

EPA Chesapeake Bay Program
Final Report
Grant R805982-01-0

Appendices for
The Biogenic Structure of Lower
Chesapeake Bay Sediments

- Appendix A. Species List
- Appendix B. Species and abundance data for each station collected during the 9/78, 4/79 and 6/79 sampling cruises.
- Appendix C. Three-dimensional drawings representing distribution and life style of organisms in a box core at each station.
- Appendix D. Selected radiographs
- Appendix E. Station description with visual observations, x-ray description and important biogenic species.
- Appendix F. Description of the biogenic structures of some of the common and important macrobenthic organisms found in the lower Chesapeake Bay.

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- Appendix F. Description of the biogenic structures of some of the common and important macrobenthic organisms found in the lower Chesapeake Bay.

Appendix A Species List

Phylum Cnidaria
 Class Hydrozoa
 Sertularia argenta
 Class Anthozoa
 Anthozoa sp.
 Family Edwardsiidae
 Edwardsia elegans
 Family Cerianthidae
 Ceriantheopsis americanus
 Phylum Platyhelminthes
 Class Turbellaria
 Turbellarians
 Phylum Rhynehocoela
 Class Anopla
 Family Tubulanidae
 Tubulanus pellucidus
 Family Lineidae
 Cerebratulus lacteus
 Nemertea sp.
 Class Enopla
 Family Amphiporidae
 Amphiporus bioculatus
 Amphiporus sp.
 Phylum Ectoprocta
 Class Gymnolaemata
 Family Walkeriidae
 Aevertillia armata
 Family Membraniporidae
 Membranipora sp.
 Family Electridae
 Electra crustulenta
 Phylum Phoronida
 Phoronis sp.
 Phylum Mollusca
 Class Pelecypoda
 Family Nuculidae
 Nucula proxima
 Family Nuculanidae
 Yoldia limatula
 Family Arcidae
 Anadara ovalis
 Anadara transversa
 Family Mytidae
 Mytilus edulis

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Appendix A Species List (continued)

Phylum Mollusca (continued)

Family Leptonidae sp.

Family Montaculidae

Aligena elevata

Family Lucinidae

Lucina multileneata

Family Veniridae

Gemma gemma

Mercenaria mercenaria

Pitar morrhuana

Family Mactridae

Mulinia lateralis

Family Tellinidae

Macoma mitchilli

Macoma balthica

Tellina agilis

Family Solenidae

Ensis directus

Family Myacidae

Mya arenaria

Family Lyonsiidae

Lyonsia hyalina

Family Pandoridae

Pandora trilineata

Class Gastropoda

Family Caecidae

Caecum pulchelum

Family Calyptraeidae

Crepidula plana

Family Naticidae

Natica pusilla

Family Columbellidae

Anachis translirata

Mitrella lunata

Family Melongenidae

Busycon carica

Family Nassariidae

Nassarius trivittatus

Family Turridae

Mangelia cerina

Family Pyramidellidae

Odostomia impressa

Odostomia sp.

Turbonilla interrupta

Turbonilla stricta

Appendix A Species List (continued)

Phylum Mollusca (continued)

- Family Acteonidae
 - Acteon punctostriatus
- Family Retusidae
 - Retusa canaliculata
- Family Scaphandridae
 - Cylichna alba
- Family Corambidae
 - Doridella obscura
- Family Cratenidae
 - Cratena kaoruae

Phylum Annelida

Class Polychaeta

- Family Polygordiidae
 - Polygordius sp.
- Family Phyllodocidae
 - Phyllodoce arenae
 - Phyllodoce mucosa
 - Paranaitis speciosa
 - Eteone heteropoda
- Family Polynoidae
 - Lepidametria commensalis
 - Lepidonotus sublevis
 - Harmothoe extenuata
 - Harmothoe sp. A
- Family Chrysopetalidae
 - Bhawania goodei
 - Paleanotus heteroseta
- Family Glyceridae
 - Glycera americana
 - Glycera dibranchiata
 - Glycera robusta
- Family Coniadiidae
 - Coniadella gracilis
 - Glycinde solitaria
- Family Nephtyidae
 - Nephtys incisa
 - Nephtys picta
 - Aglaophamus circinata
- Family Syllidae
 - Brania wellfleetensis
 - Syllis cornuta
 - Procerea cornutus
- Family Hesionidae
 - Gyptis brevipalpa
 - Podarke obscura

Appendix A Species List (continued)

Phylum Annelida (continued)

Family Pilargidae

Ancistrosyllis hartmanae

A. jonesi

Sigambra tentaculata

Sigambra sp.

Cabira incerta

Pilargis sp. A

Family Nereidae

Nereis succinea

Westerinereis tridentata

Family Capitellidae

Capitellidae sp. A

Capitellidae sp. B

Heteromastus filiformis

Mediomastus ambiseta

Notomastus sp.

Family Maldanidae sp.

Asychis elongata

Praxillela gracilis

Clymenella torquata

Clymenella zonalis

Family Ophelidae

Travisia carnea

Family Spionidae

Spio filicornis

Spio setosa

Scolecopides viridis

Prionospio cirrifera

Prionospio pygmaea

Prionospio cirrobranchiata

Paraprionospio pinnata

Polydora ligni

Polydora socialis

Streblospio benedicti

Spiophanes bombyx

Spiophanes wigelyi

Family Paraonidae

Aricidea fragilis

Aricidea wassi

Aricidea catherinae

Aricidea suecica

Family Chaetopteridae

Chaetopterus variopedatus

Spiochaetopterus oculatus

Family Sabellaridae

Sabellaria vulgaris

Appendix A Species List (continued)

Phylum Annelida (continued)

Family Onuphidae

Onuphis eremita

Diopatra cuprea

Family Eunicidae

Marphysa sanguinea

Family Arabellidae

Arabella iricolor

Drilonereis longa

Drilonereis magna

Family Amphinomidae

Pseudoeurythoe ambigua

Family Magelonidae

Magelona sp.

Magelona rosea

Family Orbinidae

Scoloplos rubra

Scoloplos robustus

Scoloplos foliosus

Scoloplos acutus

Scoloplos fragilis

Family Cirratulidae

Cirratulus grandis

Tharyx sp.

Family Oweniidae

Owenia fusiformis

Family Pectinariidae

Pectinaria gouldii

Family Ampharetidae

Asabellides oculata

Family Terebellidae

Amphitrite ornata

Loimia medusa

Polycirrus eximius

Family Sabellidae

Sabella microphthalma

Class Oligochaete

Oligochaete sp.

Phylum Arthropoda

Subclass Ostracoda

Ostracod sp.

Subclass Malacostraca

Order Cumacea

Family Leuconidae

Leucon americanus

Family Diastylidae

Oxyurostylis smithi

Appendix A Species List (continued)

Phylum Arthropoda (continued)

Order Isopoda

Family Anthuridae

Cyathura polita

Ptilanthura tenuis

Family Idoteidae

Chiridotea caeca

Edotea triloba

Erichsonella filiformis

Order Amphipoda

Family Ampeliscidae

Ampelisca abdita

Ampelisca vadorum

Ameplisca verrilli

Family Corophiidae

Corophium tuberculatum

Erichthonius brasiliensis

Unciola irrorata

Unciola serrata

Unciola dissimilis

Family Gammaridae

Gammarus mucronatus

Elasmopus laevis

Melita nitida

Family Lilljeborgiidae

Idunella sp.

Listriella clymenellae

Family Oediarotidae

Monoculodes edwardsi

Family Photidae

Photis dentata

Leptocheirus plumulosus

Family Phoxocephalidae

Trichophoxus epistomus

Family Pleustidae

Pleusymtes glaber

Family Stenothoidae

Parametopella cypris

Family Caprellidae

Caprella penantis

Paracaprella tenuis

Order Mysidacea

Family Mysidae

Neomysis americana

Order Decapoda

Family Ogyrides

Ogyrides limicola

Appendix A Species List (continued)

Phylum Arthropoda (continued)

- Family Crangonidae
 - Crangon septemspinosus
- Family Upogebiidae
 - Upogebia affinis
- Family Callianassidae
 - Callianassa atlantica
- Family Paguridae
 - Pagurus longicarpus
- Family Majidae
 - Libinia dubia
- Family Xanthidae
 - Neopanope texana sayi
- Family Pinnotheridae
 - Pinnixa retinens
 - Pinnixa chaetopterana

Phylum Echinodermata

- Class Ophiuroidea
 - Family Ophiodermatidae
 - Micropholis atra
- Class Holothuroidea
 - Family Cucumariidae
 - Thyone briareus

Phylum Chordata

- Class Ascidiacea
 - Family Botryllidae
 - Botryllus schlosseri
 - Family Molgulidae
 - Molgula manhattensis

Appendix B

Species and Abundance data for each station collected
during the 9/78, 4/79, and 6/79 sampling cruises

Station 26 9-78

Box core section (cm)

Taxon	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45
Mollusca									
<u>Mulinia lateralis</u>	8								
<u>Retusa canaliculata</u>	1								
Crustacea									
<u>Ampelisca abdita</u>	86	1*							
<u>Edotea triloba</u>	2								
<u>Leucon americanus</u>	86	1*							
Polychaeta									
<u>Glycinde solitaria</u>	2								
<u>Loimia medusa</u>	1								
<u>Nereis succinea</u>	3								
<u>Paranaitis speciosa</u>	1								
<u>Paraprionospio pinnata</u>	7								

* contamination from surface

Station 27

9-78

Taxon	0-5	5-10	10-15	15-20	20-25	25-30
Mollusca						
<u>Retusa canaliculata</u>	6					
Crustacea						
<u>Ampelisca abdita</u>	2				1*	
<u>Listriella clymenellae</u>		1		1		
Polychaeta						
<u>Ancistrosyllis hartmanae</u>				1		
<u>Clymenella torquata</u>			2			
<u>Glycera dibranchiata</u>		1		1		
<u>Glycinde solitaria</u>	1					
<u>Paraprionospio pinnata</u>	5					
<u>Pseudoeurythoe ambigua</u>	1		4	6		
<u>Spiophanes</u> sp.	1					
Spionidae		1				
Phoronida						
<u>Phoronis</u> sp.		1				

* contamination from surface

Station 28

9-78

Taxon	0-5	5-10	10-15	15-20	20-28
Mollusca					
<u>Anadara transversa</u>	2				
Crustacea					
<u>Pinnixa retinens</u>	1				
Polychaeta					
<u>Chaetopterus variopedatus</u>	1				
<u>Clymenella torquata</u>		1			
<u>Glycera dibranchiata</u>					1
<u>Glycinde solitaria</u>	1	1			
<u>Maldanidae sp.</u>					1
<u>Nereis succinea</u>	3				
<u>Paraprionospio pinnata</u>		6			
<u>Pseudoeurythoe ambigua</u>		1	1	9	19
Phoronida					
<u>Phoronis sp.</u>	2				

Station 29

9-78

Taxon	0-5	5-10	10-15	15-20
Nemertea				
<u>Cerebratulus lacteus</u>	1		1	
Mollusca				
<u>Ensis directus</u>	1			
<u>Mulinia lateralis</u>	2			
<u>Odostomia impressa</u>	1			
<u>Retusa canaliculata</u>	4			
Crustacea				
<u>Ampelisca abdita</u>	5	2*		
<u>Ampelisca verrilli</u>	6	3*		
<u>Cyathura polita</u>	1			
Ostracod	2			
Polychaeta				
<u>Ancistrosyllis hartmanae</u>			1	
<u>Drilonereis longa</u>		1		
<u>Glycera dibranchiata</u>	5		1	
<u>Loimia medusa</u>	1			
Orbiniidae sp.		2		
<u>Pseudoeurythoe ambigua</u>			2	1
<u>Scoloplos rubra</u>			2	
Terebellidae sp.	1			
<u>Tharyx</u> sp.	1			
Phoronida				
<u>Phoronis</u> sp.			5	

* contamination from surface

Station 30 9-78

Taxon	0-5	5-10	10-15	15-20	20-25	25-30
Mollusca						
<u>Acteon punctostriatus</u>	1					
Bivalve sp.	1					
Crustacea						
<u>Ampelisca abdita</u>	3,080	6*	6*	3*		
<u>Edotea triloba</u>	19					
<u>Leucon americanus</u>	5					
<u>Melita nitida</u>	1					
<u>Neomysis americana</u>	1					
Ostracod	3					
Polychaeta						
<u>Glycinde solitaria</u>	2					
<u>Loimia medusa</u>	2	1				
<u>Nereis succinea</u>	25	1				
<u>Paraprionospio pinnata</u>	1					

* contamination from surface

Station 31

Taxon	0-5	5-10	10-15
Polychaeta			
<u>Prionospio</u> sp.			1*
<u>Pseudoeurythoe</u> <u>ambigua</u>			1*

* contamination from surface

Station 32

9-78

Taxon	0-5	5-10	10-15	15-20
Mollusca				
<u>Anadara transversa</u>	2		1*	
<u>Retusa canaliculata</u>	1			
Crustacea				
<u>Ampelisca abdita</u>	7			
<u>Leucon americanus</u>	1			
<u>Listriella clymenellae</u>	1		1	
Ostracod	1			
Polychaeta				
<u>Clymenella sp.</u>		1		
<u>Glycera dibranchiata</u>	1			
<u>Orbiniidae sp.</u>	1			
<u>Paraprionospio pinnata</u>	3			
<u>Pectinaria gouldii</u>	2	1	1*	
<u>Praxillela gracilis</u>			1	
<u>Pseudoeurythoe ambigua</u>		1		
<u>Sigambra tentaculata</u>				1

* contamination from surface

Station 33 9-78

Taxon	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40
Crustacea								
<u>Unciola irrorata</u>							3*	
Polychaeta								
<u>Nereis succinea</u>	2							
<u>Pseudoeurythoe ambigua</u>		1						

* contamination from surface.

