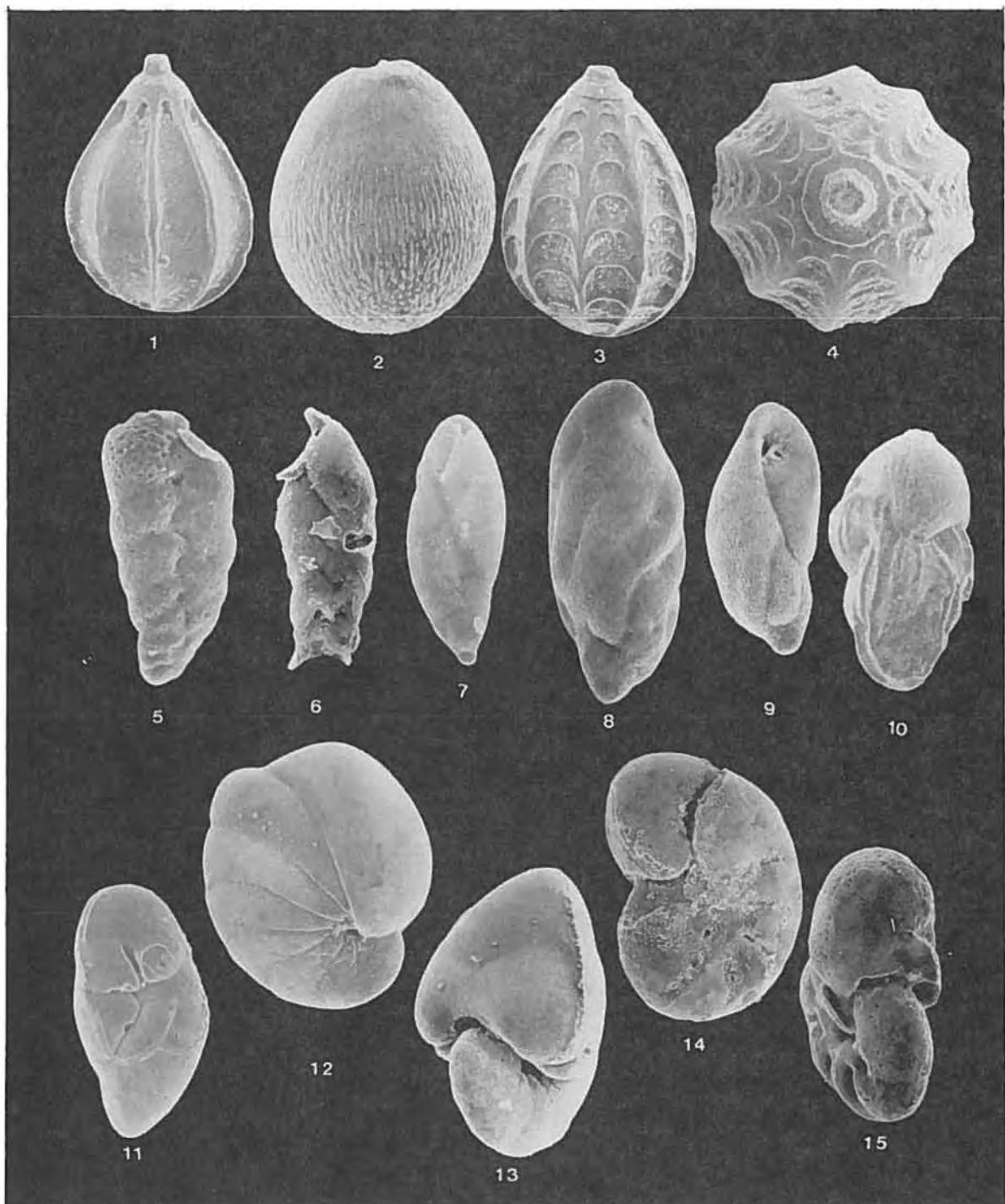


## Plate 6. Foraminifera

Glandulinidae, Turrilinidae, Bolivinitidae, Uvigerinidae,

Nonionidae, Robertinidae, Caucasinidae

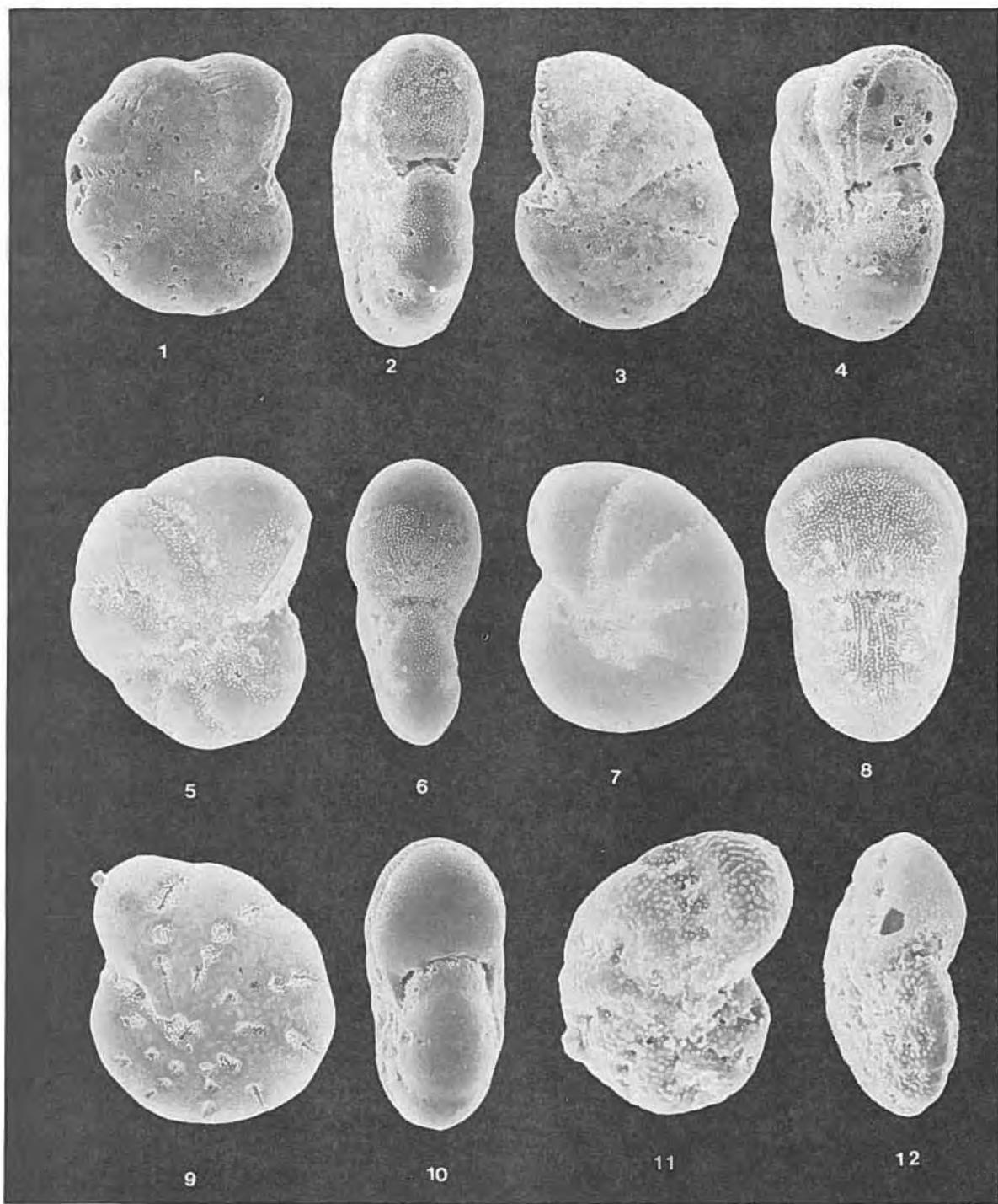
1.	<i>Oolina borealis</i> Loeblich & Tappan	Station 2206	X110
2.	<i>Oolina squamosa</i> (Montagu)	Core 2214 (44-46 cm)	X95
3.	<i>Oolina melo</i> d'Orbigny	Station 1106	X90
4.	<i>Oolina melo</i> d'Orbigny	Station 2206	X135
5.	<i>Bolivina pseudoplicata</i> Heron-Allen & Earland	Core 1147 (17-18 cm)	X150
6.	<i>Bolivina pseudopunctata</i> Höglund	Station 1056	X135
7.	<i>Cassidella complanata</i> (Egger)	Station 1027	X150
8.	<i>Buliminella elegantissima</i> (d'Orbigny)	Station 1005	X150
9.	<i>Buliminella elegantissima</i> (d'Orbigny)	Station 1051	X150
10.	<i>Trifarina fluens</i> (Todd)	Station 1101	X110
11.	<i>Robertinoides charlottensis</i> (Cushman)	Station 2210	X80
12.	<i>Nonionellina labradorica</i> (Dawson)	Station 1092	X65
13.	<i>Nonionellina labradorica</i> (Dawson)	Station 1056	X90
14.	<i>Astrononion gallowayi</i> Loeblich & Tappan	Station 1055	X105
15.	<i>Astrononion gallowayi</i> Loeblich & Tappan	Station 1055	X175



## Plate 7. Foraminifera

## Elphidiidae

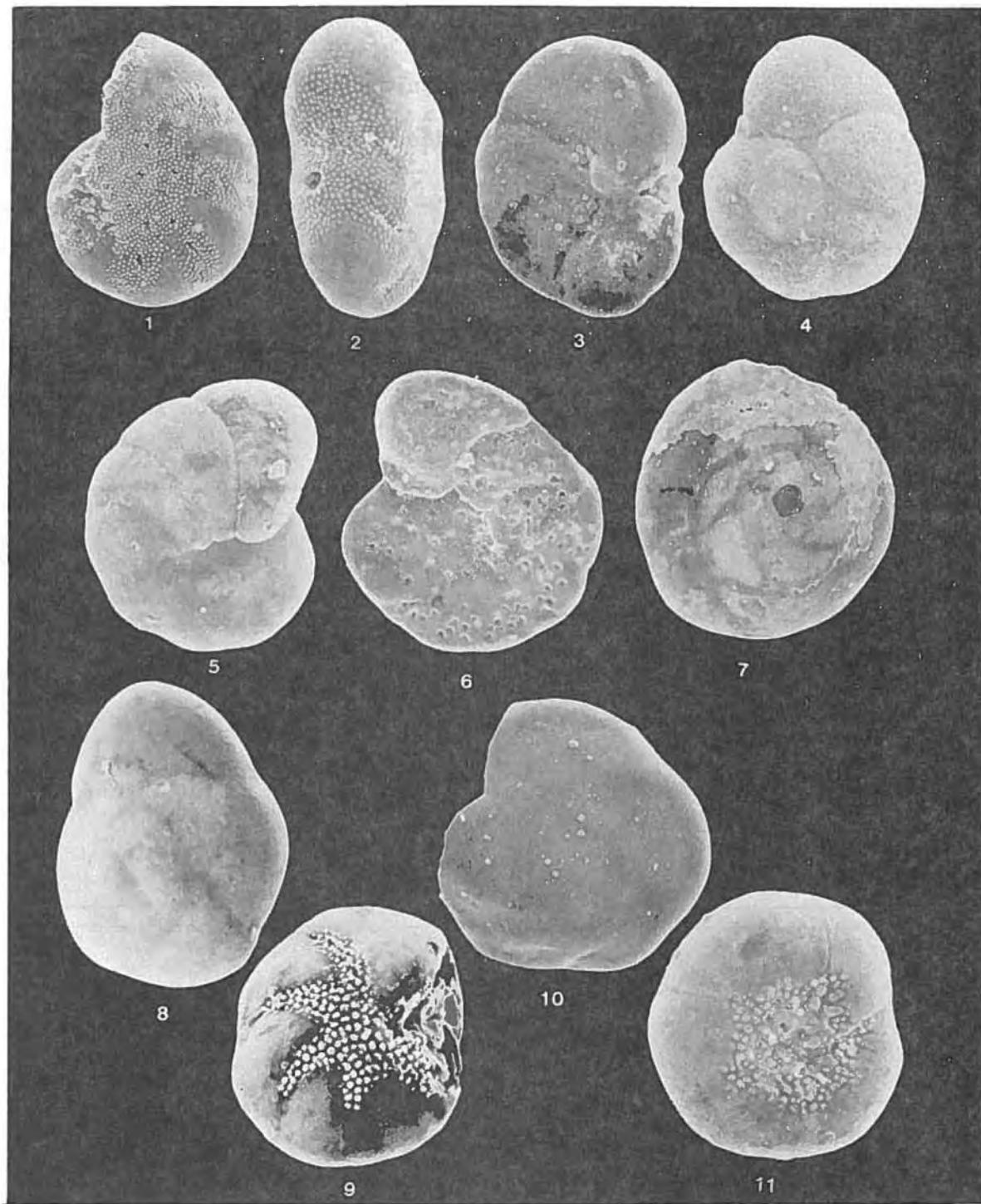
1.	<i>Elphidiella arctica</i> (Parker & Jones)	Station 1055	X69
2.	<i>Elphidiella arctica</i> (Parker & Jones)	Station 1102	X80
3.	<i>Elphidium bartletti</i> Cushman	Station 1101	X69
4.	<i>Elphidium bartletti</i> Cushman	Station 1049	X80
5.	<i>Elphidium frigidum</i> Cushman	Station 1102	X117
6.	<i>Elphidium frigidum</i> Cushman	Station 1005	X80
7.	<i>Protelphidium orbiculare</i> (Brady)	Station 1001	X75
8.	<i>Protelphidium orbiculare</i> (Brady)	Station 1001	X128
9.	<i>Elphidium incertum clavatum</i> Cushman	Station 1101	X107
10.	<i>Elphidium incertum clavatum</i> Cushman	Station 1101	X112
11.	<i>Elphidium margaritaceum</i> Cushman	Station 1050	X160
12.	<i>Elphidium margaritaceum</i> Cushman	Station 1049	X160



## Plate 8. Foraminifera

Elphidiidae, Discorbidae, Glabratellidae, Cibicidae

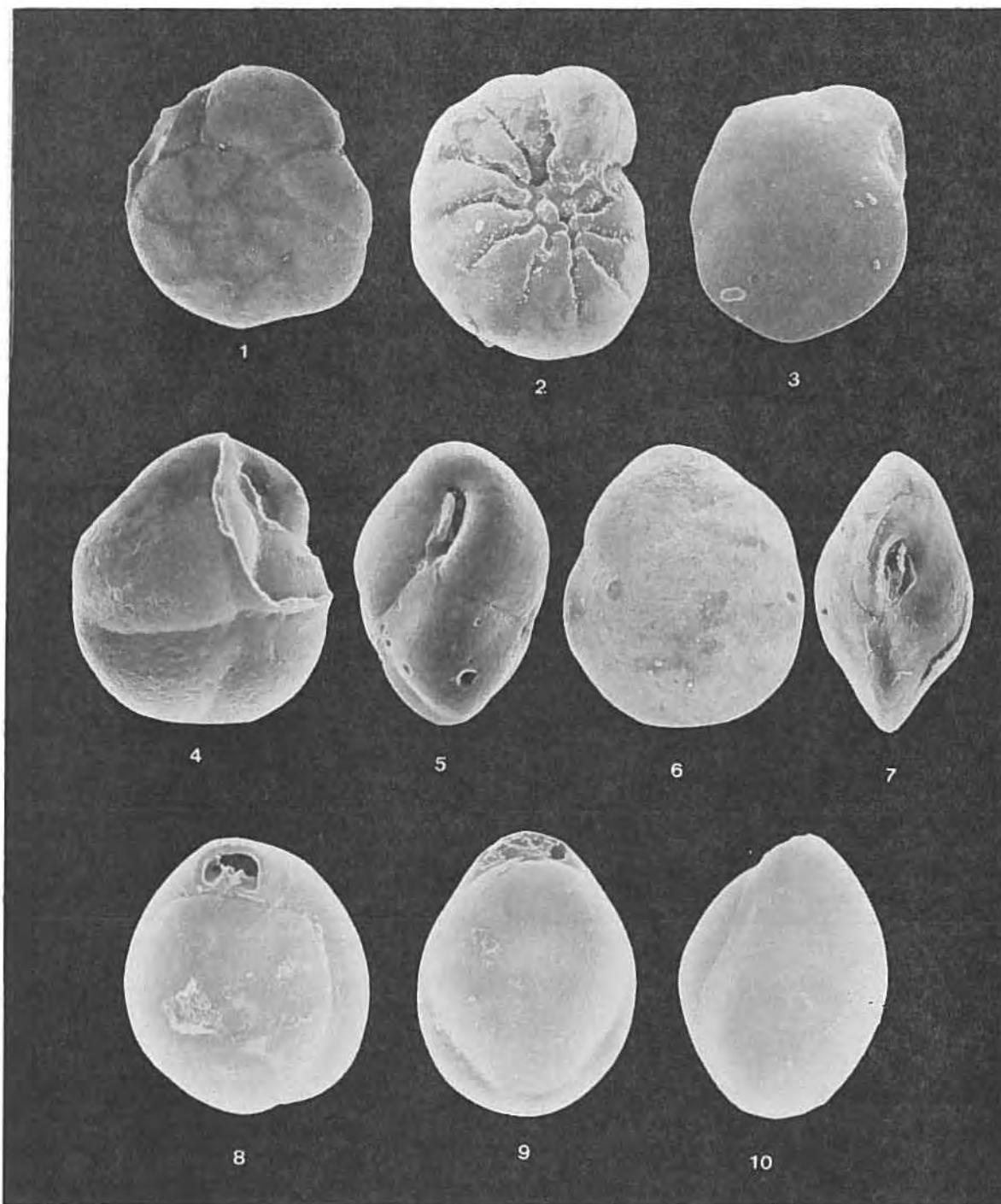
1.	<i>Elphidium subarcticum</i> Cushman	Station 1055	X118
2.	<i>Elphidium subarcticum</i> Cushman	Station 1049	X187
3.	<i>Rosalina floridana</i> (Cushman)	Station 1001	X139
4.	<i>Rosalina floridana</i> (Cushman)	Station 1001	X112
5.	<i>Cibicides lobatulus</i> (Walker & Jacob)	Station 1001	X91
6.	<i>Cibicides lobatulus</i> (Walker & Jacob)	Station 1055	X96
7.	<i>Buccella inusitata</i> Anderson	Station 1053	X139
8.	<i>Buccella frigida</i> (Cushman)	Station 1101	X227
9.	<i>Buccella frigida</i> (Cushman)	Station 1051	X200
10.	<i>Glabratella wrightii</i> (Brady)	Station 2206	X91
11.	<i>Glabratella wrightii</i> (Brady)	Station 2206	X159



## Plate 9. Foraminifera

## Rotaliidae, Islandiellidae, Miliolidae

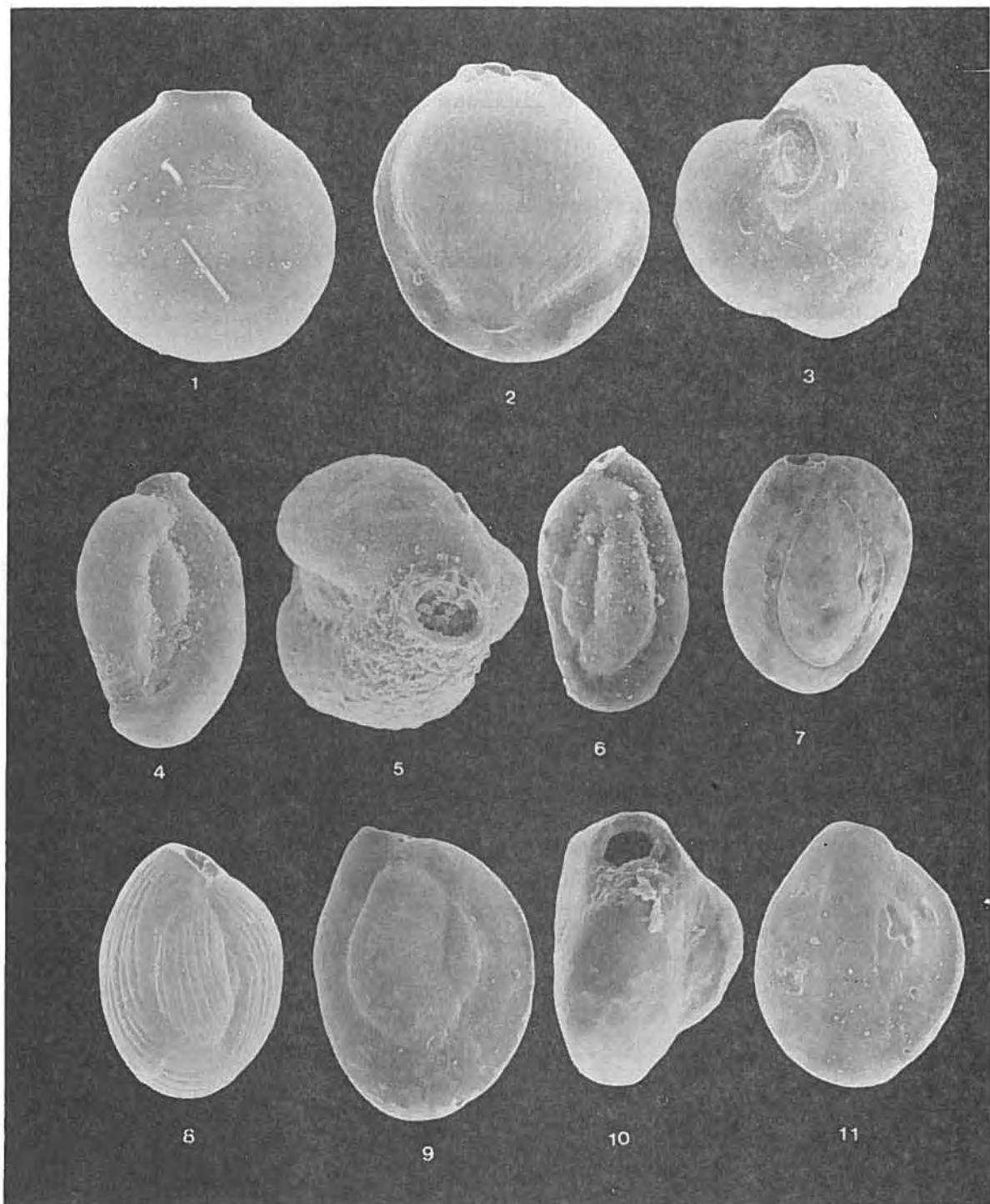
1.	<i>Ammonia beccarii</i> (Linné)	Station 1005	X163
2.	<i>Ammonia beccarii</i> (Linné)	Station 1051	X92
3.	<i>Islandiella norcrossi</i> (Cushman)	Station 1001	X136
4.	<i>Islandiella islandica</i> (Nørvang)	Station 1111	X177
5.	<i>Islandiella islandica</i> (Nørvang)	Station 1111	X190
6.	<i>Islandiella teretis</i> (Tappan)	Station 1001	X109
7.	<i>Islandiella teretis</i> (Tappan)	Station 1055	X92
8.	<i>Pyrgo williamsoni</i> (Silvestri)	Station 1001	X76
9.	<i>Pyrgo williamsoni</i> (Silvestri)	Station 1004	X54
10.	<i>Pyrgo williamsoni</i> (Silvestri)	Station 1097	X65