Station 34 9-78

Taxon	0-5	5-10	10-15	15-21
Mollusca				
<u>Odostomia</u> sp.	1			
<u>Retusa canaliculata</u>	5			
Crustacea				
<u>Neomysis americana</u>	1			
<u>Pinixa retinens</u>				1
Polychaeta				
<u>Ancistrosyllis</u> sp.			1	
<u>Glycinde solitaria</u>	5			
Maldanidae sp.	1			
<u>Nereis succinea</u>	1	1		
Orbinidae sp.	1			
<u>Paraprionospio pinnata</u>	12	5	1	
<u>Pseudoeurythoe ambigua</u>	1			

Station 35 9-78

Taxon	0-5	5-10	10-15	15-20	20-25	25-30	30-38
Mollusca							
<u>Anachis translirata</u>	1						
<u>Anadara transversa</u>	2						
<u>Retusa canaliculata</u>	6	1*					
<u>Turbonilla interrupta</u>	1						
Crustacea							
<u>Ampelisca abdita</u>	20	1*					
<u>Corophium</u> sp.	1						
<u>Listriella clymenellae</u>	1						
<u>Neomysis americana</u>		1*					
<u>Ostracod</u>	2						
<u>Pinnixa chaetoptera</u>			1				
<u>P. retinens</u>				1			
Polychaeta							
<u>Clymenella torquata</u>		3		1			
<u>Glycera americana</u>		1					
<u>Goniadidae</u> sp.	1						
<u>Harmothoe</u> sp. A		1					
<u>Nephtyidae</u> sp.	1						
<u>Notomastus</u> sp.	1						
<u>Paleanotus heteroseta</u>		1					
<u>Paraprionospio pinnata</u>	2						
<u>Pectinaria gouldii</u>	5	1					
<u>Pseudoeurythoe ambigua</u>		1			2		1
Echinodermata							
<u>Micropholis atra</u>			1				

* contamination from surface

Station 36

9-78

Taxon	0-5	5-10	10-15	15-20
Mollusca				
<u>Anadara transversa</u>	76			
<u>Retusa canaliculata</u>	3			1*
<u>Turbonilla interrupta</u>	1			
Crustacea				
<u>Ampelisca abdita</u>	5			
<u>Ampelisca vadorum</u>	3			
<u>Ampelisca verrilli</u>	5	4		
<u>Corophium tuberculatum</u>	3			
<u>Edotea triloba</u>	1			
Ostracod	3			
Polychaeta				
Ampharetidae		1		
Cirratulidae sp.			2	
Nephtyidae sp.			1	
<u>Nereis succinea</u>	8			
<u>Paraprionospio pinnata</u>	1			
<u>Pectinaria gouldii</u>	1			
<u>Polygordius</u> sp.		1		
<u>Pseudoeurythoe ambigua</u>		1	1	1
<u>Sabellaria vulgaris</u>	16			
<u>Tharyx</u> sp.		3		
Ascidacea				
<u>Molgula manhattensis</u>	9			

* contamination from surface

Station 37 9-78

Taxon	0-5	5-10	10-18.5
Mollusca			
<u>Mulinia lateralis</u>	2		
Crustacea			
<u>Neomysis americana</u>	6	1*	
Polychaeta			
Ampharetidae sp.		1	1
<u>Ancistrosyllis hartmanae</u>			1
<u>A. jonesi</u>			1
<u>Bhawansa goodesi</u>			1
<u>Drilonereis longa</u>			1
<u>Glycera dibranchiata</u>	1	1	
<u>Paraprionospio pinnata</u>	3		
<u>Pseudoeurythoe ambigua</u>		4	2
Phoronida			
<u>Phoronis</u> sp.	1		

* contamination from surface

Station 38 9-78

Taxon	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-51
Mollusca									
<u>Mulinia lateralis</u>	2								
Crustacea									
Ostracod sp.		1*							
Polychaeta									
<u>Glycera americana</u>			1						
<u>Glycinde solitaria</u>	1								
<u>Loimia medusa</u>	1	1							
<u>Paleonotus heteroseta</u>	1								
<u>Paraprionospio pinnata</u>	1	8	3						
<u>Pectinaria gouldii</u>	5	3							
<u>Pseudoeurythoe ambigua</u>				1					

Station 39

9-78

Taxon	0-5	5-10	10-15	15-20
Mollusca				
<u>Turbonilla interrupta</u>	1			
Crustacea				
<u>Ampelisca verrilli</u>	2			
<u>Callianassa atlantica</u>				1
<u>Pinnixa chaetoptera</u>	1		1	
<u>Pinnotheridae sp.</u>			1	
<u>Ptilanthura tenuis</u>	3			
<u>Trichophoxus epistomus</u>	2	1*	1*	
Polychaeta				
Arabellidae sp.			1	
Cirratulidae sp.			1	
<u>Glycera dibranchiata</u>		1		
<u>Glycera sp.</u>	1	1	1	
<u>Nephtys sp.</u>	2			
Orbinidae sp.	1			
<u>Paleanotus heteroseta</u>		1		
Paraonidae			1	
Phyllodocidae	1			
<u>Pseudoeurythoe ambigua</u>		1		
Echinodermata				
<u>Micropholis atra</u>				1

* contamination from surface

Station 40

9-78

Taxon	0-5	5-10	10-15	15-20	20-25	25-33
Mollusca						
<u>Acteon punctostriatus</u>	1					
<u>Anadara transversa</u>	1		1*			
<u>Busycon carica</u>	1					
<u>Ensis directus</u>		1				
<u>Odostomia impressa</u>	1					
<u>Retusa canaliculata</u>	6					
Crustacea						
<u>Ampelisca verrilli</u>	1					
<u>Anthuridae sp.</u>					1*	
<u>Listriella clymenellae</u>			1		1	
<u>Pinnotheridae sp.</u>	1					
<u>Unciola irrorata</u>	1					
Polychaeta						
<u>Amphinomidae sp.</u>	1					
<u>Capitellidae</u>			1			
<u>Glycera americana</u>	1		1			
<u>Harmothoe sp. A</u>			1			
<u>Maldanidae sp.</u>	1		1	2	1	1
<u>Nereis succinea</u>	1					
<u>Paleanotus heteroseta</u>			1			
<u>Phyllodocidae</u>			1			
<u>Pseudeurythoe ambigua</u>	2		11	2	1	
<u>Sabellaria vulgaris</u>	5					
Echinodermata						
<u>Micropholis atra</u>			1			
Phoronida						
<u>Phoronis sp.</u>		1				
Ascidacea						
<u>Molgula manhattensis</u>	1					

* contamination from surface

Station 41 9-78

Taxon	0-5	5-10	10-15	15-20	20-24
Mollusca					
<u>Anadara transversa</u>	11			2*	
<u>Odostomia</u> sp.	1				
Crustacea					
Ampeliscidae sp.	1				
Polychaeta					
<u>Ancistrosyllis</u> sp.			1		
<u>Heteromastus filiformis</u>			1		
Maldanidae sp.				1	
<u>Nereis succinea</u>	6				
<u>Paleanotus heteroseta</u>	1				
<u>Paraprionospio pinnata</u>	1				
<u>Pectinaria gouldii</u>	4				
<u>Pseudoeurythoe ambigua</u>	2	1	1	1	1
<u>Sabellaria vulgaris</u>	4				
Spionidae sp.	1				

* contamination from surface

Station 42

9-78

Taxon	0-5	5-10	10-15	15-20	20-25	25-30	30-36
Mollusca							
<u>Anadara transversa</u>	1						
<u>Mulinia lateralis</u>	1						
<u>Yoldia limatula</u>	1						
Polychaeta							
<u>Glycera americana</u>					1		
Maldanidae	3	1	1	1			
<u>Nephtys picta</u>	4						
Nereidae			1				
<u>Paleanotus heteroseta</u>		2		1			
Phyllodocidae	1						
Pilargidae				1			
<u>Pilargis sp. A</u>			1				
<u>Pseudoeurythoe ambigua</u>			1	1			
<u>Sigambra sp.</u>	1						

Station 43

9-78

Taxon	0-5	5-10	10-15	15-20	20-24
Mollusca					
<u>Aligena elevata</u>	1				
<u>Nucula proxima</u>	1				
<u>Retusa canaliculata</u>	1				
<u>Yoldia limatula</u>	1				
Polychaeta					
<u>Capitellidae sp.</u>	1				
<u>Harmothoe sp. A</u>		1			
<u>Maldanidae sp.</u>		1			
<u>Nephtys sp.</u>	2	1			
<u>Orbiniidae sp.</u>			1		
<u>Paleanotus heteroseta</u>		1			
<u>Paraprionospio pinnata</u>	3				
<u>Pilargidae sp.</u>			1		
<u>Praxillella gracilis</u>	1				
<u>Pseudoeurythoe ambigua</u>		1	1		1
<u>Sigambra tentaculata</u>				1	
Echinodermata					
<u>Micropholis atra</u>		1			

Station 44

9-78

Taxon	0-5	5-10	10-13
Mollusca			
<u>Acteon punctostriatus</u>	2		
<u>Mangelia cerina</u>	1		
<u>Mulinia lateralis</u>	6		
<u>Natica pusilla</u>	1		
<u>Retusa canaliculata</u>	57		
<u>Tellina agilis</u>	2		
<u>Turbonilla interrupta</u>	1		
Crustacea			
<u>Neomysis americana</u>	1		
<u>Ostracod</u>	1		
<u>Oxyurostylis smithi</u>	2		
Polychaeta			
Arabellidae		1	
<u>Glycera dibranchiata</u>	1	2	
<u>Glycera</u> sp.	7		1
<u>Glycinde solitaria</u>	1		
Maldanidae	1		

Station 45 9-78

Taxon	0-5	5-10	10-15	15-20	20-27
Mollusca					
<u>Busycon carica</u>	1				
Polychaeta					
Ampharetidae sp.	1				
<u>Glycera americana</u>		1			
<u>Pseudoeurythoe ambigua</u>	4	3	1		2
<u>Scoloplos robustus</u>			1		
<u>Tharyx</u> sp.			1		
Phoronida					
<u>Phoronis</u> sp.	1				

Taxon	0-5	5-10	10-18
Mollusca			
<u>Odostomia</u> sp.	1		
<u>Pitar</u> <u>morrhua</u>	1		
<u>Retusa</u> <u>canaliculata</u>	1		
<u>Tellina</u> <u>agilis</u>	1		
<u>Turbonilla</u> <u>interrupta</u>	6		1*
<u>Yoldia</u> <u>limatula</u>	1		
Crustacea			
<u>Ampelisca</u> <u>abdit</u>	7		
<u>Libinia</u> <u>dubia</u>	1		
<u>Paguridae</u> sp.	1		
<u>Unciola</u> <u>serrata</u>			1*
<u>Upogebia</u> <u>affinis</u>	1		
Polychaeta			
<u>Glycera</u> <u>americana</u>			1
<u>Glycinde</u> <u>solitaria</u>	1		
<u>Glycinde</u> sp.	2		
<u>Heteromastus</u> <u>filiformis</u>		1	
<u>Asychis</u> <u>elongata</u>	1		
<u>Paleanotus</u> <u>heteroseta</u>	2		
<u>Pectinaria</u> <u>gouldii</u>	1	1	
<u>Pseudoeurythoe</u> <u>ambigua</u>	1	1	1
Nemertea			
<u>Cerebratul</u> <u>lacteus</u>		1	
Phoronida			
<u>Phoronis</u> sp.	1		
Echinodermata			
<u>Micropholis</u> <u>atra</u>	1		

* Contamination from surface

Station 47 9-78

Taxon	0-5	5-10	10-15	15-20	20-25	25-30	30-38
Mollusca							
<u>Retusa canaliculata</u>	11						
<u>Tellina agilis</u>	1						
<u>Turbonilla stricta</u>	1						
Crustacea							
<u>Ampelisca abdita</u>	1						
Ostracod sp.	1						
<u>Oxyurostylis smithi</u>	1						
<u>Pinnixa chaetoptera</u>	1	1					
Polychaeta							
<u>Aglaophamus circinata</u>	2						
<u>Glycinde solitaria</u>	1						
Goniadidae sp.			1				
Maldanidae sp.		1					2
Orbiniidae sp.	1						
<u>Paraprionospio pinnata</u>	2	1					
Spionidae sp.	1						
<u>Tharyx</u> sp.	1						
Terebellidae sp.					1		
Phoronida							
<u>Phoronis</u>	1						

Station 48

9-78

Taxon	0-5	5-10	10-18
Mollusca			
<u>Mulinia lateralis</u>	2		
<u>Odostomia</u> sp.	1		
<u>Retusa canaliculata</u>	20		
<u>Tellina agilis</u>	1		
Crustacea			
Ostracod sp.	1		
Polychaeta			
<u>Glycinde solitaria</u>	3	1	
<u>Loimia medusa</u>	3		
<u>Paraprionospio pinnata</u>	7	1	
<u>Pseudoeurythoe ambigua</u>			2

Station 49

9-78

Taxon	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55
Mollusca											
<u>Acteon punctostriatus</u>										1*	
<u>Cylichna alba</u>	3										
<u>Macoma balthica</u>	1		1								
<u>Mulinia lateralis</u>	1										
<u>Retusa canaliculata</u>	5										
<u>Yoldia limatula</u>	1										
Crustacea											
<u>Ampelisca abdita</u>	1										
<u>Listriella clymenellae</u>			1								
<u>Upogebia affinis</u>			1					1			
Polychaeta											
<u>Aricidea fragilis</u>					1	1					
<u>Glycinde solitaria</u>			1								
<u>Maldanidae sp.</u>			1								
<u>Paleanotus heteroseta</u>	1										
<u>Paraprionospio pinnata</u>	3		1								
<u>Tharyx sp.</u>	1										
Phoronida											
<u>Phoronis sp.</u>			1					1*			

* contamination from surface

Station 50 9-78

Taxon	0-5	5-10	10-15	15-22
Mollusca				
<u>Tellina agilis</u>	3			
Polychaeta				
Arabellidae sp.	1	1	1	2
Cirratulidae sp.	1			
<u>Drilonereis longa</u>		2		1
<u>Glycera dibranchiata</u>	1			
<u>G. robusta</u>	2			
<u>G. sp.</u>		1		
<u>Magelona sp.</u>		1		
Orbiniidae sp.	1			
<u>Pseudoeurythoe ambigua</u>				1
<u>Scoloplos rubra</u>			1	
Spionidae sp.		1		

Taxon		0-2	2-5	5-10	10-15	15-20	20-30	30-40
Platyhelminthes								
<u>Turbellaria</u> sp.	(a)**	5		1				
Nemertea								
<u>Amphiporus</u> <u>biooculatus</u>		41		1				
<u>Amphiporus</u> sp.		3						
<u>Cerebratulus</u> <u>lacteus</u>	(b)			1				
Mollusca								
<u>Macoma</u> <u>balthica</u>	(c)	20		4				
<u>Mulinia</u> <u>lateralis</u>	(d)	15						
<u>Mya</u> <u>arenaria</u>	(e)	24						
<u>Odostomia</u> sp.	(f)	6						
<u>Tellinidae</u> sp.		2						
Crustacea								
<u>Ampelisca</u> <u>abdita</u>	(g)	1106	15	15*	21*	9*	1*	3*
<u>Edotea</u> <u>triloba</u>	(h)	3						
<u>Gammarus</u> <u>mucronatus</u>	(i)	130	1	3*	4*	1*		
<u>Leucon</u> <u>americanus</u>	(j)	4						
<u>Melita</u> <u>nitida</u>	(k)	103	5	3*	2*			
Polychaeta								
<u>Eteone</u> <u>heteropoda</u>	(l)			3				
<u>Glycera</u> <u>americana</u>		1						
<u>Glycera</u> <u>dibranchiata</u>	(m)					1		
<u>Glycinde</u> <u>solitaria</u>	(n)	84						
<u>Heteromastus</u> <u>filiformis</u>	(o)	13		3				
<u>Mediomastus</u> <u>ambiseta</u>	(v)	2		2				
<u>Nereis</u> <u>succinea</u>	(p)	270	3	3	1	2		
<u>Paraprionospio</u> <u>pinnata</u>	(q)	5						
<u>Pectinaria</u> <u>gouldii</u>	(r)	58	1	1*		1*		
<u>Polydora</u> <u>ligni</u>	(s)	141						
<u>Scolecoides</u> <u>viridis</u>	(t)	2						
<u>Scoloplos</u> <u>fragilis</u>		2	1					
<u>Streblospio</u> <u>benedicti</u>	(u)	305	1	10*	6*			
<u>Oligochaeta</u> sp.		5	1					
dead Hydroid mat (m)				P				

* contamination from surface

**letters refer to drawings in Appendix C

Station 77 6-79

Taxon		0-2	2-5	5-10	10-15	15-20	20-30
Ectoprocta							
<u>Membranipora</u> sp.	P						
Mollusca							
<u>Anadara transversa</u>	(a)	1					
<u>Lyonsia hyalina</u>	(b)	1					
<u>Macoma balthica</u>	(c)		1				
<u>Mulinia lateralis</u>	(d)	16					
<u>Mya arenaria</u>	(e)					1*	1*
<u>Odostomia</u> sp.	(f)	1					
Crustacea							
<u>Ampelisca abdita</u>	(g)	3		1*			
<u>Crangon septemspinosa</u>	(h)	1					
Polychaeta							
<u>Ancistrosyllis jonesi</u>	(i)		1				
<u>Clymenella torquata</u>	(j)				1		
<u>Eteone heteropoda</u>	(k)		1		1*		
<u>Glycera americana</u>	(l)		1			1	
<u>Harmothoe extenuata</u>							1*
<u>Hesionidae</u> sp.							1*
<u>Nereis succinea</u>	(m)	14	2				1
<u>Pectinaria gouldii</u>	(n)	14	1				1*
<u>Polydora ligni</u>		2	1	1*			
<u>Pseudeurythoe ambigua</u>	(p)	2	1	3	6	14	6
<u>Sigambra tentaculata</u>	(q)						1
<u>Streblospio benedicti</u>	(r)	17	7	1			
<u>Oligochaeta</u> sp.			1				

* contamination from surface

Station 78 6-79

Taxon		0-2	2-5	5-10	10-15	15-20	20-30	30-40
Nemertea								
<u>Amphiporus bioculatus</u>	(a)	6						
<u>Amphiporus</u> sp.		2						
Mollusca								
<u>Macoma balthica</u>	(b)	8	7					
<u>Mulinia lateralis</u>	(c)	10						
<u>Mya arenaria</u>	(d)	6						
<u>Odostomia</u> sp.	(e)	2						
<u>Retusa canaliculata</u>	(f)	1						
Crustacea								
<u>Ampelisca abdita</u>	(g)	1837	62	30*	17*	6*	2*	3*
<u>Edotea triloba</u>	(h)	12	1		1*			
<u>Gammarus mucronatus</u>	(i)	28	1	2*				
<u>Leucon americanus</u>	(j)	345	3	3*	1*			
<u>Melita nitida</u>	(k)	73	2					
Polychaeta								
<u>Asabellides oculata</u>	(l)	1						
<u>Capitellidae</u> sp.		5	2	1				
<u>Eteone heteropoda</u>	(m)	42	1					
<u>Heteromastus filiformis</u>	(n)	7	2				1	
<u>Mediomastus ambiseta</u>	(o)	4		1				
<u>Nereis succinea</u>	(p)	55	5					
<u>Paraprionospio pinnata</u>	(q)	10	2					
<u>Pectinaria gouldii</u>	(r)	21	1				1*	
<u>Polydora ligni</u>	(s)	8		1				
<u>Scoloplos fragilis</u>	(t)	1						
<u>Streblospio benedicti</u>	(u)	425	9	13*	3*			1*
Oligochaeta sp.		1						

* contamination from surface

Station 79

6-79

Taxon		0-2	2-5	5-10	10-15	15-20	20-30	30-40
Mollusca								
<u>Macoma balthica</u>	(a)	1	1					
<u>M. mitchilli</u>	(b)	1						
<u>Mulinia lateralis</u>	(c)	6	1					
<u>Retusa canaliculata</u>	(d)	1						
Crustacea								
<u>Ampelisca abdita</u>	(e)	2						
Polychaeta								
<u>Ancistrosyllis jonesi</u>	(f)		1					
<u>Asabellides oculata</u>	(g)	2						
<u>Eteone heteropoda</u>	(h)	12		1*				
<u>Glycinde solitaria</u>	(i)	10	1					
<u>Nereis succinea</u>	(j)	4		1				
<u>Paraprionospio pinnata</u>	(k)	11	14	5	1			
<u>Pectinaria gouldii</u>	(l)				1*			
<u>Pseudeurythoe ambigua</u>	(m)	3	10					
<u>Scoloplos acutus</u>	(n)	2						
<u>Sigambra tentaculata</u>	(o)				1			
<u>Streblospio benedicti</u>	(p)	55		1				
Oligochaeta sp.		2						

* contamination from surface

Station 80

6-79

Taxon		0-2	2-5	5-10	10-15	15-20	20-30	30-40	40-50
Platyhelminthes									
<u>Turbellaria</u> sp.	(a)	1							
Nemertea									
<u>Cerebratulus lacteus</u>	(b)	1	2						
Mollusca									
<u>Macoma balthica</u>	(c)	7	9						
<u>Mulinia lateralis</u>	(d)	27	2		1*				
Crustacea									
<u>Ampelisca abdita</u>	(e)	80	2	8*	4*				
Polychaeta									
<u>Eteone heteropoda</u>	(f)	7							
<u>Glycera dibranchiata</u>	(g)		1						
<u>Glyceridae</u> sp.		1							
<u>Glycinde solitaria</u>	(h)	1							
<u>Heteromastus filiformis</u>	(i)	9	26	7					
<u>Nereis succinea</u>	(k)	14							
<u>Paraprionospio pinnata</u>	(l)	15							
<u>Pectinaria gouldii</u>	(m)	64	1		3*				
<u>Pseudeurythoe ambigua</u>	(n)		1						
<u>Scolecopides viridis</u>	(o)	1							
<u>Scoloplos fragilis</u>	(p)	2	2						
<u>Streblospio benedicti</u>	(q)	198	1	2*	2*				
<u>Oligochaeta</u> sp.		4	3						

r - dead hydroid mat

Taxon		0-2	2-5	5-10	10-15	15-20	20-30	30-40	40-50
Platyhelminthes									
<u>Turbellaria</u> sp.	(a)	2	9	1	1*				
Nemertea									
<u>Amphiporus</u> <u>bioculatus</u>	(b)	1							
<u>Nemertea</u> sp.						1			
Mollusca									
<u>Lyonsia</u> <u>hyalina</u>	(c)	1							
<u>Mulinia</u> <u>lateralis</u>	(d)	19							
<u>Mya</u> <u>arenaria</u>	(e)	1							
<u>Retusa</u> <u>canaliculata</u>	(f)	2							
Crustacea									
<u>Ampelisca</u> <u>abdita</u>	(g)	1							
<u>Edotea</u> <u>triloba</u>		1				1*			
<u>Leucon</u> <u>americanus</u>	(h)	6		1*					
Polychaeta									
<u>Eteone</u> <u>heteropoda</u>	(i)	41		2*					
<u>Glycinde</u> <u>solitaria</u>	(j)	1		1					
<u>Gyptis</u> <u>brevipalpa</u>			1						
<u>Heteromastus</u> <u>filiformis</u>	(k)		2						
<u>Loimia</u> <u>medusa</u>	(l)		1	3		1			
<u>Nereis</u> <u>succinea</u>	(m)	3							
<u>Paraprionospio</u> <u>pinnata</u>	(n)	2						1*	
<u>Pectinaria</u> <u>gouldii</u>	(o)	665	12	15	9*	1*		1*	
<u>Polydora</u> <u>ligni</u>	(p)	1	2						
<u>Pseudeurythoe</u> <u>ambigua</u>	(q)		7	10					
<u>Scoloplos</u> <u>fragilis</u>	(r)		5						
<u>Streblospio</u> <u>benedicti</u>	(s)	8							
<u>Oligochaeta</u> sp.	(t)	5	6						

* contamination from surface

Station 82

6-79

Taxon		0-2	2-5	5-10	10-15	15-20	20-30
Mollusca							
<u>Ensis directus</u>	(a)	1					
<u>Macoma balthica</u>	(b)	1					
<u>Mulinia lateralis</u>	(c)	3					
<u>Mytilus edulis</u>	(d)	2					
Crustacea							
<u>Ampelisca abdita</u>	(e)	9					
<u>Gammarus mucronatus</u>	(f)	3					
Polychaeta							
<u>Asabellides oculata</u>	(g)	2					
<u>Eteone heteropoda</u>	(h)	3					
<u>Heteromastus filiformis</u>	(i)	3					
<u>Nereis succinea</u>	(j)	2	1				
<u>Paraprionospio pinnata</u>	(k)	1		1			
<u>Pectinaria gouldii</u>	(l)	18					
<u>Polydora ligni</u>	(m)	1					
<u>Streblospio benedicti</u>	(n)	152	1				

Station 83

6-79

Taxon		0-2	2-5	5-10	10-15	15-20	20-30
Nemertea							
<u>Cerebratulus lacteus</u>	(a)			1			
Mollusca							
<u>Macoma balthica</u>	(b)		2	2			
<u>M. mitchelli</u>	(c)	1		2			
<u>Mulinia lateralis</u>	(d)	24	1				
<u>Mya arenaria</u>	(e)						
Crustacea							
<u>Ampelisca abdita</u>	(f)	12					
<u>Leptocheirus plumulosus</u>	(g)	1					
Polychaeta							
<u>Eteone heteropoda</u>	(h)	2					
<u>Glycinde solitaria</u>	(i)	2	3	3			
<u>Heteromastus filiformis</u>	(j)				1		1
<u>Loimia medusa</u>	(k)		1	1			
<u>Mediomastus ambiseta</u>	(l)	23					
<u>Nereis succinea</u>	(m)	2	1	1	1	1	
<u>Paraprionospio pinnata</u>	(n)	1	9	13	2		
<u>Pectinaria gouldii</u>	(o)	33					
<u>Polydora ligni</u>		2					
<u>Pseudeurythoe ambigua</u>	(p)			1			
<u>Streblospio benedicti</u>	(q)	120	7	1			

Taxon		0-2	2-5	5-10	10-15	15-20	20-30	30-40
Nemertea								
<u>Cerebratulus lacteus</u>	(a)	1						
<u>Nemertea frag.</u>		2						
Mollusca								
<u>Acteon punctostriatus</u>		1						
<u>Cratena kaoruae</u>	(c)	3						
<u>Ensis directus</u>	(d)	1	1					
<u>Lyonsia hyalina</u>	(e)	53	7					
<u>Mulinia lateralis</u>	(f)	421	14	8*	1*	1*	3*	
<u>Mya arenaria</u>	(g)	4						
<u>Retusa canaliculata</u>	(h)	5	2*	1*				
Crustacea								
<u>Ampelisca abdita</u>	(i)	53	2					
<u>Corophium tuberculatum</u>	(j)	5						
<u>Leucon americanus</u>	(k)	1	1					
<u>Listriella clymenellae</u>	(l)		1					
<u>Oxyurostylis smithi</u>	(m)	1						
<u>Paracaprella tenuis</u>	(n)	2						
Polychaeta								
<u>Asabellides oculata</u>	(o)	30						
<u>Clymenella torquata</u>	(p)	1	1					
<u>Eteone heteropoda</u>	(q)	36						1*
<u>Glycinde solitaria</u>	(r)	13						
<u>Mediomastus ambiseta</u>	(s)	140		1				
<u>Nereis succinea</u>	(t)	26	5					
<u>Paraprionospio pinnata</u>	(u)	8	19	4		1*		
<u>Pectinaria gouldii</u>	(v)	163	15	4	3*	2*		
<u>Polydora ligni</u>	(w)	3						
<u>Pseudeurythoe ambigua</u>	(x)		3	4	1	3		
<u>Scoloplos fragilis</u>	(y)	1	1	2				
<u>Sigambra tentaculata</u>	(z)	1	1		2	2	1	
<u>Streblospio benedicti</u>	(aa)	229	5	3*			1*	
<u>Tharyx sp.</u>	(bb)		1					
Phoronida								
<u>Phoronis sp.</u>	(cc)	1						

* contamination from surface

(b) Cerianthus americanus in dissecting core

Station 85

6-79

Taxon		0-2	2-5	5-10	10-15	15-20	20-30	30-40	40-50
Nemertea									
<u>Amphiporus bioculatus</u>	(a)		1						
Mollusca									
<u>Mulinia lateralis</u>	(b)	69		1*					
<u>Retusa canaliculata</u>	(c)	9							
Crustacea									
<u>Ampelisca abdita</u>	(d)	22							
<u>Crangon septemspinosa</u>	(e)	1							
Polychaeta									
<u>Eteone heteropoda</u>	(f)	26	3						
<u>Glycera americana</u>	(g)						1		
<u>Glycinde solitaria</u>	(h)	2							
<u>Paraprionospio pinnata</u>	(i)	1	1						
<u>Pectinaria gouldii</u>	(j)	45	2						
<u>Polydora ligni</u>	(k)						1*		
<u>Pseudeurythoe ambigua</u>	(l)		1	1					
<u>Scoloplos fragilis</u>	(m)	1	3	3					
<u>Sigambra tentaculata</u>	(n)			4					
<u>Streblospio benedicti</u>	(o)	11	1	1					
Oligochaeta sp.	(p)	2	2						

* contamination from surface

Station 86 6-79

Taxon		0-2	2-5	5-10	10-15	15-20	20-30
Mollusca							
<u>Mulinia</u>	<u>lateralis</u> (a)	8	2				
Crustacea							
<u>Leucon</u>	<u>americanus</u> (b)	2					
Polychaeta							
<u>Eteone</u>	<u>heteropoda</u> (c)	10					
<u>Pectinaria</u>	<u>gouldii</u> (d)	3	1				
<u>Streblospio</u>	<u>benedicti</u> (e)	22	2				