## Plate 10. Foraminifera

## Miliolidae

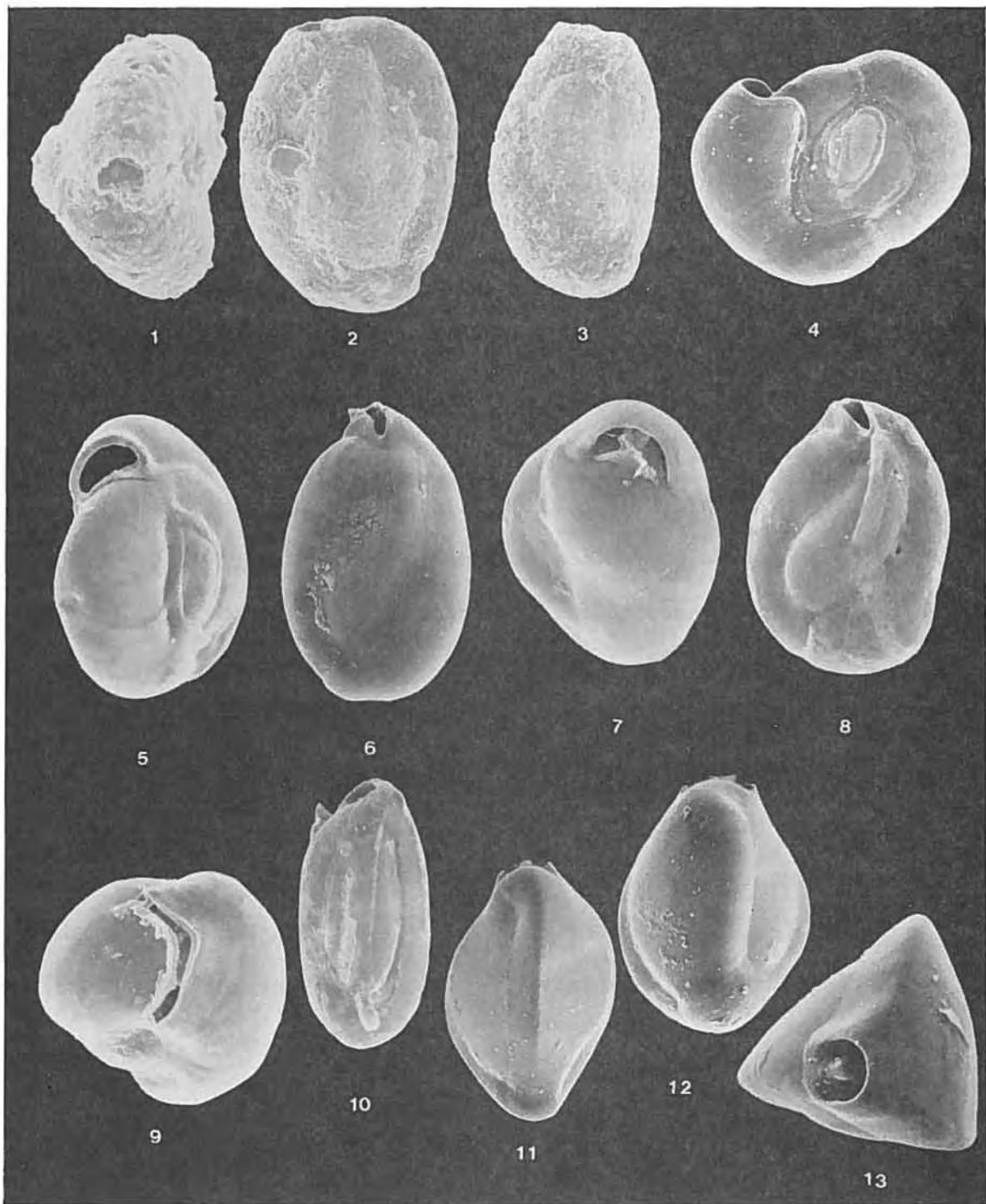
1.	<i>Pyrgo comata</i> (Brady)	Core 2214 (31-33 cm)	X70
2.	<i>Pyrgo comata</i> (Brady)	Core 3108 (20-22 cm)	X54
3.	<i>Pyrgo comata</i> (Brady)	Core 2102 (bottom)	X76
4.	<i>Quinqueloculina stalkeri</i> Loeblich & Tappan	Station 1101	X87
5.	<i>Quinqueloculina stalkeri</i> Loeblich & Tappan	Station 1049	X162
6.	<i>Quinqueloculina stalkeri</i> Loeblich & Tappan	Station 221	X152
7.	<i>Quinqueloculina seminulum</i> (Linne)	Station 1001	X54
8.	<i>Quinqueloculina jugosa</i> Cushman	Station 1004	X81
9.	<i>Quinqueloculina arctica</i> Cushman	Station 1050	X54
10.	<i>Quinqueloculina arctica</i> Cushman	Station 1050	X162
11.	<i>Quinqueloculina arctica</i> Cushman	Station 1024	X81



## Plate 11. Foraminifera

## Miliolidae

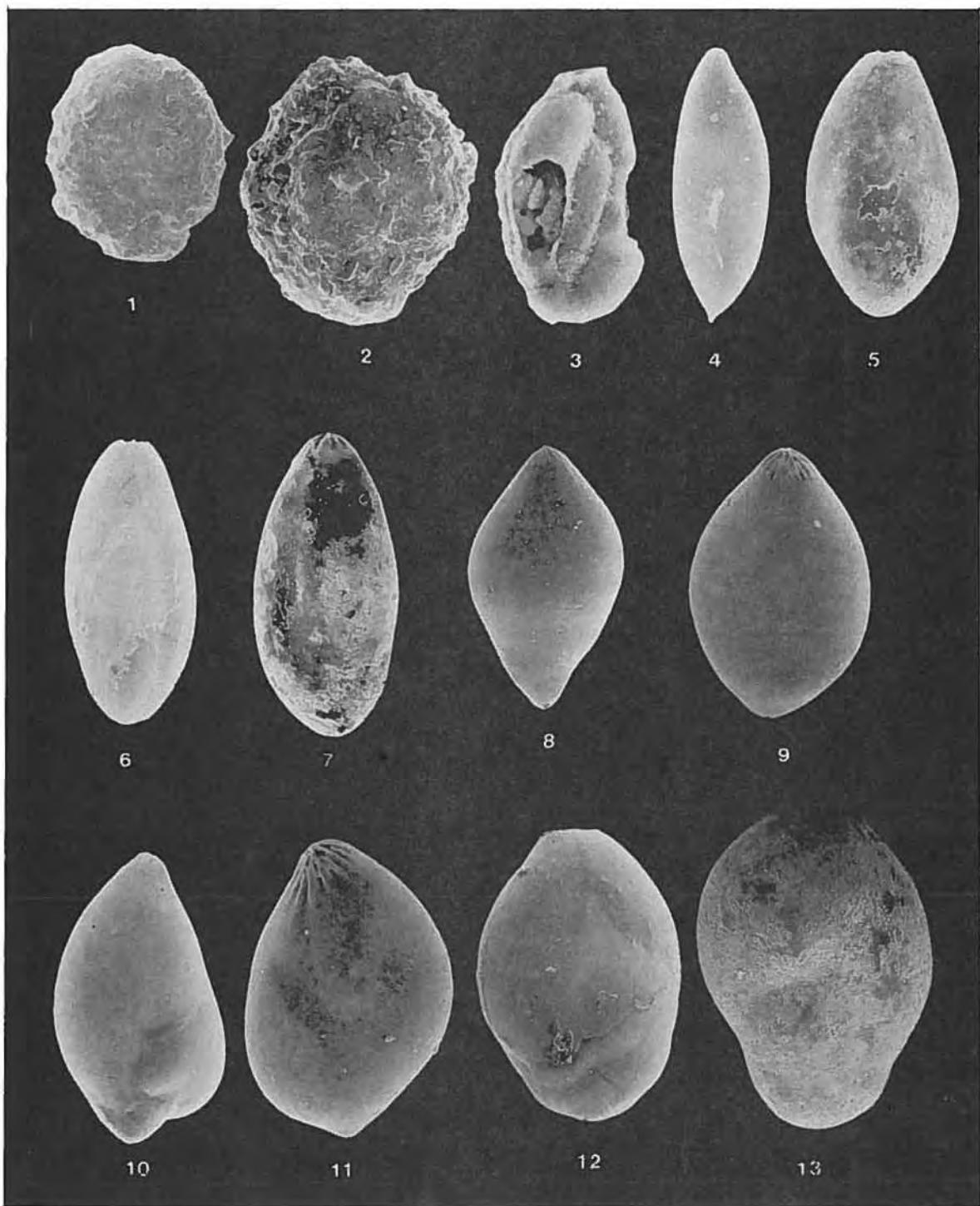
1.	<i>Quinqueloculina agglutinata</i> Cushman	Station 1101	X197
2.	<i>Quinqueloculina agglutinata</i> Cushman	Station 1049	X53
3.	<i>Quinqueloculina agglutinata</i> Cushman	Station 1049	X79
4.	<i>Pateoris hauerinoides</i> (Rhumbler)	Station 1104	X68
5.	<i>Pateoris hauerinoides</i> (Rhumbler)	Station 2206	X158
6.	<i>Miliolinella chukchiensis</i> Loeblich & Tappan	Station 1018	X137
7.	<i>Miliolinella chukchiensis</i> Loeblich & Tappan	Station 1018	X171
8.	<i>Miliolinella subrotunda</i> (Montagu)	Station 1096	X131
9.	<i>Miliolinella subrotunda</i> (Montagu)	Station 1100	X89
10.	<i>Triloculina oblonga</i> (Montagu)	Station 1001	X74
11.	<i>Triloculina tricarinata</i> d'Orbigny	Station 1097	X79
12.	<i>Triloculina trihedra</i> Loeblich & Tappan	Station 1001	X74
13.	<i>Triloculina trihedra</i> Loeblich & Tappan	Station 1001	X100



## Plate 12. Foraminifera

Miliolidae, Nodosariidae, Glandulinidae, Polymorphinidae,  
 Buliminidae, Rzehakinidae

1.	<i>Sigmoilopsis schlumbergeri</i> (Silvestri)	Core 3125 (38-40 cm)	X64
2.	<i>Sigmoilopsis schlumbergeri</i> (Silvestri)	Core 3125 (38-40 cm)	X64
3.	<i>Silicosigmoilina groenlandica</i> (Cushman)	Core 1156 (6-7 cm)	X159
4.	<i>Pyrulina fusiformis</i> (Roemer)	Core 3118 (20-22 cm)	X69
5.	<i>Laryngosigma hyalascidia</i> Loeblich & Tappan	Station 1111	X85
6.	<i>Pseudopolymorphina novangliae</i> (Cushman)	Station 1010	X53
7.	<i>Pseudopolymorphina novangliae</i> (Cushman)	Station 1010	X53
8.	<i>Rectoglandulina torrida</i> (Cushman)	Station 1049	X64
9.	<i>Rectoglandulina torrida</i> (Cushman)	Station 1004	X96
10.	<i>Esosyrinx curta</i> (Cushman & Ozawa)	Station 1039	X159
11.	<i>Esosyrinx curta</i> (Cushman & Ozawa)	Station 1039	X149
12.	<i>Globobulimina auriculata</i> (Bailey) forma cf. <i>Arctica</i> Höglund	Station 1056	X43
13.	<i>Glandulina laevigata</i> d'Orbigny	Core 2214 (13-15 cm)	X53



FORAMINIFERAL REFERENCE LIST

*Adercotryma glomerata* (Brady) - Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 26, pl. 8, fig. 1-4.