Taxon		0-2	2-5	5-10	10-15	15-20	20-30	30-45
Platyhelminthes								
<u>Turbellaria sp.</u>	(a)	2		1				
Mollusca								
<u>Acteon punctostriatus</u>		1						
<u>Ensis directus</u>	(b)	6	1					
<u>Lyonsia hyalina</u>	(c)	18	4					
<u>Mya arenaria</u>	(d)	4						
<u>Mulinia lateralis</u>	(e)	1107	44	19*				
<u>Odostomia sp.</u>	(f)	11	1					
<u>Retusa canaliculata</u>	(g)	7	1					
Crustacea								
<u>Ampelisca abdita</u>	(h)	1						
<u>Leucon americanus</u>	(i)	4						
Polychaeta								
<u>Asabellides oculata</u>	(j)	3						
<u>Cabira incerta</u>	(k)			1				
<u>Eteone heteropoda</u>	(l)	10	1					
<u>Glycera americana</u>	(m)		1					
<u>Glycinde solitaria</u>	(n)	7	1					
<u>Lepidametria commensalis</u>	(o)		1					
<u>Loimia medusa</u>	(p)		2					
<u>Mediomastus ambiseta</u>	(q)	50						
<u>Nereis succinea</u>	(r)	1						
<u>Paraprionospio pinnata</u>	(s)	17	39	9	1			
<u>Pectinaria gouldii</u>	(t)	628	39	12	1*	3*		
<u>Polydora ligni</u>	(u)	1						
<u>Scoloplos fragilis</u>	(v)	1	1	3	1			
<u>Sigambra tentaculata</u>	(w)		9	6	3			
<u>Streblospio benedicti</u>	(x)	84	4	1*				

* contamination from surface

Taxon		0-2	2-5	5-10	10-15	15-20	20-30	30-40	40-50
Nemertea									
<u>Tubulanus pellucidus</u>	(a)	1	1						
Mollusca									
<u>Aligena elevata</u>	(b)					1			
<u>Ensis directus</u>	(d)	3	2						
<u>Lyonsia hyalina</u>	(e)	11							
<u>Mulinia lateralis</u>	(f)	161	4	1*					
<u>Mya arenaria</u>	(g)	1							
<u>Retusa canaliculata</u>	(h)	2							
<u>Tellina agilis</u>	(i)	1							
<u>Turbonilla interrupta</u>	(j)	2							
<u>Yoldia limatula</u>	(k)	1							
Crustacea									
<u>Ampelisca abdita</u>	(l)	10							
<u>Corophium tuberculatum</u>	(m)	9	3	1*				2*	
<u>Crangon septemspinosa</u>	(n)	3							
<u>Erichthonius brasiliensis</u>	(o)	10					1*	1*	
<u>Leucon americanus</u>	(p)	11							
<u>Listriella clymenellae</u>	(q)	4	1		2				
<u>Ogyrides limicola</u>	(r)	1							
<u>Paracaprella tenuis</u>	(s)	4	1					1*	
<u>Photis dentata</u>	(t)		1						
Polychaeta									
<u>Asabellides oculata</u>	(u)	5							
<u>Asychis elongata</u>	(v)								1
<u>Clymenella torquata</u>	(w)	4	2			2	1		
<u>Eteone heteropoda</u>	(x)	3							
<u>Glycera americana</u>	(y)					1			
<u>Glyceridae sp.</u>									1
<u>Glycinde solitaria</u>	(z)	7		1					
<u>Gyptis brevipalpa</u>	(aa)			1		1			
<u>Heteromastus filiformis</u>	(bb)			1					
<u>Mediomastus ambiseta</u>	(cc)	42	2						
<u>Nereis succinea</u>	(dd)	2							
<u>Paraprionospio pinnata</u>	(ee)	28	37	7	2				
<u>Pectinaria gouldii</u>	(ff)	142	2						
<u>Polydora ligni</u>	(gg)	8							
<u>Prionospio cirrifera</u>	(hh)		1						
<u>Pseudeurythoe ambigua</u>	(ii)	17	1	1	12	3			
<u>Scoloplos fragilis</u>	(jj)	2							
<u>Sigambra tentaculata</u>	(kk)	2			4	1			
<u>Streblospio benedicti</u>	(ll)	132							
<u>Tharyx sp.</u>	(mm)		1	1					

Station 88

6-79 (continued)

Taxon	0-2	2-5	5-10	10-15	15-20	20-30	30-40	40-50
Asciidiacea								
<u>Molgula manhattensis</u>								
(nn)	1							

* contamination from surface

Taxon		0-2	2-5	5-10	10-15	15-20	20-30
Nemertea							
<u>Tubulanus pellucidus</u>	(a)	1	1	1			
Ectoprocta							
<u>Membranipora</u> sp.		P					
Mollusca							
<u>Aligena elevata</u>	(b)	5	5	1			2
<u>Anadara transversa</u>	(c)	16		1*	2*		3*
<u>Ensis directus</u>	(d)	1					
<u>Lyonsia hyalina</u>	(e)	9					2*
<u>Mitrella lunata</u>		1					
<u>Mulinia lateralis</u>	(f)	5					
<u>Mya arenaria</u>	(g)	1					
<u>Nucula proxima</u>		1					
<u>Retusa canaliculata</u>	(h)	16	1				
<u>Tellina agilis</u>	(i)	3	1				
<u>Turbonilla interrupta</u>	(j)	9					
<u>Yoldia limatula</u>	(k)	6					
Crustacea							
<u>Ampelisca abdita</u>	(l)	26	2	2*		6*	2*
<u>Ampelisca vadorum</u>		1					
<u>Ampelisca verrilli</u>	(m)	1					
<u>Caprella penantis</u>	(n)	63	25*	11*	15*	10*	33*
<u>Corophium tuberculatum</u>	(o)						2*
<u>Edotea triloba</u>	(p)	5	1*	1*			
<u>Erichthonius brasiliensis</u>	(q)	2	6	1*		1*	1*
<u>Erichsonella filiformis</u>			1			1*	
<u>Gammarus mucronatus</u>	(r)			1*			1*
<u>Listriella clymenellae</u>	(s)	7	7	3	4		
<u>Ostracod</u> sp.		1					
Polychaeta							
<u>Arabella iricolor</u>	(t)						1
<u>Arabellidae</u> sp.						1	
<u>Asabellides oculata</u>	(u)	3					
<u>Bhawania goodei</u>	(v)		3	2		1	
<u>Cabira incerta</u>	(w)		1		1		
<u>Capitellidae</u> sp.							1
<u>Clymenella torquata</u>	(x)	80	51	11	5	4	5
<u>Clymenella zonalis</u>	(y)	19	8	3	3	1	
<u>Glycera americana</u>	(z)	1	5		1		
<u>Glycinde solitaria</u>	(aa)	1	1				1*

Taxon		0-2	2-5	5-10	10-15	15-20	20-30
Polychaeta (continued)							
<u>Gyptis brevipalpa</u>	(bb)	1	2				
<u>Harmothoe extenuata</u>	(cc)				1		
<u>Heteromastus filiformis</u>	(dd)	62	39	7	1	2	1
<u>Maldanidae sp.</u>			3	5		1	1
<u>Mediomastus ambiseta</u>	(ee)	34	24	1			
<u>Nereis succinea</u>	(ff)	3			1		2
<u>Owenia fusiformis</u>	(gg)	1					
<u>Paranaitis speciosa</u>	(hh)	2					
<u>Paraprionospio pinnata</u>	(ii)	8	2				2*
<u>Pectinaria gouldi</u>		287	15	10	6*	2*	2*
<u>Phyllodoce mucosa</u>	(jj)	1					
<u>Polydora ligni</u>	(kk)	37	1		1*	1*	8*
<u>Prionospio cirrifera</u>			1				
<u>Pseudeurythoe ambigua</u>	(mm)	37	128	30	33	34	38
<u>Sabellaria vulgaris</u>	(nn)	6	7*	1*	7*	7*	13*
<u>Sigambra tentaculata</u>	(oo)	1	5	2		1	2
<u>Streblospio benedicti</u>		233	33	4*			
<u>Tharyx sp.</u>				3			
<u>Oligochaete sp.</u>		6	5				
Phoronida							
<u>Phoronis sp.</u>			4				
Ascidacea							
<u>Molgula manhattensis</u>		2					

* contamination from surface

Taxon		0-5	5-10	10-18
Nemertea				
<u>Cerebratulus lacteus</u>	(a)		1	
Phoronida				
<u>Phoronis</u> sp.	(b)	1		
Mollusca				
<u>Aligena elevata</u>	(c)	4		1
<u>Ensis directus</u>	(d)	19	9	2
<u>Lyonsia hyalina</u>	(e)	9		
<u>Mulinia lateralis</u>	(f)	27	4	
<u>Mya arenaria</u>	(g)	2		
<u>Tellina agilis</u>	(h)	3	1	1
Crustacea				
<u>Ampelisca abdita</u>	(i)	1		
<u>Chiridotea caeca</u>	(j)	1		
<u>Erichthonius brasiliensis</u>	(k)	1		
<u>Monoculodes edwardsi</u>	(l)	5	1	
<u>Oxyurostylis smithi</u>	(m)	5		1*
<u>Trichophoxus epistomus</u>	(n)	1		
Polychaeta				
<u>Asabellides oculata</u>	(o)	1		
<u>Glycera americana</u>	(p)	22	3	
<u>Heteromastus filiformis</u>	(q)	2	2	1
<u>Mediomastus ambiseta</u>	(r)	9	3	
<u>Nephtyidae</u> sp.	(s)	1		
<u>Pectinaria gouldii</u>	(t)	1		
<u>Polydora ligni</u>	(u)	1		
<u>Pseudeurythoe ambigua</u>	(v)	2	1	7
<u>Scolecoides viridis</u>	(w)		2	
<u>Scolecoides squamata</u>	(x)	1		
<u>Scoloplos fragilis</u>	(y)		1	
<u>Scoloplos rubra</u>	(z)	3	1	2
<u>Spiophanes bombyx</u>	(aa)	194	77	35*
<u>Streblospio benedicti</u>	(bb)	22	4	
<u>Tharyx</u> sp.	(cc)	21	12	2
<u>Travisia carnea</u>	(dd)	1		
<u>Oligochaete</u> sp.	(ee)	87	3	

* contamination from surface

Taxon		0-2	2-5	5-10	10-15	15-20
Nemertea						
<u>Tubulanus pellucidus</u>	(a)	2				
Mollusca						
<u>Acteon punctostriatus</u>	(b)	4				
<u>Aligena elevata</u>	(c)	1		1	1	7
<u>Anadara transversa</u>	(d)	2				
<u>Caecum pulchellum</u>			1			
<u>Ensis directus</u>	(e)	19	5	1		2
<u>Lucina multilinea</u>	(f)		5			
<u>Lyonsia hyalina</u>	(g)	44				2*
<u>Mercenaria mercenaria</u>	(h)	1				
<u>Mulinia lateralis</u>	(i)	37				
<u>Nucula proxima</u>	(j)	3				
<u>Retusa canaliculata</u>	(l)	12	1*			
<u>Tellina agilis</u>	(m)	20				
<u>Turbonilla interrupta</u>	(n)	3				
Crustacea						
<u>Ampelisca abdita</u>	(p)	4				
<u>Ampelisca verrilli</u>	(q)	15				
<u>Callianassa atlantica</u>	(r)				1	
<u>Caprella penantis</u>	(s)	29	1*			
<u>Corophium tuberculatum</u>	(t)	6			1*	
<u>Erichthonius brasiliensis</u>	(u)	7				
<u>Gammarus mucronatus</u>	(v)	4				
<u>Listriella clymenellae</u>	(w)	3	2	4	2	
<u>Monoculodes edwardsi</u>	(x)	1				
<u>Oxyurostylis smithi</u>	(y)	7				
<u>Paracaprella tenuis</u>	(z)					1*
<u>Parametopella cypris</u>		1				
<u>Unciola serrata</u>	(aa)	3				
Polychaeta						
<u>Aricidea catherinae</u>	(bb)		1			
<u>Aricidea wassi</u>	(cc)	1		1		
<u>Asabellides oculata</u>	(dd)	1	1			
<u>Asychis</u> sp.	(ee)					1
<u>Bhawania goodei</u>	(ff)					2
<u>Brania wellfleetensis</u>		3	1	1	2	
<u>Cabira incerta</u>	(gg)	2	2	3	5	4
<u>Capitellidae</u> sp.					1	
<u>Clymenella torquata</u>	(ii)	9	6	2	4	5
<u>Drilonereis magna</u>	(jj)					1

Taxon		0-2	2-5	5-10	10-15	15-20
Polychaeta (continued)						
<u>Eteone heteropoda</u>	(kk)	2				
<u>Glycera americana</u>	(ll)	21	2			1
<u>Glycinde solitaria</u>	(mm)	2				
<u>Goniadides carolinae</u>	(nn)	1				
<u>Heteromastus filiformis</u>	(oo)	12				
<u>Magelona rosea</u>					1	
<u>Mediomastus ambiseta</u>	(pp)	37	2	2		
<u>Nephtys incisa</u>	(qq)	2	1			
<u>Nereis succinea</u>	(rr)	4				
<u>Pectinaria gouldii</u>	(ss)	48				
<u>Polydora ligni</u>	(tt)	45				
<u>Pseudeurythoe ambigua</u>	(uu)	4	5	4	9	22
<u>Sabellaria vulgaris</u>	(vv)	2				
<u>Scoloplos rubra</u>	(ww)			1		
<u>Sigambra tentaculata</u>	(xx)				1	
<u>Spio filicornis</u>	(yy)	1				
<u>Spiophanes bombyx</u>	(zz)	131	42	8		4*
<u>Streblospio benedicti</u>	(ab)	710	18	11*	1*	10*
<u>Tharyx</u> sp.	(ac)	16	1			
<u>Oligochaete</u>		20	1	1	1*	5*
Phoronida						
<u>Phoronis</u> sp.	(ad)	1				

* contamination from surface

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Taxon		0-2	2-5	5-10	10-15	15-20	20-30	30-40	40-50
Mollusca									
<u>Tellina agilis</u>	(a)		1						
Polychaeta									
<u>Asychis elongata</u>	(b)				1				
<u>Glycinde solitaria</u>	(c)	2		1					
<u>Gyptis brevipalpa</u>	(d)					1			
<u>Heteromastus filiformis</u>	(e)						1		
<u>Mediomastus ambiseta</u>	(f)	13	8						
<u>Paraprionospio pinnata</u>	(g)	3	4	4	1			1*	
<u>Pectinaria gouldii</u>	(h)		1	1					
<u>Pseudeurythoe ambigua</u>	(i)								2
<u>Sigambra tentaculata</u>	(j)		1	1		1			
<u>Streblospio benedicti</u>	(k)	11	7						

* contamination from surface

Taxon		0-2	2-5	5-10	10-15	15-20	20-30	30-40	40-50
Platyhelminthes									
<u>Turbellaria</u> sp.	(a)	3							
Nemertea									
<u>Tubulanus pellucidus</u>	(c)	1							
Mollusca									
<u>Ensis directus</u>	(d)	1	1						
<u>Lyonsia hyalina</u>	(e)	2							
<u>Mulinia lateralis</u>	(f)	73	10						
Crustacea									
<u>Ampelisca abdita</u>	(g)	11	3	1*	1*				
<u>Corophium tuberculatum</u>	(h)	6							
<u>Edotea triloba</u>	(i)		1						
<u>Leucon americanus</u>	(j)	25	2						
<u>Ogyrides limicola</u>	(k)	1							
<u>Paracaprella tenuis</u>	(l)		1						
Polychaeta									
<u>Asychis</u> sp.	(m)						1		
<u>Asabellides oculata</u>	(n)	102	23	1					
<u>Eteone heteropoda</u>	(o)	7	2						
<u>Glycinde solitaria</u>	(p)	2	2						
<u>Heteromastus filiformis</u>	(q)							1	
<u>Mediomastus ambiseta</u>	(r)	55	9						
<u>Nereis succinea</u>	(s)	3							
<u>Paraprionospio pinnata</u>	(t)	9	34	13	3				
<u>Pectinaria gouldii</u>	(u)	234	27	4					
<u>Polydora ligni</u>	(v)	3							
<u>Prionospio cirrifer</u>	(w)		1						
<u>Pseudeurythoe ambigua</u>	(x)	3	3	2	1				
<u>Scoloplos fragilis</u>	(y)		1	1					
<u>Sigambra tentaculata</u>	(z)		6	6	1				
<u>Streblospio benedicti</u>	(aa)	176	20	3					
<u>Tharyx</u> sp.	(bb)		1						
<u>Oligochaeta</u> sp.		1							

* contamination from surface

(b) Cerebratulus lacteus found in the dissecting core

Taxon		0-2	2-5	5-10	10-15	15-20	20-30	30-40
Nemertea								
<u>Tubulanus pellucidus</u>	(a)		3	2				
Phoronida								
<u>Phoronis</u> sp.	(b)	1		1				
Mollusca								
<u>Ensis directus</u>	(c)	3	4	1				
<u>Lyonsia hyalina</u>	(d)	6						
<u>Mitrella lunata</u>	(e)	3						
<u>Mulinia lateralis</u>	(f)	21	2					
<u>Odostomia</u> sp.	(g)					1*		
<u>Retusa canaliculata</u>	(h)	8						
<u>Tellina agilis</u>	(i)	18						
<u>Yoldia limatula</u>	(j)	6	1					
Crustacea								
<u>Ampelisca abdita</u>	(k)	25						
<u>Corophium tuberculatum</u>	(l)	17						
<u>Crangon septemspinosa</u>	(m)	1	1					
<u>Edotea triloba</u>	(n)	5						
<u>Erichthonius brasiliensis</u>	(o)	9						
<u>Ostracoda</u> sp.		1						
<u>Paracaprella tenuis</u>	(p)	12	1					
Polychaeta								
<u>Asabellides oculata</u>	(q)	75						
<u>Asychis elongata</u>	(r)						1	
<u>Bhawania goodei</u>	(s)	1	1	6	2			
<u>Cabira incerta</u>	(t)		1	1				
<u>Clymenella zonalis</u>	(u)	4	1	2				
<u>Glycera americana</u>	(v)	2			1			
<u>Glycera</u> sp.			1					
<u>Glycinde solitaria</u>	(w)	5						
<u>Gyptis brevipalpa</u>	(x)			1				
<u>Harmothoe extenuata</u>	(y)	1						
<u>Mediomastus ambiseta</u>	(z)	358	26	3				
<u>Nephtys incisa</u>	(aa)	2						
<u>Nereis succinea</u>	(bb)	6						
<u>Paraprionospio pinnata</u>	(cc)	2						
<u>Pectinaria gouldii</u>	(dd)	2036	42	8	3*	8*	1*	
<u>Polydora ligni</u>	(ee)	36						
<u>Prionospio cirrifer</u>	(ff)	3		5				
<u>Pseudeurythoe ambigua</u>	(gg)	1				1		

Taxon		0-2	2-5	5-10	10-15	15-20	20-30	30-40
Polychaeta (continued)								
<u>Scoloplos</u> sp.	(hh)	1						
<u>Sigambra tentaculata</u>	(ii)	3	4	4	6			
<u>Spio</u> sp.	(jj)	1						
<u>Streblospio benedicti</u>	(kk)	234	10					
<u>Tharyx</u> sp.	(ll)	7	4	6	3*	2*		
Oligochaeta sp.		34	12					
Ascidacea								
<u>Botryllus schlosseri</u>	(mm)					P*		

* contamination from surface

(nn) Thyone briareus found in the dissecting core

(oo) Cerianthus americanus - found in the dissecting core

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Taxon		0-2	2-5	5-10	10-15	15-20	20-30	30-40	40-50
Mollusca									
<u>Ensis directus</u>	(a)	1							
<u>Lyonsia hyalina</u>	(b)	1		1*					
<u>Mulinia lateralis</u>	(c)	155	19	2*		1*			
<u>Mya arenaria</u>	(d)	3	1						
<u>Odostomia sp.</u>	(e)	9	2						
<u>Retusa canaliculata</u>	(f)	1							
<u>Yoldia limatula</u>	(g)	1							
Crustacea									
<u>Leucon americanus</u>	(i)	1	1*						
Polychaeta									
<u>Asabellides oculata</u>	(j)	19	1						
<u>Clymenella torquata</u>	(k)	1							
<u>Eteone heteropoda</u>	(l)	8	1						
<u>Glycera americana</u>	(m)	1				1			
<u>Glycinde solitaria</u>	(n)	5							
<u>Mediomastus ambiseta</u>	(o)	100	1						
<u>Nereis succinea</u>	(p)	1				1			
<u>Paraprionospio pinnata</u>	(q)	14	19	3					
<u>Pectinaria gouldii</u>	(r)	787	88	34	1*	5*	2		
<u>Pseudeurythoe ambigua</u>	(s)	1	1						
<u>Scoloplos fragilis</u>	(t)		1						
<u>Sigambra tentaculata</u>	(u)	1	14	1	1	1			
<u>Streblospio benedicti</u>	(v)	93	1						
<u>Tharyx sp.</u>	(w)	1							

* contamination from surface

Taxon		0-2	2-8
Colenterata			
<u>Edwardsia elegans</u>	(a)	1	
Nemertea			
<u>Cerebratulus lacteus</u>	(b)	3	
Phoronida			
<u>Phoronis</u> sp.	(c)	2	
Mollusca			
<u>Ensis directus</u>		267	25
<u>Lyonsia hyalina</u>	(e)	29	
<u>Mulinia lateralis</u>	(g)	183	4
<u>Tellina agilis</u>	(h)	26	1
Crustacea			
<u>Ampelisca abdita</u>	(i)	1	
<u>Ampelisca verrilli</u>	(j)	1	
<u>Corophium tuberculatum</u>	(k)	2	
<u>Edotea triloba</u>	(l)	3	
<u>Erichthonius brasiliensis</u>	(m)	1	
<u>Gammarus mucronatus</u>	(n)	1	
<u>Monoculodes edwardsi</u>	(o)	1	
<u>Oxyurostylis smithi</u>	(p)	1	
<u>Paracaprella tenuis</u>	(q)	2	1
<u>Pinnotheres</u> sp.	(r)		1
Polychaeta			
<u>Asabellides oculata</u>	(s)	9	
<u>Clymenella torquata</u>	(t)	14	1
<u>Eteone heteropoda</u>		7	
<u>Glycera americana</u>	(v)	28	1
<u>Glycera dibranchiata</u>	(w)		4
<u>Gyptis brevipalpa</u>	(x)		1
<u>Harmothoe extenuata</u>	(y)		1
<u>Magelona rosea</u>	(z)	1	1
<u>Mediomastus ambiseta</u>	(aa)	87	17
<u>Nephtys incisa</u>	(bb)	2	2
<u>Nereis succinea</u>	(cc)	2	
<u>Owenia fusiformis</u>	(dd)	1	
<u>Paraprionospio pinnata</u>	(ee)	3	
<u>Pectinaria gouldii</u>	(ff)	79	3
<u>Polydora ligni</u>	(gg)	11	1
<u>Prionospio pygmae</u>	(hh)	8	2

Station 96

6-79 (continued)

Taxon	0-2	2-8
Polychaeta (continued)		
<u>Pseudeurythoe ambigua</u>	(ii)	1
<u>Sabellaria vulgaris</u>	(jj)	2
<u>Spio setosa</u>	(kk)	1
<u>Spiophanes bombyx</u>	(ll)	131
<u>Streblospio benedicti</u>	(mm)	15
<u>Tharyx</u> sp.	(nn)	250
	6	14
Oligochaetes	1	1

(d) Busycon carica found in dissection core

(f) Mitrella lunata found in dissection core

(u) Diopatra cuprea found in dissection core

Taxon		0-2	2-5	5-10	10-15	15-21
Hydrozoa						
<u>Hydractinia echinata</u>	(a)	P				
<u>Sertularia argentea</u>	(b)	P	P	P	P	P
Nemertea						
<u>Cerebratulus lacteus</u>	(c)	5	1			
<u>Tubulanus pellucidus</u>	(d)	9				
Phoronida						
<u>Phoronis</u> sp.		1				
Mollusca						
<u>Acteon punctostriatus</u>	(e)	1				
<u>Crepidula plana</u>	(f)	2				
<u>Doridella obscura</u>	(g)	1				
<u>Ensis directus</u>	(h)	1				
<u>Lyonsia hyalina</u>	(i)	2				
<u>Mitrella lunata</u>	(j)	3				
<u>Mulinia lateralis</u>	(k)	1				
<u>Mya arenaria</u>	(l)	2				
<u>Mytilus edulis</u>	(m)	5				
<u>Nucula proxima</u>	(n)	1				
<u>Retusa canaliculata</u>	(o)	3				
<u>Tellina agilis</u>	(p)	37				
<u>Yoldia limatula</u>	(q)	1				
Crustacea						
<u>Ampelisca abdita</u>	(r)	2				
<u>Corophium tuberculatum</u>	(s)	16	1			
<u>Crangon septemspinosa</u>	(t)	1				
<u>Edotea triloba</u>	(u)	1				
<u>Erichthonius brasiliensis</u>	(v)	1				
<u>Libinia dubia</u>	(w)	1				
<u>Neomysis americana</u>	(x)	1				
<u>Oxyurostylis smithi</u>	(y)	1				
<u>Paracaprella tenuis</u>	(z)	23	2*	4*	3*	
<u>Parametopella cypris</u>	(aa)	14				
<u>Pleusymtes glaber</u>	(bb)	4				
<u>Unciola serrata</u>	(cc)	8				
Polychaeta						
<u>Asabellides oculata</u>	(dd)	12		1*		
<u>Clymenella torquata</u>	(ee)	2				
<u>Eteone heteropoda</u>	(ff)	3				

Station 97

6-79 (continued)

Taxon		0-2	2-5	5-10	10-15	15-21
Polychaeta (continued)						
<u>Lepidonotus sublevis</u>	(gg)	3				
<u>Mediomastus ambiseta</u>	(hh)	185				
<u>Nephtys incisa</u>	(ii)	4		1		
<u>Nereis succinea</u>	(jj)	7				
<u>Paranaitis speciosa</u>	(kk)	3				
<u>Pectinaria gouldii</u>	(ll)	1951	7	8	1*	
<u>Polydora ligni</u>	(mm)	76				
<u>Proceratea cornuta</u>	(nn)	1				
<u>Pseudeurythoe ambigua</u>	(oo)			3		
<u>Sabellaria vulgaris</u>	(pp)	523	2	9*	1*	
<u>Sigambra tentaculata</u>	(qq)	2	1	2		2
<u>Streblospio benedicti</u>	(rr)	220	1	1*		
<u>Tharyx sp.</u>	(ss)	7	2			

* contamination from surface

Taxon		0-2	2-5	5-13
Nemertea				
<u>Amphiporus bioculatus</u>	(a)	1		
Mollusca				
<u>Ensis directus</u>	(b)	4	3	
<u>Mercenaria mercenaria</u>	(c)	1		1
<u>Mulinia lateralis</u>	(d)	3	3	
<u>Mya arenaria</u>	(e)	6		1
Crustacea				
<u>Edotea triloba</u>	(g)	2		
<u>Idunella</u> sp.	(h)			1
<u>Leucon americanus</u>	(i)	13	4	
<u>Listriella clymenellae</u>	(j)	2	1	1
<u>Neomysis americana</u>	(k)	1		
<u>Pleusymtes glaber</u>	(m)	1		
<u>Unciola serrata</u>	(n)	4	1	
Polychaeta				
<u>Arabella iricolor</u>	(o)		2	1
<u>Aricidea suecica</u>	(p)		1	
<u>Asabellides oculata</u>	(q)	7	6	2
<u>Clymenella torquata</u>	(r)	16	3	8
<u>Eteone heteropoda</u>	(s)	9	4	1
<u>Glycera americana</u>	(t)	3	1	
<u>Glycinde solitaria</u>	(u)	2	1	1
<u>Gyptis brevipalpa</u>	(v)	2	2	
<u>Heteromastus filiformis</u>	(w)	18	11	2
<u>Marphysa sanguinea</u>	(y)			1
<u>Mediomastus ambiseta</u>	(z)	2		
<u>Nereis succinea</u>	(aa)	3	3	1
<u>Pectinaria gouldii</u>	(bb)	40	35	5
<u>Polycirrus eximius</u>	(cc)	37	3	1
<u>Polydora ligni</u>	(dd)	2	1	
<u>Pseudeurythoe ambigua</u>	(ee)	5		2
<u>Scoloplos rubra</u>	(ff)	1	2	
<u>Spio setosa</u>	(gg)	2		
<u>Streblospio benedicti</u>	(hh)	178	80	13
<u>Syllis cornuta</u>	(ii)	1	1	
<u>Tharyx</u> sp.	(jj)	3	1	1
Oligochaeta sp.	(kk)	22	26	2

(f) Callianassa atlantica found in the dissection core

(l) Pinnixa sp. found in dissection core

Station 99

6-79

Taxon		0-5	5-10	10-15	15-20	20-30	30-39
Nemertea							
<u>Tubulanus pellucidus</u>	(a)	1					
Phoronida							
<u>Phoronis</u> sp.	(b)	3					
Mollusca							
<u>Ensis directus</u>	(c)	3	3				
<u>Lyonsia hyalina</u>	(d)		1				
<u>Mulinia lateralis</u>	(e)	2					
<u>Tellina agilis</u>	(g)	2					
Polychaeta							
<u>Asabellides oculata</u>	(h)	2					
<u>Asychis elongata</u>	(i)				1		
<u>Glycera americana</u>					1		
<u>Glycera</u> sp.	(j)	1					
<u>Glycinde solitaria</u>	(k)	1					
<u>Pectinaria gouldii</u>	(l)	70	39	25*	8*	4*	
<u>Pseudeurythoe ambigua</u>	(m)		2	2			
<u>Sigambra tentaculata</u>	(n)					1	
<u>Streblospio benedicti</u>	(o)	12					
<u>Tharyx</u> sp.	(p)	3					
Oligochaeta sp.	(q)	9					