= *Lituola glomerata*, Brady, 1878, Ann. Mag. Nat. Hist. ser. 5, vol. 1, p. 433, pl. 20, fig. 1a-c.

*Ammobaculites dilitatus* Cushman & Bronnimann, Parker, Frances, 1952, Bull. Mus. Comp. Zool., vol. 106 (10), p. 433, pl. 1, fig. 23.

= *A. dilitatus*, Cushman & Bronnimann, 1948, Contr. Cushman Lab. Foram. Res., vol. 24, pt. 2, p. 31, pl. 7, fig. 1-10.

*A. salsus* Cushman & Bronnimann, Ellis & Messina, Catalogue of Foraminifera (Amer. Mus. Nat. Hist.).

= *A. salsus*, Cushman & Bronnimann, 1948, Contr. Cushman Lab. Foram. Res., vol. 24 (16), pl. 3, fig. 7-9.

*Ammodiscus catinus* Höglund, Parker, Frances, 1952, Bull. Mus. Comp. Zool., vol. 106 (9), p. 398, pl. 2, fig. 3-4.

= *A. catinus*, Höglund, 1947, Univ. Zool. Bidrag Uppsala, Bd. 26, p. 122.

*Ammonia beccarii* (Linné), Parker, Frances, 1952, Bull. Mus. Comp. Zool., vol. 106 (10), p. 457, pl. 5, fig. 5a,b.

= *Nautilus beccarii*, Linné, 1758, Systema Natura ed. 10, p. 710.

*Ammotium cassis* (Parker), Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 33, pl. 2, fig. 12-18.

= *Lituola cassis*, Parker, 1870, in Dawson, LAN. NAT., n.s., vol. 5, pp. 177, 180, fig. 3.

*Astrononion gallowayi*, Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 90, pl. 17, fig. 4-7.

= *A. stellatum*, Cushman & Edwards, 1937, Contr. Cushman Lab. Foram. Res. 13, p. 32, pl. 3, fig. 9-11.

*Bathysiphon rufus* de Folin, Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 16, pl. 1, fig. 1.

= *B. rufus* de Folin, 1886, Act. Soc. Linn. Bordeaux, vol. 4 (ser. 4, no. 10), p. 283, pl. 6, fig. 8a-c.

*Bolivina pseudoplicata* Heron-Allen & Earland, Feyling Hanssen, 1971, Bull. Geol. Soc. Denmark 21, p. 243, pl. 7, fig. 16; pl. 18, fig. 11.

= *B. pseudoplicata*, Heron-Allen & Earland, 1930, Roy. Micro. Soc. London Jour. ser. 3 (50), p. 81, pl. 3, fig. 36-40.

*B. pseudopunctata* Höglund, Feyling-Hanssen, 1964, Norges Geologiske Undersøkelse, NR225, p. 319, pl. 16, fig. 7.

= *B. pseudopunctata*, Höglund, 1947, Zool. Bidrag fran Uppsala 26, p. 273, pl. 24, fig. 5, pl. 32, fig. 23-24.

*B. subaenariensis* Cushman, Parker, Frances, 1952, Bull. Mus. Comp. Zool. 106 (9), p. 414, pl. 5, fig. 22.

= *B. subaenariensis*, Cushman, 1922, U.S. Nat. Mus. Bull. 104, pt. 3, p. 46, pl. 7, fig. 6.

*Buccella frigida* (Cushman), Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 115, pl. 22, fig. 2s.

= *Pulvinulina frigida*, Cushman, 1922, Contr. Can. Biol. No. 9, p. 12 (144).

*B. inusitata* Anderson, Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 116, pl. 22, fig. 1.

= *B. inusitata*, Anderson, 1952, J. Wash. Acad. Sci., vol. 42 (5), p. 148, fig. 10, 11.

*Buliminella elegantissima* (d'Orbigny), Parker, Frances, 1952, Bull. Mus. Comp. Zool. 106 (9), p. 416, pl. 5, fig. 27-28.

= *Bulimina elegantissima*, d'Orbigny, 1839, Voy. dans l'Amer. merid., foram. vol. 5, pt. 5, p. 51, pl. 7, fig. 13, 14.

*Cassidella complanata* (Egger), Parker, Frances, 1952, Bull. Mus. Comp. Zool. 106 (9), p. 417, pl. 6, fig. 1-2.

= *Virgulina schreibersiana* Cziczek. var. *complanata*, Egger, 1895, K. bayer Akad., Wiss, Math-physik. Cl., Abh, Munhen, Deutschland, bd. 18 abth. 2 (1893), p. 192, pl. 3, fig. 91-92.

*Cibicides lobatulus* (Walker & Jacob), Feyling-Hanssen, 1964, Norges Geologiske Undersøkelse, NR225, p. 339, pl. 19, fig. 1-3.

= *Nautilus lobatulus*, Walker & Jacob, 1798, in G. ADAMS: Essays on the Microscope, p. 642, pl. 14, fig. 36.

*Cribrostomoides crassimargo* (Norman), Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 29, pl. 3, fig. 1-3.

= *Nonionina jeffreysi*, Williamson, 1858, Rec. Foram. Grt. Brit., p. 34, fig. 72, 73.

*Cyclogyra foliacea* (Philippi), Cushman, 1948, Cushman Lab. Foram. Res. Spec. Publ. 23, p. 40, pl. 4, fig. 9, 10.

= *Cornuspira foliacea* (Philippi), Church, J. Paleo. 3 (1929), p. 303.

*C. involvens* (Reuss), Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 49, pl. 7, fig. 4-5.

= *Operculina involvens*, Reuss, 1850, Denkschr. Akad. Wiss. Wien, vol. II, p. 370, pl. 46, fig. 30.

*Dentalina frobisherensis* Loeblich & Tappan, Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 55, pl. 10, fig. 1-9.

= *Nodosaria mucronata* (Neugeboren), Cushman, 1923, U.S. Nat. Mus. Bull. 104 (4), p. 80, pl. 12, fig. 5-7; Pl. 13, fig. 7-9.

*D. ittai* Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 56, pl. 10, fig. 10-12.

= *D. cf. Calomorpha* (Reuss) Cushman, 1948, Cushman Lab. Foram. Res. Spec. Publ. 23, p. 44, pl. 5, fig. 4, 5.

*Eggerella advena* (Cushman), Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 36, pl. 3, fig. 8-10.

= *Verneuilina advena*, Cushman, 1922, Contr. Can. Biol. no. 9 (1921), p. 141.

*Elphidiella arctica* (Parker & Jones), Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 106, pl. 20, fig. 1-3.

= *Polystomella arctica*, Parker & Jones, 1864, in BRADY, Trans. Linn. Soc. London, Zool., vol. 24, p. 471, pl. 48, fig. 18.

*Elphidium bartletti* Cushman, Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 96, pl. 18, fig. 10-14.

= *E. bartletti*, Cushman, 1933, Smithson. Misc. Coll. 89 (9), p. 4, pl. 1, fig. 9.

*E. frigidum* Cushman, Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 99, pl. 18, fig. 4-9.

= *E. frigidum*, Cushman, Smithson. Misc. Coll. 89 (9), p. 5, pl. 1, fig. 3.

*E. incertum/clavatum* complex, Feyling-Hanssen, 1964, Norges Geol. Undersøkelse NR225, pp. 344-345, pl. 19, fig. 16, 17; p. 120, fig. 9-15.

= *E. incertum clavatum* Cushman, 1931, U.S. Nat. Mus. Bull. 104 (7), p. 20, pl. 7, fig. 10.

= *Polystomella umbilicata* var. *incerta*, Williamson, 1858, Rec. Foram. Gr. Bri., p. 44, pl. 3, fig. 82a.

*Elphidium margaritaceum* Cushman, Parker, Frances, 1952, Bull. Mus. Comp. Zool. 106 (9), p. 411, pl. 5, fig. 4.

= *E. advenum* (Cushman) var. *margaritaceum*, Cushman, 1930, U.S. Nat. Mus. Bull. 104 (4), p. 25, pl. 10, fig. 3.

*E. subarcticum* Cushman, Feyling-Hanssen, 1964, Norges Geol. Undersøkelse, NR225, p. 347, pl. 20, fig. 17-19.

= *E. subarcticum* Cushman, 1944, Cushman Lab. Foram. Res. Spec. Publ. 12, p. 27, pl. 3, fig. 34-35.

*Eoeponidella pulchella* (F. Parker), Parker, Frances, 1952, Bull. Mus. Comp. Zool. 1006 (9), p. 420, pl. 6, fig. 18-20.

= *Pninanaella pulchella*, Parker, Frances, 1952, Bull. Mus. Comp. Zool. 106 (9), p. 420, pl. 6, fig. 18-20.

*Esosyrinx curta* (Cushman & Ozawa), Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 85, pl. 15, fig. 1-5.

= *Pseudopolymorphina curta*, Cushman & Ozawa, 1930, Proc. U.S. Nat. Mus., vol. 77 (6), p. 105, pl. 27, fig. 3.

*Fissurina cucurbitasema* Loeblich & Tappan, Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 76, pl. 14, fig. 10, 11.

= *F. cucurbitasema*, Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 76, pl. 14, fig. 10, 11.

*F. lucida* (Williamson), Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 76, pl. 14, fig. 4.

= *Entosolenia marginata* (Montagu) var. *lucida* Williamson, 1848, Ann. Mag. Nat. Hist. ser. 2, vol. 1, p. 17, pl. 2, fig. 17.

*F. marginata* (Montagu), Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 77, pl. 14, fig. 6-9.

= *Vermiculum marginatum*, Montagu, 1803, Testacea Britannica, p. 524.

*Glabratella wrightii* (Brady), Leslie, 1965, B.I.O. Rep. 65-6, p. 161, pl. 10, fig. 7.

= *Discorbina wrightii*, Brady, 1881, Quart. J. Micr. Sci. 21, p. 413, pl. 21, fig. 6.

*Glandulina laevigata* d'Orbigny, Feyling-Hanssen, 1971, Bull. Geol. Soc. Denmark, vol. 21, p. 220, pl. 5, fig. 12.

= *Nodosaria (Glandulina) laevigata* d'Orbigny, 1826, Ann. Sci. Nat. Paris ser. 1 (7), p. 252, pl. 10, fig. 1-3.

*Globobulimina auriculata* (Bailey) forma cf. *arctica* Höglund, Feyling-Hanssen, 1971, Bull. Geol. Soc. Denmark, vol. 21, p. 236, pl. 6, fig. 22.

= *G. auriculata* (Bailey) forma *arctica* Höglund, 1947, Zool. Bidrag fran Uppsala 26, p. 254, test fig. 266, 267, 270, 271.

*Glomospira gordialis* (Jones & Parker), Parker, Frances, 1952, Bull. Mus. Comp. Zool. 106 (9), p. 398, pl. 2, fig. 6.

= *Trochammina squamata* var. *gordialis*, Jones & Parker, 1860, Quar. J. Geol. Soc., vol. 16, p. 304.

*Gordiospira arctica* Cushman, Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 49, pl. 7, fig. 1-3.

= *G. arctica* Cushman, 1933, Smithson. Misc. Coll. 89 (9), p. 3, pl. 1, fig. 5-7.

*Hemisphaerammina*, Loeblich & Tappan, 1964, Treatise Invert. Paleo. 2 (1), C202.

*Hippocrepina indivisa* Parker, Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 20, pl. 1, fig. 13.