* contamination from surface

Taxon		0-8
Nemertea		
<u>Tubulanus pellucidus</u>	(a)	1
Phoronida		
<u>Phoronis</u> sp.	(b)	3
Mollusca		
<u>Ensis directus</u>	(c)	23
<u>Nassarius trivittatus</u>	(d)	3
<u>Tellina agilis</u>	(e)	34
Crustacea		
<u>Pagurus longicarpus</u>	(f)	1
<u>Parametopella cypris</u>		4
<u>Unciola irrorata</u>	(g)	3
Polychaeta		
Capitellidae sp. A	(h)	346
Capitellidae sp. B		1
<u>Drilonereis longa</u>	(i)	3
<u>Glycera americana</u>	(j)	3
<u>Glycera</u> sp.		4
<u>Magelona rosea</u>	(k)	1
<u>Mediomastus ambiseta</u>	(l)	86
<u>Nephtys incisa</u>	(m)	1
<u>Pectinaria gouldii</u>	(o)	4
<u>Polydora ligni</u>	(p)	1
<u>Polydora socialis</u>	(q)	1
<u>Polygordius</u> sp.	(r)	4
<u>Prionospio pygmaea</u>	(s)	15
<u>Scoloplos acutus</u>	(t)	1
<u>Spio setosa</u>	(u)	1
<u>Spiophanes bombyx</u>	(v)	7
<u>Streblospio benedicti</u>	(w)	8
<u>Tharyx</u> sp.	(x)	25
Oligochaeta sp.		4

(h) Onuphis eremita found in dissection core

Taxon		0-2	2-5	5-10	10-15	15-20	20-30	30-45
Colenterata								
<u>Anthozoa</u> sp.	(a)		1					
<u>Sertularia argentea</u>	(b)	P	P	P*		P*	P*	P*
Nemertea								
<u>Tubulanus pellucidus</u>	(c)	2						
Ectoprocta								
<u>Aeverillia armata</u>	(d)	P	P*	P*		P*		P
<u>Electra crustulenta</u>	(e)	P	P*	P*		P*		
Phoronida								
<u>Phoronis</u> sp.	(f)							
Mollusca								
<u>Aligena elevata</u>	(g)	3		1	1			
<u>Anadara transversa</u>	(h)	68	34*	28*	2*	2*	11*	11*
<u>Doridella obscura</u>	(i)	6						
<u>Lyonsia hyalina</u>	(j)	1						
<u>Mitrella lunata</u>	(k)	69	5*	4*	2*		1*	2*
<u>Mulinia lateralis</u>	(l)				1*			
Crustacea								
<u>Ampelisca vadorum</u>	(m)	7		2*				1*
<u>Corophium</u> sp.	(n)						1*	
<u>Edotea triloba</u>	(o)	1				1*		
<u>Elasmopus levis</u>	(p)	9	4	1*				
<u>Erichthonius brasiliensis</u>	(q)	1						
<u>Gammarus mucronatus</u>	(r)	8	2				1*	
<u>Listriella clymenellae</u>	(s)			3		1		
<u>Neopanope texana sayi</u>	(t)	3						
<u>Ostracoda</u> sp.		1		1*				
<u>Paracaprella tenuis</u>	(u)	63	6*	14*	1*	8*	38*	68*
<u>Parametopella cypris</u>	(v)	2						
Polychaeta								
<u>Amphitrite ornata</u>	(w)	1	5	2				
<u>Capitellidae</u> sp.				1				
<u>Chrysopetalidae</u> sp.					1			
<u>Clymenella torquata</u>	(x)		3	9	6	5	3	1*
<u>Eteone heteropoda</u>	(y)	20	2	4*		2*	1*	
<u>Glyceridae</u> sp.				3				
<u>Glycinde solitaria</u>	(z)	1	3	1	1			
<u>Gyptis brevipalpa</u>	(aa)				1			

Taxon		0-2	2-5	5-10	10-15	15-20	20-30	30-45
Polychaeta (continued)								
Hesionidae					3*	1*		
<u>Heteromastus filiformis</u>	(bb)				1	2		
Maldanidae sp.		31	4	2				
<u>Mediomastus ambiseta</u>	(cc)	52	7	6*				
<u>Nereis succinea</u>	(dd)	302	53	23	5		5	10
<u>Paraprionospio pinnata</u>	(ee)	3	6	7	3			
<u>Pectinaria gouldii</u>	(ff)				1*			
<u>Podarke obscura</u>	(gg)	1		1				
<u>Polydora ligni</u>		342	56	8*	6*			
Polynoidae sp.	(hh)	1						
<u>Pseudeurythoe ambigua</u>	(ii)	1	11	71	44	50	1	2
<u>Sabella microphthalma</u>	(jj)	32	22	16*	1*	1*	1*	
<u>Sabellaria vulgaris</u>	(kk)	10	4	8*		1*		
<u>Scolecoides viridis</u>	(ll)	3						
<u>Sigambra tentaculata</u>	(mm)				1			
<u>Streblospio benedicti</u>	(nn)	1						
Syllidae sp.	(oo)	1						
Syllidae sp. A		1						
Ascidacea								
<u>Botryllus schlosseri</u>	(pp)	P	P*	P*	P*	P*	P*	P*
<u>Molgula manhattensis</u>	(qq)	2	14	2*	1*		1*	

* contamination from surface

Taxon	0-2	2-5	5-10	10-15	15-20	20-30	30-37
Colenterata							
Anthozoa sp.	2			1			
<u>Sertularia argentea</u>	P	P*	P*		P*	P*	P*
Nemertea							
<u>Cerebratulus lacteus</u>		1					
<u>Tubulanus pellucidus</u>		1					
Ectoprocta							
<u>Aeверrillia armata</u>			P*				
<u>Electra crustulenta</u>	P*	P*		P*			
Mollusca							
<u>Anadara ovalis</u>	2						
<u>Anadara transversa</u> (a)	99	32*	19*	14*	4*	1*	46*
<u>Lynosia hyalina</u>	1						
<u>Mulinia lateralis</u>	6						
<u>Odostomia</u> sp.	1						
<u>Retusa canaliculata</u>	5	1*	1*				
<u>Turbonilla interrupta</u>	1						
<u>Yoldia limatula</u> (b)	1						
Crustacea							
<u>Ampelisca vadorum</u>	1						
<u>Corophium tuberculatum</u>	2	1	1*	1*	1*		1*
<u>Edotea triloba</u>	2						
<u>Elasmopus levis</u>	1						
<u>Erichthonius brasiliensis</u>				1*			
<u>Gammarus mucronatus</u>			1				
<u>Leucon americanus</u>	1						
Ostracoda sp.	1	1*	1*				1*
<u>Paracaprella tenuis</u>	2	1*		4*			
<u>Pinnixia retinens</u>		2	1				
Polychaeta							
<u>Asabellides oculata</u>	1						
<u>Eteone heteropoda</u>	2		1*				
<u>Glycera americana</u> (c)		1					
<u>Glycinde solitaria</u>	8	2	10				
<u>Lepidametria commensalis</u>	1						
<u>Lepidonotus sublevis</u>			1				
Maldanidae sp.	1						
<u>Mediomastus ambiseta</u>	24	6	5*				
<u>Nereis succinea</u>	18	4	2		1	1	3

Taxon	0-2	2-5	5-10	10-15	15-20	20-30	30-37
Polychaeta (continued)							
<u>Orbiniidae</u> sp.	1						
<u>Paraprionospio pinnata</u> (d)	6	20					
<u>Pectinaria gouldii</u> (e)	19	1					
<u>Polydora ligni</u>	14	3	4*		1*		1*
<u>Pseudeurythoe ambigua</u>		1	1		1		
<u>Sabellaria vulgaris</u>	2						
<u>Scolecopides viridis</u>	1	1					
<u>Scoloplos foliosus</u>	1						
<u>Scoloplos</u> sp.			1				
<u>Sigambra tentaculata</u>	1	12	1		1		15
<u>Streblospio benedicti</u>	2						
Ascidacea							
<u>Botryllus schlosseri</u>	P		P*		P*	P*	P*
<u>Molgula manhattensis</u>	5						

* contamination from surface

Taxon	0-2	2-5	5-10	10-15	15-20	20-30	30-40
Colenterata							
<u>Ceriantheopsis americanus</u>			1				
Nemertea							
<u>Cerebratulus lacteus</u>				1			
<u>Tubulanus pellucidus</u>	2		1				
Mollusca							
<u>Acteon punctostriatus</u>	1						
<u>Anadara transversa</u>	1						
<u>Bivalve sp.</u>	1						
<u>Cylichna alba</u>	1						
<u>Gemma gemma</u>	1						
<u>Nassarius trivittatus</u>	1						
<u>Odostomia sp.</u>	5						
<u>Retusa canaliculata</u>	4						
<u>Tellina agilis</u>	13	1					
<u>Turbonilla interrupta</u>	7						
<u>Yoldia limatula</u>	7						
Crustacea							
<u>Ampelisca vadorum</u>	2	1					
<u>Edotea triloba</u>	2						
<u>Listriella clymenellae</u>	1		2				
<u>Ostracoda sp.</u>	9						
<u>Paracaprella tenuis</u>	1						
<u>Photis dentata</u>	2						
Polychaeta							
<u>Asabellides oculata</u>	3						
<u>Cabira incerta</u>	1	1	2			1	
<u>Clymenella torquata</u>	1						
<u>C. zonalis</u>	5	7	5				
<u>Glycera americana</u>		4					
<u>Glycinde solitaria</u>	12						
<u>Harmothoe extenuata</u>	2						
<u>H. sp. A</u>		2					
<u>Heteromastus filiformis</u>	4						
<u>Loimia medusa</u>			1				
<u>Maldanidae sp.</u>			5				
<u>Mediomastus ambiseta</u>	509	15					
<u>Nephtys incisa</u>	4						
<u>Paleanotus heteroseta</u>			1				
<u>Paraprionospio pinnata</u>	1						

Taxon	0-2	2-5	5-10	10-15	15-20	20-30	30-40
Polychaeta (continued)							
<u>Pectinaria gouldii</u>		1					
<u>Phyllodoce arenae</u>		1					
<u>Polydora ligni</u>	9						
<u>Prionospio cirrobranchiata</u>	1						
<u>Prionospio</u> sp.				1*			
<u>Sigambra tentaculata</u>	1		4	1			
<u>Spiochaetopterus oculatus</u>	1	1					
<u>Spionidae</u> sp.		1					
<u>Spiophanes wigleyi</u>		1					
<u>Tharyx</u> sp.		3	2				
<u>Westerinereis tridentata</u>			1				

Appendix C

Three-dimensional drawings representing distribution and life
style of organisms in a box core at each station*

* letters refers to species listed in Appendix B for Stations
76-105.

Station 26

MOLLUSCA

- a. Retusa canaliculata
- b. Mulinia lateralis

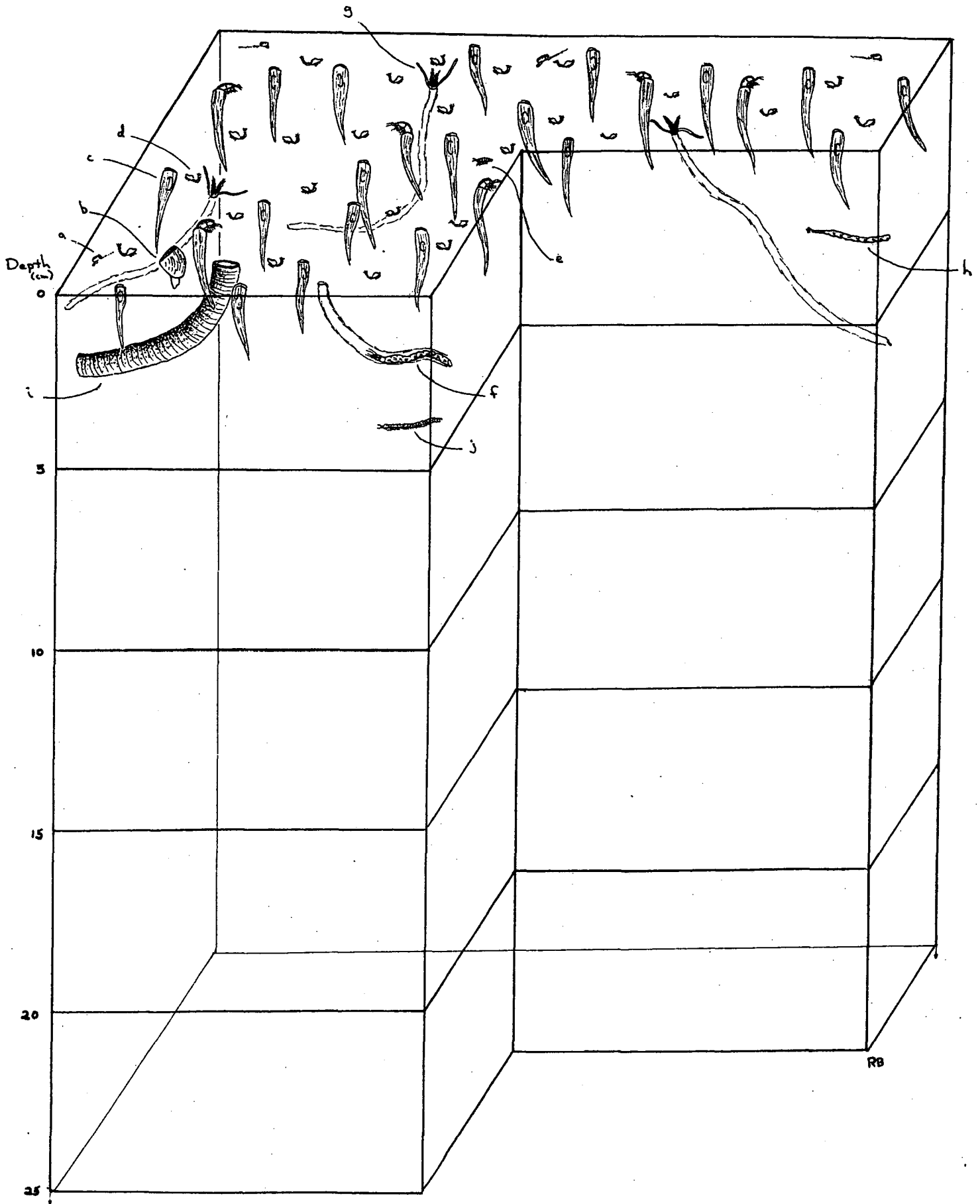
CRUSTACEA

- c. Ampelisca abdita
- d. Leucon americanus
- e. Edotea triloba

POLYCHAETA.