= *H. indivisa*, Parker, 1870, in Dawson, CAN. NAT., n.s., vol. 5, p. 176, fig. 2.

*Hyperammina elongata* Brady, Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 19, pl. 1, fig. 6.

= *H. elongata*, Brady, 1878, Ann. Mag. Nat. Hist. ser. 5, vol. 1, p. 433, pl. 20, fig. 2a,b.

*H. subnodosa* Brady, Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 19, pl. 1, fig. 7-12.

= *H. subnodosa*, Brady, 1884, Rep. Voy. Challenger vol. 9 (Zool.), p. 259, pl. 23, fig. 11-14.

*Islandiella islandica* (Nørvang), Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 118, pl. 24, fig. 1.

= *Cassidulina islandica* Nørvang, 1945, Zool. of Iceland, vol. 2 (2), p. 41, text fig. 7, 8d.

*I. norcrossi* (Cushman), Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 120, pl. 24, fig. 2.

= *Cassidulina norcrossi*, Cushman, 1933, Smithson. Misc. Coll. 89 (9), p. 7, pl. 2, fig. 7 a-c.

*I. teretis* (Tappan), Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 121, pl. 24, fig. 3, 4.

= *Cassidulina laevigata*, d'Orbigny, Brady, 1884, Rep. Voy. Challenger, vol. 9 (Zool.), p. 428, pl. 54, fig. 1-3.

*Lagena apiopleura* Loeblich & Tappan, Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 59, pl. 10, fig. 14-15.

= *L. apiopleura*, Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 59, pl. 10, fig. 14-15.

*L. gracilis* Williamson, Feyling-Hanssen, 1964, Norges Geol. Undersøkelse NR225, p. 287, pl. 11, fig. 10.

= *L. gracilis* Williamson, 1848, Ann. Mag. Nat. Hist. ser. 2 (1), p. 13, pl. 1, fig. 5.

*L. gracillima* (Seguenza), Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 60, pl. 11, fig. 1-4.

= *Amphorina gracillima*, Seguenza, 1862, Messina. Diss. 2, p. 51, pl. 1, fig. 37.

*L. laevis* (Montagu), Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 61, pl. 11, fig. 5-8.

= *Vermiculum laeve*, Montagu, 1803, Testacea Britannica, p. 524.

*L. meridionalis* Wiesner, Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 62, pl. 12, fig. 1.

= *L. caudata* (d'Orbigny), Parker & Jones, 1865, Philos. Trans. Roy. Soc. London, vol. 155, p. 352, pl. 16, fig. 7.

*L. mollis* Cushman, Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 63, pl. 11, fig. 25-27.

= *L. gracillima* (Seguenza) var. *mollis* Cushman, 1944, Cushman Lab. Foram. Res. Spec. Publ. 12, p. 21, pl. 3, fig. 3.

*L. nebulosa* Cushman, Feyling-Hanssen, 1964, Norges Geol. Undersøkelse NR225, p. 291, pl. 12, fig. 1.

= *L. laevis* (Montagu) Brady, 1884, Rep. Challenger, pl. 56, fig. 12.

*L. parri* Lieblich & Tappan, Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 64, pl. 11, fig. 11-13.

= *L. parri* Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 64, pl. 11, fig. 11-13.

*L. semilineata* Wright, Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 65, pl. 11, fig. 14-22.

= *L. semilineata*, Wright, 1886, Proc. Belfast N. Field Cl., n.s., vol. 1, app. 9, p. 320, pl. 26, fig. 7.

*L. striata* (d'Orbigny) forma *typica*, Feyling-Hanssen, 1964, Norges Geol. Undersøkelse NR225, p. 293, pl. 12, fig. 4, 5.

= *Oolina striata*, d'Orbigny, 1839, Voy. dans l'Amer. mer Foram. vol. 5 (5), Atlas vol. 9, p. 21, pl. 5, fig. 12.

*Laryngosigma hyalascidia* Loeblich & Tappan, Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 83, pl. 15, fig. 6-8.

= *L. hyalascidia*, Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 83, pl. 15, fig. 6-8.

*Miliammina fusca* (Brady), Parker, Frances, Bull. Mus. Comp. Zool. 106 (9), p. 404, pl. 3, fig. 15, 16.

= *Quinqueloculina fusca*, Brady, 1870, Ann. Mag. Nat. Hist. series 4, vol. 6, p. 47 (286), pl. 11, fig. 2a-c, 3.

*Miliolinella chukehiensis* Loeblich & Tappan, Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 47, pl. 6, fig. 7.

= *M. chukchiensis*, Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 47, pl. 6, fig. 7.

*M. subrotunda* (Montagu), Feyling-Hanssen, 1964, Norges Geol. Undersøkelse NR225, p. 261, pl. 7, fig. 1.

= *Serpula subrotunda dorso elevata*, Walker & Boys, 1784, p. 2, pl. 1, fig. 4.

*Nodosaria emphysaocyta* Loeblich & Tappan, Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 58, pl. 9, fig. 16-17.

= *N. emphysaocyta* Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 58, pl. 9, fig. 16-17.

*Nonionella atlantica* Cushman, Parker, Frances, Bull. Mus. Comp. Zool. 106 (10), p. 453, pl. 3, fig. 15 a,b.

= *N. atlantica*, Cushman, 1947, Contr. Cushman Lab. Foram. Res. 23 (4), p. 90, pl. 20, fig. 4, 5.

*N. auricula* Heron-Allen & Earland, Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 92, pl. 16, fig. 6-10.

= *N. auricula*, Heron-Allen & Earland, 1930, J. Roy. Micr. Soc., vol. 50, p. 192, pl. 5, fig. 68-70.

*Nonionellina labradorica* (Dawson), Loeblich & Tappan, 1964, Protista 2 (2) C748, pl. 61, fig. 2-5.

= *Nonionina labradorica*, Dawson, 1860, CAN. NAT., vol. 5, p. 191, fig. 4.

*Oolina borealis* Loeblich & Tappan, Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 68, pl. 13, fig. 4-6.

= *Entosolenia costata* Williamson, 1858, Rec. Forams Gr. Brit., p. 9, pl. 1, fig. 18.

*O. lineata* (Williamson), Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 70, pl. 3, fig. 11-13.

= *Entosolenia lineata*, Williamson, 1848, Ann. Mag. Nat. Hist., ser. 2, vol. 1, p. 18, pl. 2, fig. 18.

*O. melo* d'Orbigny, Loeblich & Tappan, 1953, Smithson. Mis. Coll. 121 (7), p. 73, pl. 13, fig. 9, 10.

= *O. melo*, d'Orbigny, 1839, vol. 5, pt. 5, p. 20, pl. 5, fig. 9.

*O. squamosa* (Montagu), Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 73, pl. 13, fig. 9, 10.

= *Vermiculum squamosum*, Montagu, 1893, Testacea Britannica, p. 526, pl. 14, fig. 2.

*Parafissurina himatiostoma* Loeblich & Tappan, Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 80, pl. 14, fig. 12-14.

= *P. himatiostoma* Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 80, pl. 14, fig. 12-14.

*Patellina corrugata* Williamson, Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 114, pl. 21, fig. 4-5.

= *P. corrugata*, Williamson, 1858, Rec. Forams. Gr. Brit., p. 46, pl. 3, fig. 86-89.

*Pateoris hauerinoides* (Rhumbler), Feyling-Hanssen, 1964, Norges Geol. Undersøkelse NR225, p. 256, pl. 6, fig. 5.

= *Miliolina seminulum* (Linné) var. *disciformis* (Macgillivray) Williamson, 1858, Rec. Foram. Gr. Brit., p. 86, p. 7, fig. 188-189.

*Protelphidium orbiculare* (Brady), Feyling-Hanssen, 1964, Norges Geol. Undersøkelse NR225, p. 349, pl. 21, fig. 3.

= *Nonionia orbicularis*, Brady, 1881, vol. 43, pt. 415, pl. 21, fig. 5.

*Pseudopolymorphina novangliae* (Cushman), Parker, Frances, 1952, Bull. Mus. Comp. Zool. 106 (10), p. 455, pl. 3, fig. 11, 12.

= *Polymorphina lactea* (Walker & Jacob) var. *novangliae*, Cushman, 1923, U.S. Nat. Mus. Bull. 104 (4), p. 146, pl. 39, fig. 6-8.

*Pyrgo comata* (Brady), Feyling-Hanssen, 1964, Norges Geol. Und. NR225, p. 264, pl. 7, fig. 7.

= *Biloculina comata*, Brady, 1884, Rep. Challenger, p. 144, pl. 3, fig. 9.

*Pyrgo williamsoni* (Silvestri), Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 48, pl. 6, fig. 1-4.

= *Biloculina ringens* (Lamarck) *typica*, Williamson, 1858, Rec. Foram. Gr. Bri., p. 79, pl. 6, fig. 169-170; pl. 7, fig. 171.

*Pyrulina fusiformis* (Roemer), Barker, 1960, Soc. Econ. Pal. & Min., Spec. Publ. 9, pl. 71, fig. 17-19.

= *Polymorphina (Globulina) fusiformis*, Roemer, 1838, Neues Jahrb. Min. Geogn. Geol. Petrel.-Kunde, p. 386, pl. 3, fig. 37a-b.

*Quinqueloculina agglutinata* Cushman, Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 39, pl. 5, fig. 1-4.

= *Q. agglutinata* Cushman, 1917, U.S. Nat. Mus. Bull. 71, pt. 6, p. 43, pl. 9, fig. 2.

*Q. arctica* Cushman, Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 40, pl. 5, fig. 11-12.

= *Q. arctica*, Cushman, 1933, Smithson. Misc. Coll. 89 (9), p. 2, pl. 1, fig. 3a-c.

*Q. seminulum* (Linné) Parker, Frances, 1952, Bull. Mus. Comp. Zool. 106 (10), p. 456, pl. 2, fig. 7 a,b.

= *Serpula seminulum*, Linné, 1758, Systema Natura, ed. 10, p. 786.

*Q. jugosa* Cushman, Parker, Frances, 1952, Bull. Mus. Comp. Zool. 106 (10), p. 456, pl. 2, fig. 8a,b.

= *Q. seminula* (Linné) var. *jugosa* Cushman, 1944, Cushman Lab. Foram. Res. Spec. Publ. 12, p. 13, pl. 2, fig. 15.

*Q. stalkeri* Loeblich & Tappan, Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 40, pl. 5, fig. 5-9.

= *Q. fusca*, Brady, Cushman, 1948, Cushman Lab. Foram. Res. Spec. Publ. 23, p. 33, pl. 3, fig. 16, 17.

*Rectoglandulina torrida* (Cushman), Barker, 1960, Soc. Econ. Pal. & Min. Spec. Publ. 9, pl. 61, fig. 20-22.

= *Nodosaria (Glandulina) laevigata* d'Orbigny var. *torrida*, Cushman, 1923, U.S. Nat. Mus. Bull. 104, p. 65, pl. 12, fig. 10.

*Recurvoides contortus* Earland, Vilks, 1969, Micropaleo. 15 (1), p. 45, pl. 1, fig. 18 ( $\equiv$  *C. subglobosum*).

= *R. contortus*, Earland, 1934, Discovery Reports VII, no. 112, pl. III, fig. 11, 12.

*R. turbinatus* (Brady), Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 27, pl. 2, fig. 11.

= *Haplophragmium turbinatum*, Brady, 1881, Quart. Jour. Micro. Soc. n.s., vol. 21, p. 50.

*Reophax arctica* Brady, Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 21, pl. 1, fig. 19-20.

= *R. arctica*, Brady, 1881, Ann. Mag. Nat. Hist. ser. 5, vol. 8, p. 405, pl. 21, fig. 2a, b.

*R. dentaliniformis* H. Brady, Parker, Frances, 1952, Bull. Mus. Comp. Zool. 106 (10), p. 457, pl. 1, fig. 19.

= *R. dentaliniformis*, Brady, 1881, Quar. J. Micr. Soc., vol. 21, p. 49.

*R. fusiformis* (Williamson), Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), pp. 22, 23, 24, pl. 2, fig. 1-4, 7-10.

= *R. scorpiurus*, Montfort, 1808, Conchyliologie systematique ..., vol. 1, p. 330.

= *R. curtus*, Cushman, 1920, U.S. Nat. Mus. Bull. 104 (2), p. 8, pl. 2, fig. 2, 3.

= *R. subfusiformis*, Earland, Höglund, 1947, Zool. Bidrag. Uppsala 26, p. 82, pl. 9, fig. 1, 2, 4, pl. 26, fig. 1-36.

*R. gracilis* (Kiaer), Parker, Frances, 1952, Bull. Mus. Comp. Zool. 106 (9), p. 397, pl. 2, fig. 1.

= *Nodulina gracilis*, Kiaer, 1900, Rept. Norw. Fish. Mar. Invest., vol. 1 (7), p. 24, 2 test fig.

*R. nodulosus* Brady, Barker, 1960, Soc. Econ. Pal. & Min., spec. publ. 9, pl. 31, fig. 1-9.

= *Reophax nodulosus*, Brady, 1879, Quar. J. Micr. Sci., n.s., vol. 21, p. 52, pl. 4, fig. 7-8.

*R. pilulifera* Brady, Feyling-Hanssen, 1964, Norges Geol. Und. NR225, p. 222, pl. 1, fig. 13.

= *R. pilulifera*, Brady, 1884, Rep. Chall., vol. 9 (Zool), p. 292, pl. 30, fig. 18-20.

*R. scottii* Chaster, Parker, Frances, 1952, Bull. Mus. Comp. Zool. 106 (9), p. 397, pl. 2, fig. 2.

= *R. scotti*, Chaster, 1890, 1st Rept. Son. Soc. Nat. Sci., p. 57, pl. 1, fig. 1.

*Robertinoides charlottensis* (Cushman), Parker, Frances, 1952, Bull. Mus. Comp. Zool. 106 (9), p. 416, pl. 5, fig. 30a, b.

= *Cassidulina charlottensis*, Cushman, 1925, Cushman Lab. Foram. Res. 1 (pt. 2), p. 41, pl. 6, fig. 6-7.

*Rosalina floridana* (Cushman), Parker, Phleger & Perison, 1953, Cushman Found. Foram. Res. spec. publ. 2, p. 7, pl. 4, fig. 18, 19.

= *Discorbis floridana*, Cushman, 1922, Publ. 311, Carnegie Instit. Washington, p. 39, pl. 5, fig. 11, 12.

*Saccammina atlantica* (Cushman), Parker, Frances, 1952, Bull. Mus. Comp. Zool. 106 (10), p. 454, pl. 1, fig. 1-2.

= *Proteonina atlantica*, Cushman, 1944, Cushman Lab. Foram. Res. spec. publ. 12, p. 5, pl. 1, fig. 4.

*S. sphaerica* Brady, Barker, 1960, Soc. Econ. Pal. & Min. spec. publ. 9, pl. 18, fig. 11-15, 17.

= *S. sphaerica*, Brady, 1871, Ann. Mag. Nat. Hist. ser. 4, vol. 7, p. 183.

*Sigmoilopsis schlumbergeri* (Silvestri), Barker, 1960, Soc. Econ. Pal. & Min. spec. publ. 9, pl. 8, fig. 1-4.

= *Sigmoilina schlumbergeri*, Silvestri, 1904, Mem. Pont. Nuovi Lincei, vol. 22, p. 267.

*Silicosigmoilina groenlandica* (Cushman), Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 38, pl. 4, fig. 7-9.

= *Quinqueloculina fusca* Brady var. *groenlandica*, Cushman, 1933, Smithson. Misc. Coll. 89 (9), p. 2, pl. 1, fig. 4.

*Spiroplectammina biformis* (Parker & Jones), Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 34, pl. 4, fig. 1-6.

= *Textularia agglutinata* d'Orbigny var. *biformis*, Parker & Jones, Phil. Trans. Roy. Soc., vol. 155, p. 370, pl. 15, fig. 23, 24.

*Technitella legumen* Norman, Barker, 1960, Soc. Econ. Pal. & Min. spec. publ. 9, pl. 25, fig. 8-12.

= *T. legumen*, Norman, 1878, Ann. Mag. Nat. Hist. ser. 5, vol. 1, p. 279, pl. 16, fig. 3, 4.

*Textularia earlandi* Phleger, Feyling-Hanssen, 1964, Norges Geol. Und. NR225, p. 238, pl. 3, fig. 9-10.

= *T. earlandi*, Phleger, 1952, Contr. Cushman Found. Foram. Res., vol. 3, p. 86, pl. 13, fig. 22, 23.

*T. torquata* F. Parker, Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 25, pl. 2, fig. 19-21.

= *T. torquata*, F. Parker, 1952, Bull. Mus. Comp. Zool. 106 (9), p. 403, pl. 3, fig. 9-11.

*Trifarina fluens* (Todd), Feyling-Hanssen, 1971, Bull. Geol. Soc. Denmark, vol. 21 (pt. 2-3), p. 242, pl. 7, fig. 12-15; pl. 18, fig. 10.

= *Angulogerina fluens*, Todd, 1947, Contr. Cushman Lab. Foram. Res. 23 (3), p. 67, pl. 16, fig. 6, 7.

*Triloculina oblonga* (Montagu), Feyling-Hanssen, 1964, Norges Geol. Und. NR225, p. 257, pl. 6, fig. 9-10.

= *Vermiculum oblongum*, Montagu, 1803, Test. Brit., pt. 2, p. 522, pl. 14, fig. 9.

*T. tricarinata* d'Orbigny, Feyling-Hanssen, 1964, Norges Geol. Und. NR225, p. 258, pl. 6, fig. 7, 8.

= *T. tricarinata*, d'Orbigny, 1826, Ann. Sci. Nat., vol. 7, p. 299, no. 7, modèle no. 94.

*T. trigonula* (Lamarck), Feyling-Hanssen, 1964, Norges Geol. Und. NR225, p. 258, pl. 6, fig. 11-13.

= *Miliolites (trigonula)* Lamarck, 1804, Ann. Mus. (vol. 5, 8, 9), p. 351, no. 3, pl. 17, fig. 4.

*T. trihedra* Loeblich & Tappan, Feyling-Hanssen, 1964, Norges Geol. Und. NR225, p. 259, pl. 6, fig. 6.

=*T. trihedra*, Loeblich & Tappan, 1953, Smithson. Misc. Coll. 121 (7), p. 45, pl. 4, fig. 10.

*Trochammina inflata* (Montagu), Parker, Frances, 1952, Bull. Mus. Comp. Zool. 106 (9), p. 407, pl. 4, fig. 6-10.

= *Nautilus inflatus*, Montagu, 1808, Test. Brit. suppl., p. 91, pl. 18, fig. 3.

*T. lobata* Cushman, Parker, Frances, 1952, Bull. Mus. Comp. Zool. 106 (9), p. 408, pl. 4, fig. 7a, b.

= *T. lobata*, Cushman, 1944, Cushman Lab. Foram. Res. spec. publ. 12, p. 18, pl. 2, fig. 10.

*T. macrescens* Brady, Parker, Frances, 1952, Bull. Mus. Comp. Zool. 106 (9), p. 408, pl. 4, fig. 8a, b.

= *T. inflata* (Montagu) var. *macrescens*, Brady, 1871, Ann. Mag. Nat. Hist. ser. 4, vol. 6, p. 51, pl. 11, fig. 5a-c.

*T. ochracea* (Williamson), Feyling-Hanssen, 1964, Norges Geol. Und. NR225, p. 220, pl. 13, fig. 11, 12.

= *Rotalia ochracea* Williamson, 1858, Rec. Foram. Gr. Brit., p. 55, pl. 4, fig. 112; pl. 5, fig. 113.

*T. squamata* Parker & Jones, Parker, Frances, 1952, Bull. Mus. Comp. Zool. 106 (9), p. 408, pl. 4, fig. 11-16.

= *T. squamata*, Parker & Jones, 1865, Phil. Trans. Roy. Soc. London, vol. 155, p. 407, pl. 15, fig. 30, 31a-c.



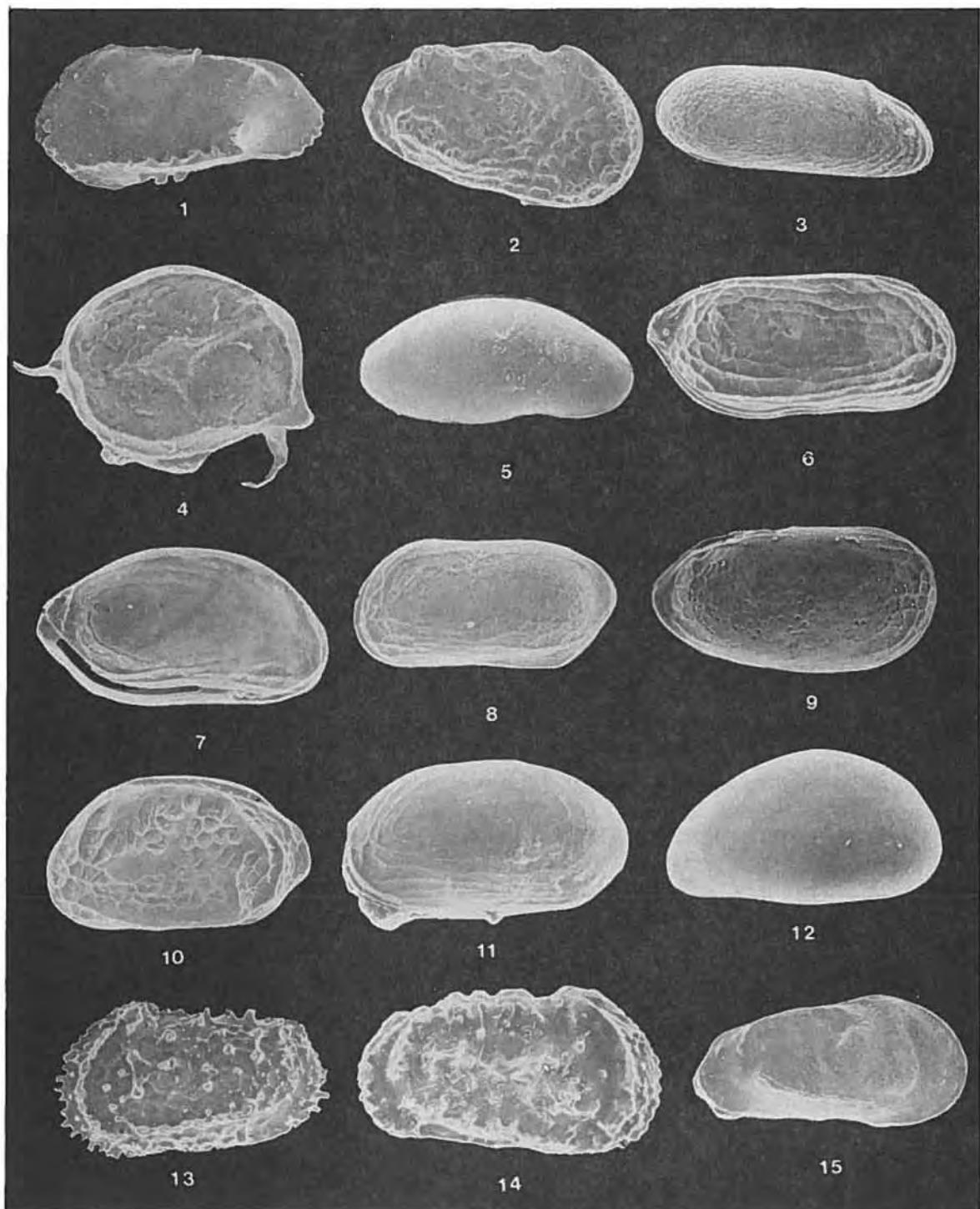
OSTRACODS

The ostracod fauna of the Strait of Canso and adjoining waters is sparse and composed mostly of juveniles or small adults. The waters from the causeway south to Eddy Point are almost completely barren of specimens. The faunal group is Shelf in nature.