- f. Nereis succinea
- g. Paraprionospio pinnata
- h. Glycinde solitaria
- i. Loimia medusa
- j. Paranaitis speciosa

STATION 26



Station 27

MOLLUSCA

- a. Retusa canaliculata

CRUSTACEA

- b. Ampelisca abdita

- c. Listriella clymenellae

POLYCHAETA

- d. Paraprionospio pinnata

- e. Spiophanes sp.

- f. Clymenella torquata

- g. Pseudoeurythoe ambigua

- h. Ancistrosyllis hartmanae

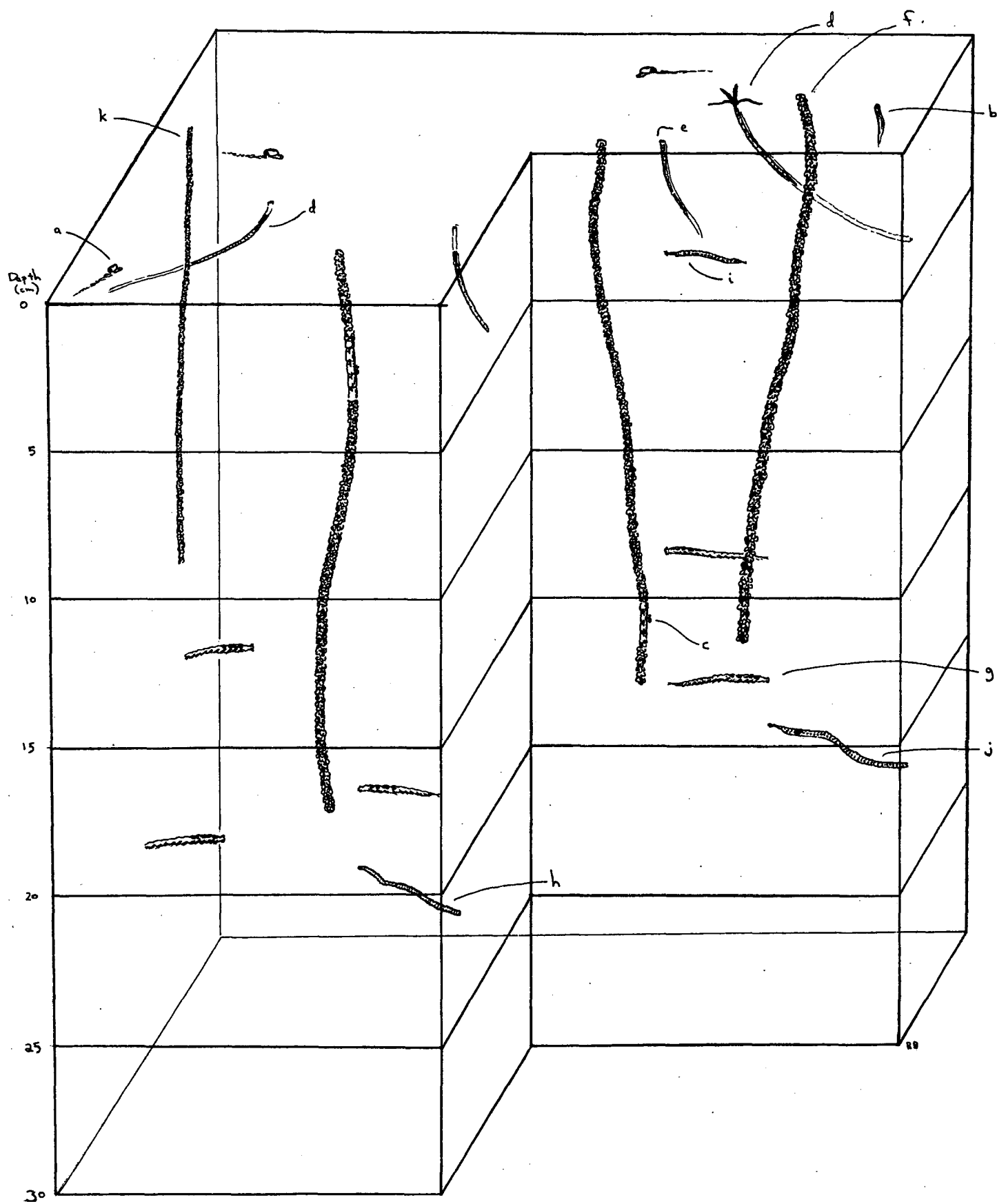
- i. Glycinde solitaria

- j. Glycera dibranchiata

PHORONIDA

- k. Phoronid

STATION 27



Station 28

MOLLUSCA

- a. Anadara transversa

CRUSTACEA

- b. Pinnixa retinens

POLYCHAETA

- c. Glycinde solitaria

- d. Nereis succinea

- e. Chaetopterus variopedatus

- f. Paraprionospio pinnata

- g. Pseudoeurythoe ambigua

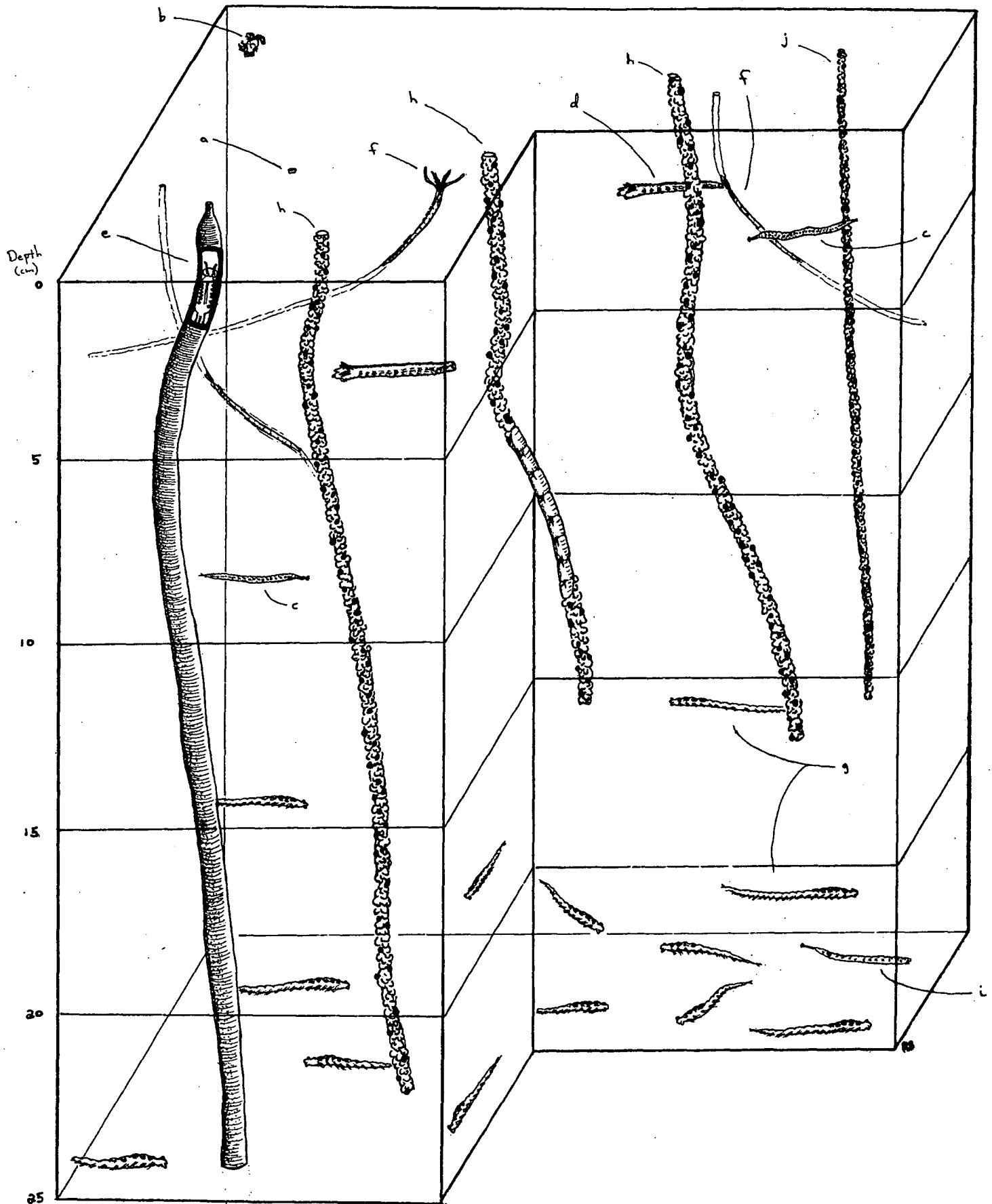
- h. Clymenella torquata

- i. Glycera dibranchiata

PHORONIDA

- j. Phoronis sp.

STATION 28



Station 29

MOLLUSCA

- a. Retusa canaliculata
- b. Odostomia impressa
- c. Ensis directus
- d. Mulinia lateralis

CRUSTACEA

- e. Ampelisca verrilli
- f. Ampelisca abdita
- g. Cyathura polita
- h. Ostracod

POLYCHAETA

- i. Glycera dibranchiata
- j. Tharyx sp.
- k. Loimia medusa
- l. Drilonereis longa
- m. Pseudoeurythoe ambigua
- n. Scoloplos rubra
- o. Ancistrosyllis hartmanae

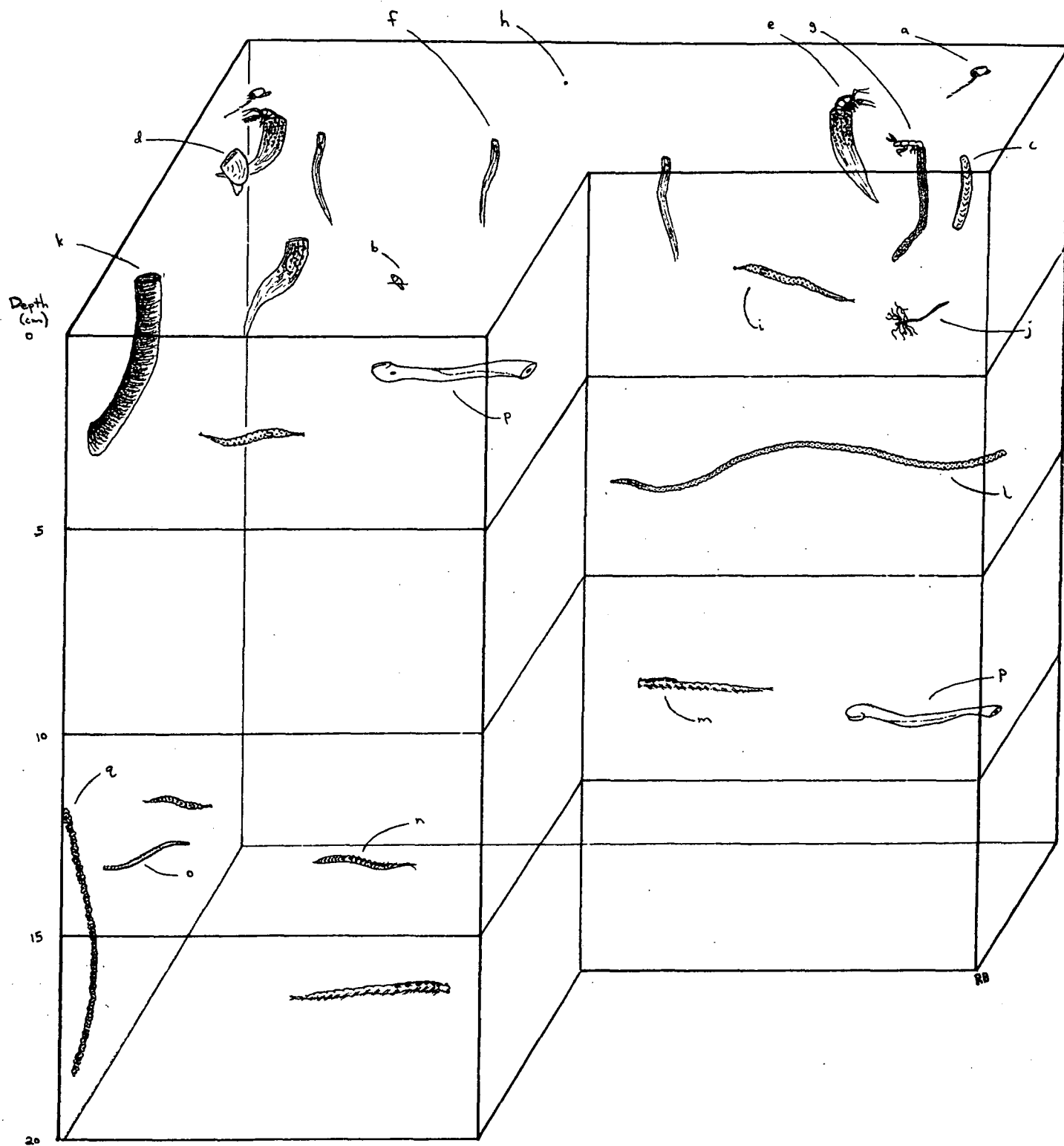
NEMERTEA

- p. Cerebratulus lacteus

PHORONIDA

- q. Phoronis sp.