## Plate 13. Ostracoda

Brachocytheridae, Cytherideidae, Cytheruridae, Paradoxostomatidae,  
 Progonocytheridae, Sarsiellidae, Trachyleberididae, Xestoeberididae

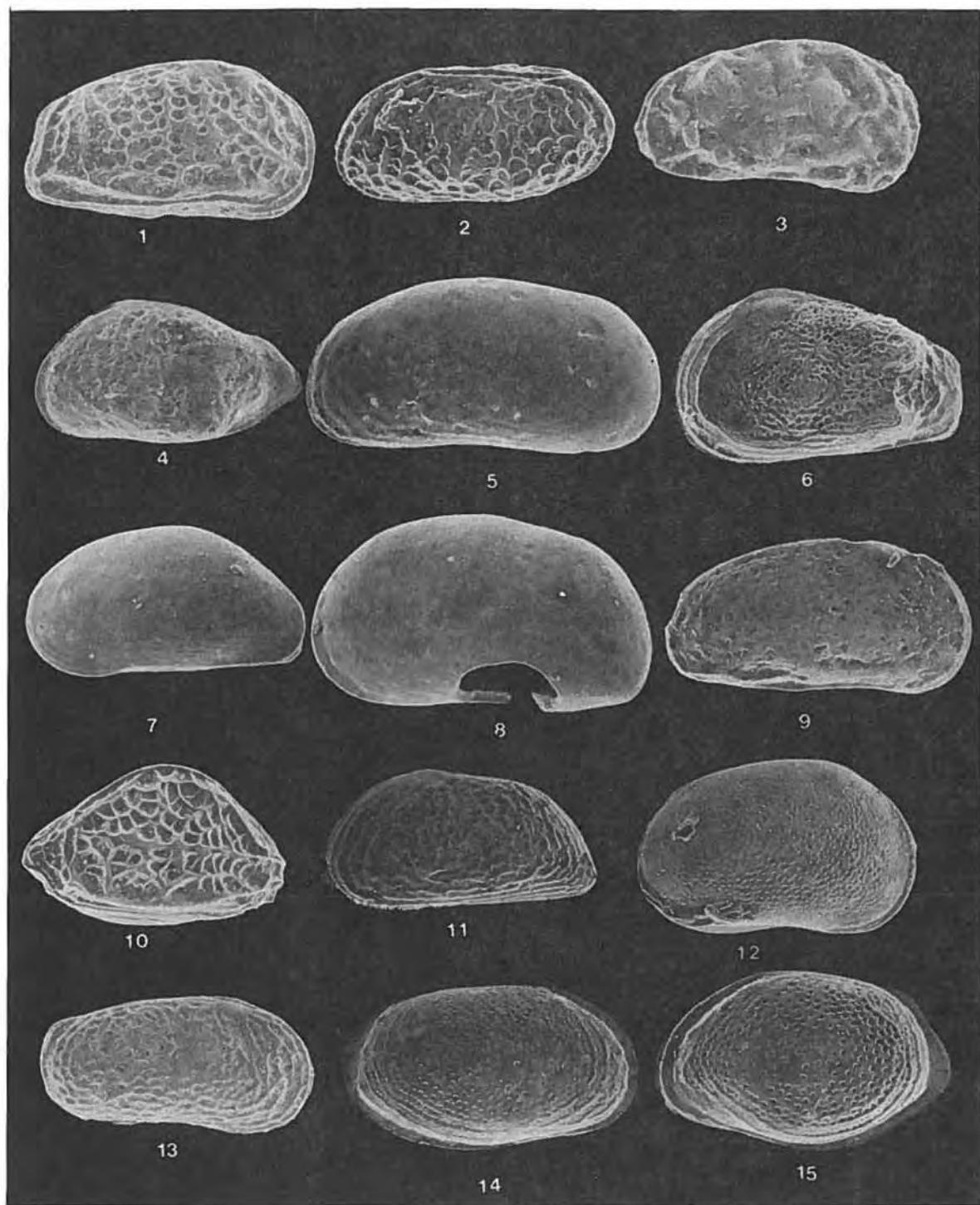
1.	<i>Pterygocythereis inexpectata</i> (Blake)	x49
2.	<i>Robertsonites</i> sp.	x32
3.	<i>Sahnia foveolata</i> (Brady)	x54
4.	<i>Sarsiella zostoericola</i> (Cushman)	x54
5.	<i>Sclerochilus contortus</i> (Norman)	x54
6.	<i>Semicytherura wardensis</i> Howe & Brown	x81
7.	<i>Semicytherura</i> sp. A.	x97
8.	<i>Semicytherura</i> sp. B.	x70
9.	<i>Semicytherura</i> sp. S.	x92
10.	<i>Semicytherura</i> sp. U.	x76
11.	<i>Semicytherura</i> sp. X.	x97
12.	<i>Xestoleberis</i> sp.	x81
13.	<i>Acanthocythereis dunelmenis</i> (Norman)	x49
14.	<i>Actinocythereis dawsoni</i> (Brady)	x54
15.	<i>Actinocythereis</i> sp.	x65



## Plate 14. Ostracoda

Leptocytheridae, Cytheruridae, Cytherideidae,  
 Hemicytheridae, Loxoconchidae

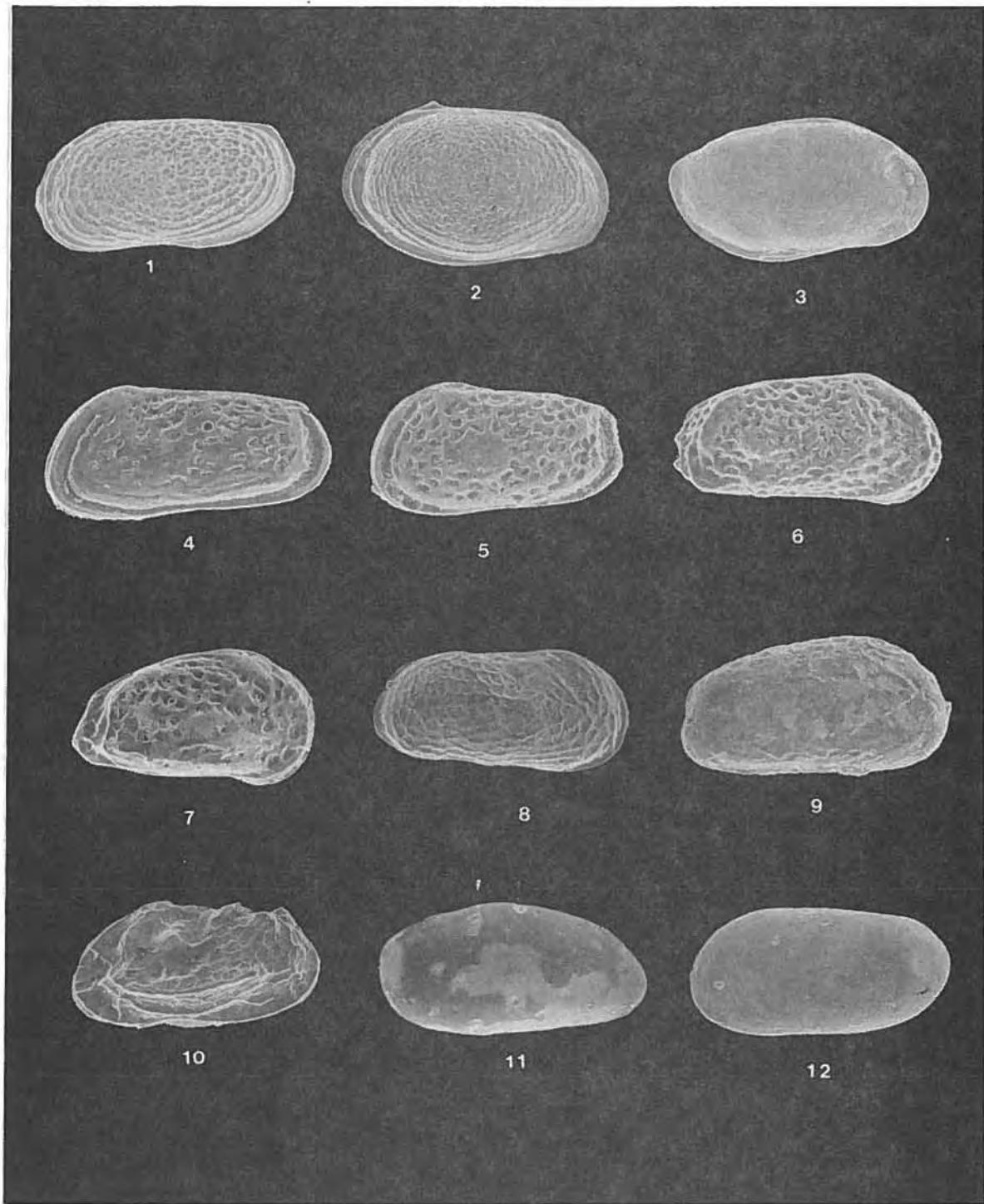
1.	<i>Baffinicythere emarginata</i> (Sars)	x56
2.	<i>Bensonocythere</i> sp.	x84
3.	<i>Callistocythere</i> sp.	x101
4.	<i>Cytheropteron pyramidale</i> (Brady)	x78
5.	<i>Cushmanidea seminuda</i> (Cushman)	x56
6.	<i>Elofsonella concinna</i> (Jones)	x73
7.	<i>Eucythere declivis</i> (Norman)	x73
8.	<i>Eucytheridea bradii</i> (Norman)	x56
9.	<i>Hemicythere villosa</i> (Sars)	x73
10.	<i>Hemicytherura clathrata</i> (Sars)	x73
11.	<i>Heterocyprideis sorbyana</i> (Jones)	x36
12.	<i>Hirshmannia viridis</i> (Müller)	x94
13.	<i>Leptocythere nikraveshae</i> Morales	x87
14.	<i>Loxoconcha granulata</i> Sars	x73
15.	<i>Loxoconcha impressa</i> (Baird)	x62



## Plate 15. Ostracoda

Loxoconchidae, Pectocytheridae, Hemicytheridae, Trachyleberididae,  
 Schizocytheridae, Paradoxostomidae, Cytherettidae

1.	<i>Loxoconcha sperata</i> Williams	X56
2.	<i>Loxoconcha n.</i> sp. A. male	X56
3.	<i>Loxoconcha n.</i> sp. R. male	X56
4.	<i>Muellerina canadensis</i> (Brady)	X56
5.	<i>Muellerina lienenklausi</i> (Ulrich & Bassler)	X56
6.	<i>Munseylla mananensis</i> Hazel & Valentine	X56
7.	<i>Nereina angulata</i> Sars	X56
8.	<i>Neolophocythere subquadrata</i> Grossman	X84
9.	<i>Normanicythere leioderma</i> (Norman)	X34
10.	<i>Palmenella limicola</i> (Norman)	X70
11.	<i>Paradoxostoma</i> sp.	X70
12.	<i>Pseudocytheretta adwardsi</i> (Cushman)	X34



OSTRACOD FAUNAL LIST

*Acanthocythereis dunelmensis* (Norman), Hazel, J.E., 1973, personal communication, U.S.G.S.

= *Cythere dunelmensis* Norman, 1865, Brit. Assoc. Adv. Sci. rept. 34th. Mtg., p. 193.

*Actinocythereis dawsoni* (Brady), Valentine, P.C., 1971, Geol. Surv. Prof. Paper 683-D, pl. 1, fig. 35.

= *Cythere dawsoni* Brady, 1870, Annals & Mag. Nat. Hist. 4th ser., vol. 6, p. 453, pl. 19, fig. 8-10.

*Baffinicythere costata* (Brady), Hazel, J.E., 1967, Geol. Surv. Prof. Paper 564, pl. 2, fig. 7, 12-15.

= *Cythere costata* Brady, 1866, Zool., Soc. London Trans. vol. 5, p. 375, pl. 60, fig. 5a-f.

*Cushmanidea seminuda* (Cushman), Valentine, P.C., 1971, Geol. Surv. Prof. Paper 683-D, pl. 1, fig. 34, 38.

= *Cytheridea seminuda* Cushman, 1906, Boston Soc. Nat. Hist. Proc., vol. 32, p. 374, pl. 33, fig. 62-64, pl. 34, fig. 76-77.

*Cytheropteron pyramidale* (Brady), Valentine, P.C., 1971, Geol. Surv. Prof. Paper 683-D, pl. 3, fig. 37, 41.

= *C. pyramidale* (Brady), Valentine, 1971, Geol. Surv. Prof. Paper 683-D, p. 13.

*Elofsonella concinna* (Jones), Hazel, J.E., 1967, Geol. Surv. Prof. Paper 564, pl. 4, fig. 10, 11, 13.

= *Cythere concinna* Jones, 1857, A Monograph of the Tertiary Entomostraca, p. 29, pl. 4, fig. 7a-f.

*Eucythere declivis* (Norman), Valentine, P.C., 1971, Geol. Surv. Prof. Paper 683-D, pl. 2, fig. 30, 35.

= *Cythere declivis* Norman, 1865, Nat. Hist. Trans. Northumberland & Durham, vol. 1, p. 16, pl. 5, fig. 9-12.

*Eucytheridea bradii* (Norman), Hazel, J.E., 1973, personal communication, U.S.G.S.

= *Cythere bradii* Norman, 1865 in Brady, British Assoc. Adv. Sci. Rept. (London 1865) 34th, p. 192.

*Hemicythere villosa* (Sars), Hazel, J.E., 1967, Geol. Surv. Prof. Paper 564, pl. 2, fig. 4.

= *Cythere villosa* Sars, 1865, Förh., VidenskSelsk., Krist., p. 42.

*Hemicytherura clathrata* Sars), Wagner, C.W., 1957, Sur les Ostracodes de Quaternaire Récent des Pays-Bas et leur, Utilization dans l'étude Géologique des Dépôts Holocènes, p. 229, pl. 35, fig. 1-5.

- = *Cytherura clathrata* Sars, 1865, Förh., VidenskSelsk., Krist., p. 77.
- Heterocyprideis sorbyana* (Jones), Halings, N.C., 1967, Crustaceana, vol. 13, pt. 3, pl. IV, fig. 3, 4.
- = *Cytheridea sorbyana* Jones, 1856, Paleont. Soc. London, p. 44, pl. 4, fig. 60-62.
- Hirschmannia viridis* (Miller), Wagner, C.W., 1957, Sur les Ostracodes de Quaternaire Récent des Pays-Bas et leur Utilization dans l'étude Géologique des Dépôts Holocènes, p. 216, pl. 29, fig. 1-5.
- = *Cythere viridis* Miller, in Brady, 1868, Trans. Linn. Soc. London, vol. 26, 2nd pt., p. 397, pl. 28, fig. 40, 41, 57-59; pl. 38, fig. 8.
- Leptocythere nikraveshae* Morales, Valentine, P.C., 1971, Geol. Surv. Prof. Paper 683-D, pl. 4, fig. 18, 21.
- = *L. nikraveshae* Morales, 1966, Univ. Nac. Autonoma de Mexico, Inst. de Geol., Boletin 81, p. 62, pl. 5, fig. 2a-b.
- Loxoconcha granulata* Sars, Williams, R.B., 1966, Univ. of Kansas Paleo. Contr., Paper II, p. 11, fig. 5.4.
- = *L. granulata* Sars, 1866, Förh., VidenskSelsk., Krist., p. 64.
- Loxoconcha impressa* (Baird), Williams, R.B., 1966, Univ. of Kansas Paleo. Contr. Paper II, p. 14, fig. 8.
- = *Cythere impressa* Baird, 1850, London: The Roy Society, 1850, p. 173, pl. 21, fig. 9.
- Loxoconcha sperata* Williams, Williams, R.B., 1966, Univ. of Kansas Paleo. Contr. Paper II, p. 11, fig. 5.5.
- = *L. pserata* Williams, 1966, Recent Podocopid Ostracoda of Narragansett Bay, Rhode Island, p. 11, fig. 5.5.
- Muellerina canadensis* (Brady), Hazel, J.E., 1967, Geol. Surv. Prof. Paper 564, pl. 3, fig. 9, 12-15, 17-20.
- = *Cythere canadensis* Brady, 1870, Annals & Mag. Nat. Hist. 4th ser., vol. 6, p. 452, pl. 19, fig. 4-6.
- Muellerina lienenklausi* (Ulrich & Bassler), Hazel, J.E., 1967, Geol. Surv. Prof. Paper 564, pl. 3, fig. 3-6, 11.
- = *Cythere lienenklausi* Ulrich & Bassler, 1904, Maryland Geol. Surv. Miocene, p. 114, pl. 38, fig. 31.
- Munseyella mananensis* Hazel & Valentine, Hazel & Valentine, 1969, J. Paleontol. 43(3), p. 748, pl. 97, fig. 19-24.
- = *M. mananensis* Hazel & Valentine, 1969, J. of Paleontol., vol. 43, no. 3, p. 748, pl. 97, fig. 19-24.

*Nereina angulata* (Sars), Hazel, J.E., 1967, Geol. Surv. Prof. Paper 564, pl. 1, fig. 7-11.

= *Cythereis angulata* Sars, 1865, Förh., VidenskSelsk., Krist., p. 40.

*Neolophocythere subquadrata* Grossman, Valentine, P.C., 1971, Geol. Surv. Prof. Paper 693-D, pl. 4, fig. 31, 32, 35, 36.

= *N. subquadrata* Grossman, 1966, Univ. Kansas Paleont. Contr. ser. no. 44, p. 76, pl. 12, fig. 7-9; pl. 17, fig. 1, 3-5, 7.

*Normanicythere leioderma* (Norman), Hazel, J.E., 1967, Geol. Surv. Prof. Paper 564, pl. 1, fig. 12-16.

= *Cythere leioderma* orman, 1869, Brit. Assoc. Adv. Sci. rept 38th Mtg., pp. 225, 291.

*Palmenella limicola* (Norman), Ellis & Messina, Catalogue of Ostracoda Supp. No. 9.

= *Cythereis limicola* Norman, 1865, Nat. Hist. Trans. Northumberland & Durham, vol. 1, pt. 1, p. 20, pl. 6, fig. 1-4.

*Pseudocytheretta edwardsi* Cushman, Valentine, P.C., 1971, Geol. Surv. Prof. Paper 683-D, pl. 2, fig. 50.

= *Pseudocytheretta edwardsi* Cushman, 1906, Boston Soc. Nat. Hist. Proc. vol. 32, p. 382, pl. 38, fig. 119-132.

*Pterygocytheris inexpectata* Blake, Hazel, J.E., 1973, Personal communication.

= *Cythereis inexpectata* Blake, 1929, Wistar Inst. Anal. Biol. Phila. 1929, p. 12, fig. 7.

*Sahnia foveolata* (Brady), Hazel, J.E., 1973, Personal communication.

= *Cytherideis foveolata* Brady, 1870, Ann. Mag. Nat. Hist. London, 1870, ser. 4, vol. 6, no. 36, p. 454, pl. 19, fig. 1-3.

*Sarsiella zostoericola* (Cushman), Cushman, J.A., 1906, Boston Soc. Nat. Hist., Proc., vol. 32, no. 10, p. 364.

= *S. zostoericola* (Cushman), Cushman, 1906, Boston Soc. Nat. Hist., Proc. vol. 32, no. 10, p. 364.

*Sclerochilus contortus* (Norman), Wagner, C.W., 1957, Sur les Ostracodes du Quaternaire Récent des Pays-Bas et leur Utilization dans l'étude biologiques des Dépôts Holocènes, p. 258, pl. 50, fig. 1-5.

= *S. contortus* (Norman), Sars, 1866, Förh., VidenskSelsk. Krist., p. 90.

*Semicytherura wardensis* Howe & Brown, Hazel, J.E., 1973, Personal communication.

= *Cytherura wardensis* Howe & Brown, 1935, Florida Dept. Cons., Geol. Bull. no. 13, p. 36, pl. 1, fig. 23, 27; pl. 4, fig. 19.

SELECTED BIBLIOGRAPHY

- BARKER, R.W. 1960. Society of Economic Paleontologists and Mineralogists, Special Publication 9.
- BUCKLEY, D.E. 1973. B.I.O. Field Report No. 73-022.
- BUCKLEY, D.E., E.H. OWENS, C.T. SCHAFER, G. VILKS, R.E. CRANSTON, M.A. RASHID, F.J.E. WAGNER, and D.A. WALKER. 1974. G.S.C. Paper 74-30, vol. I.
- CUSHMAN, J.A. 1906. Boston Society of Natural History, Proceedings, vol. 32, no. 10.
- ELLIS & MESSINA. Catalogue of Foraminifera. Catalogue of Ostracoda.
- FEYLING-HANSEN, R.W. 1974. Norges Geologiske Undersøkelse NR 225.
- FEYLING-HANSEN, R.W. 1971. Bulletin of the Geological Society of Denmark, 21.
- HALINGS, N.C. 1967. Crustaceana, vol. 13, pt. 3.
- HAZEL, J.E. 1967. Geol. Survey Professional Paper 564.
- HAZEL, J.E., and P.C. VALENTINE. 1969. Journal of Paleontology, vol. 43, no. 3.
- LESLIE, R. 1965. B.I.O. Report 65-6.
- LOEBLICH & TAPPAN. 1953. Smithsonian Miscellaneous Collection, vol. 121, no. 7.
- PARKER, FRANCES. 1952. Bulletin of the Museum of Comparative Zoology, vol. 106, no. 9.
- PARKER, FRANCES, 1952. Bulletin of the Museum of Comparative Zoology, vol. 106, no. 10.
- PARKER, FRANCES, PHLEGER & PEIRSON. 1953. Cushman Foundation for Foraminiferal Research, Special Publication 2.
- VALENTINE, P.C. 1971. Geological Survey Professional Paper 683-D.
- VILKS, G. 1969. Micropaleontology, vol. 15, no. 1.
- VILKS, G. 1975. The influence of a causeway on marine environment in the Strait of Canso (publ. 1975).
- WAGNER, C. 1957. Sur les Ostracodes du Quaternaire Recent des Pays-Bas et leur utilisation dans l'étude Géologique des Dépôts Holocènes.
- WILLIAMS, R.B. 1966. Recent Podocopid Ostracoda of Narragansett Bay, Rhode Island.
- HAZEL, J.E. 1973. Personal communication.



Environment  
Canada

Environnement  
Canada



Resources  
Canada

Ressources  
Canada