STATION 29



Station 30

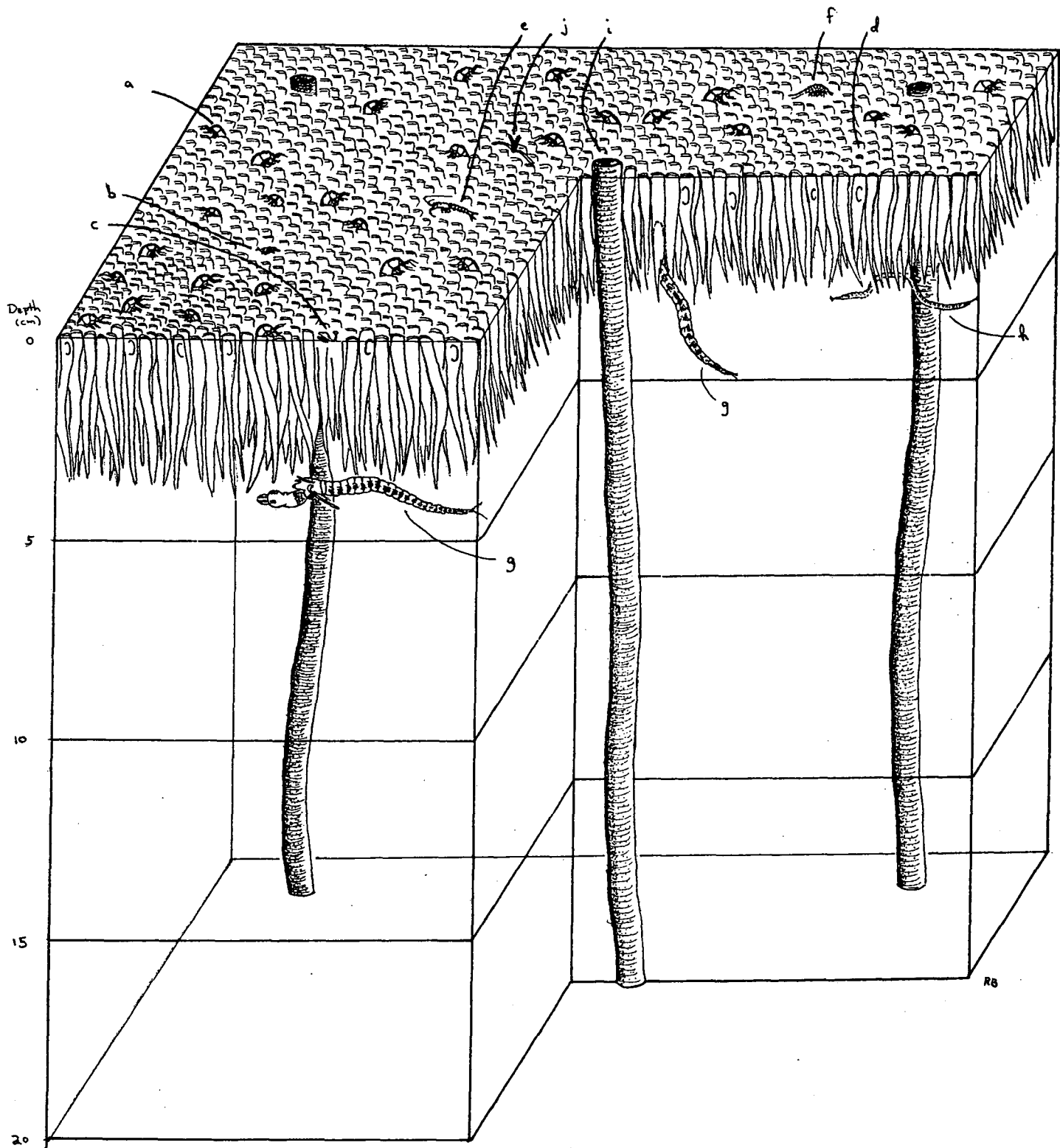
CRUSTACEA

- a. Ampelisca abdita
- b. Edotea triloba
- c. Leucon americanus
- d. Ostracod
- e. Neomysis americanus
- f. Melita nitida

POLYCHAETA

- g. Nereis succinea
- h. Glycinde solitaria
- i. Loimia medusa
- j. Paraprionospio pinnata

STATION 30

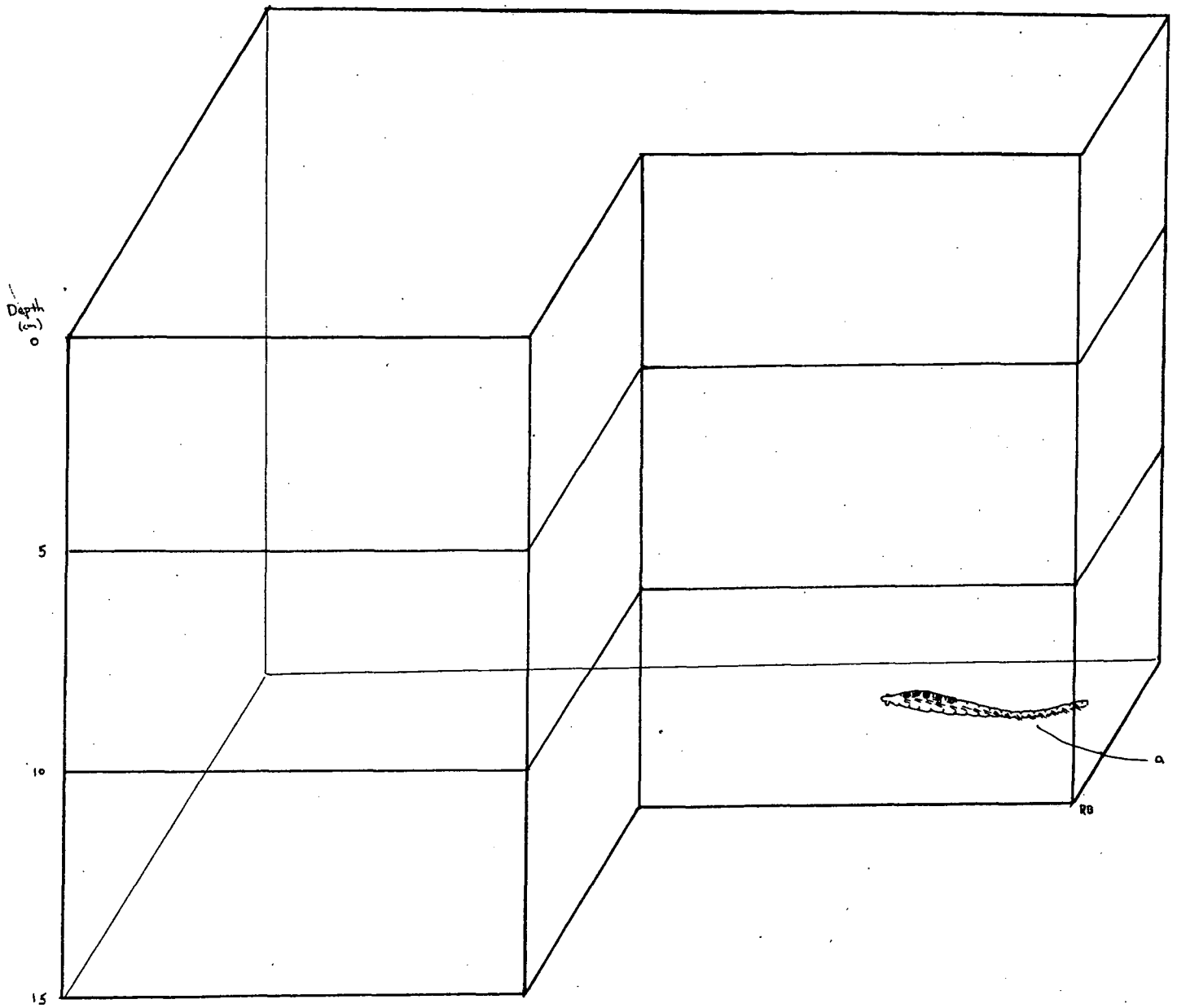


Station 31

POLYCHAETA

a. Pseudoeurythoe ambigua

STATION 31



Station 32

MOLLUSCA

- a. Retusa canaliculata
- b. Anadara transversa

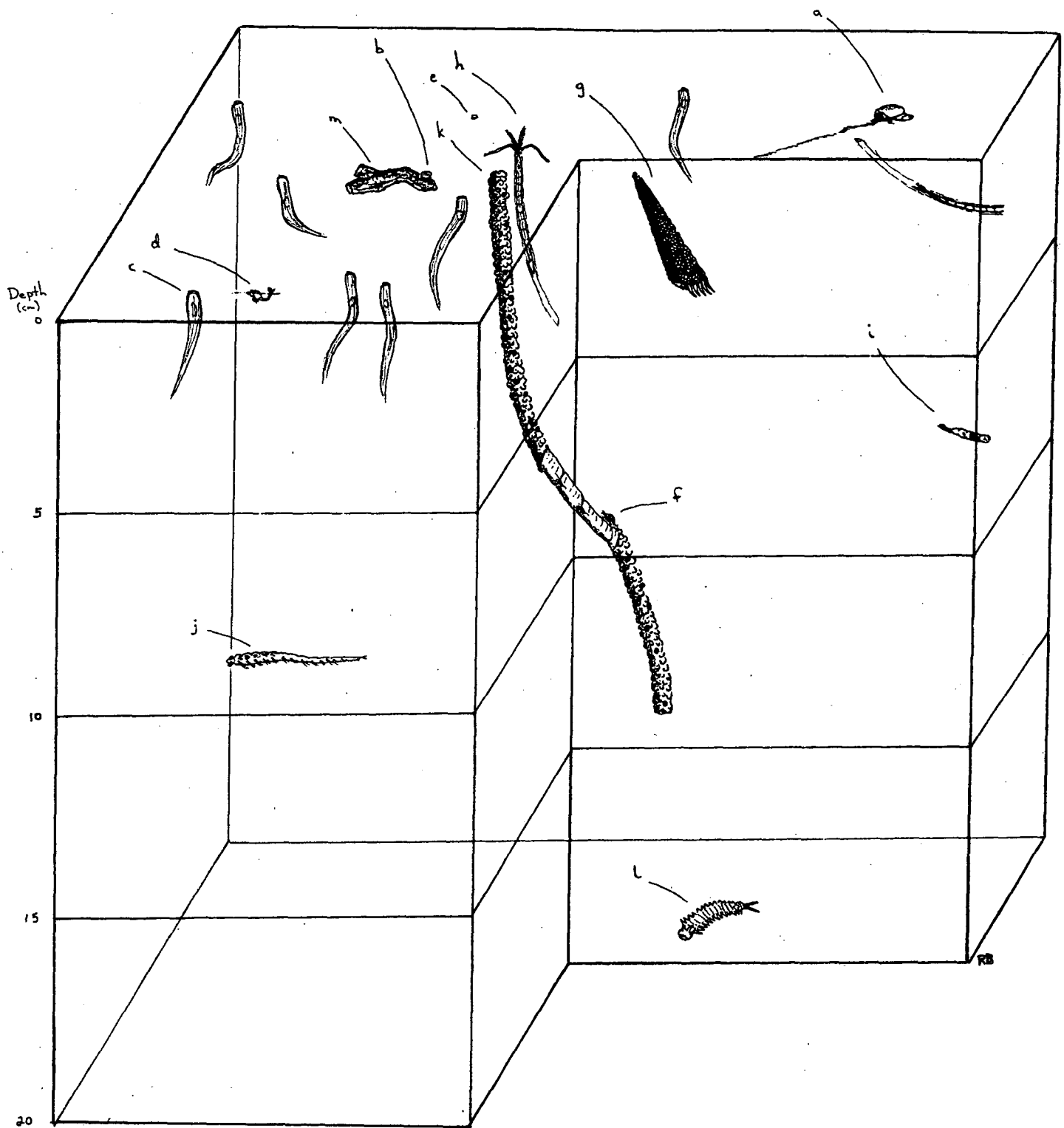
CRUSTACEA

- c. Ampelisca abdita
- d. Diastylis polita
- e. Ostracod
- f. Listriella clymenellae

POLYCHAETA

- g. Pectinaria gouldii
- h. Paraprionospio pinnata
- i. Glycera dibranchiata
- j. Pseudoeurythoe ambigua
- k. Praxillela gracilis
- l. Sigambra tentaculata
- m. empty tube of Sabellaria vulgaris

STATION 32



Station 33

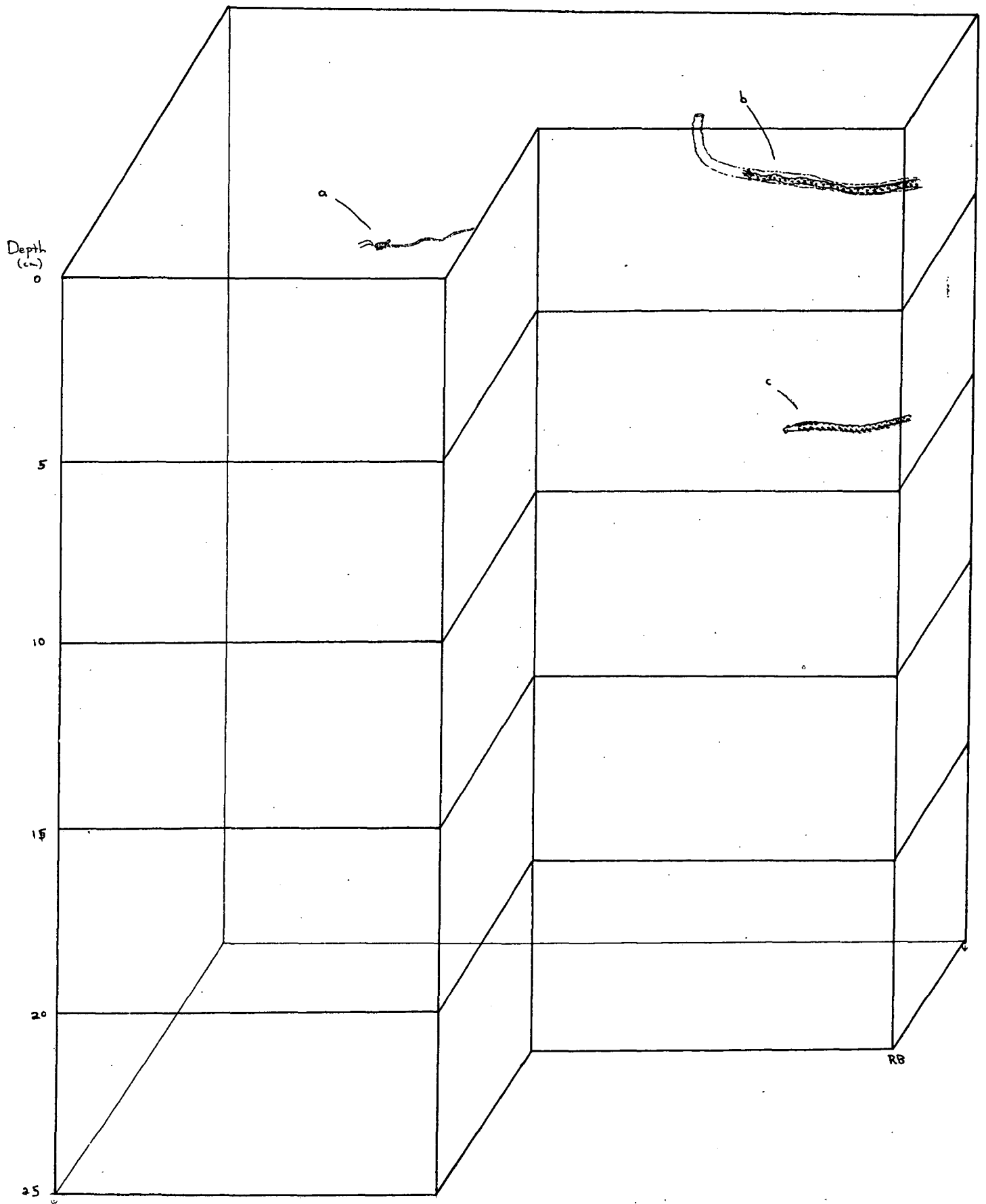
CRUSTACEA

- a. Unciola irrorata

POLYCHAETA

- b. Nereis succinea
c. Pseudoeurythoe ambigua

STATION 33



Station 34

MOLLUSCA

- a. Retusa canaliculata
- b. Odostomia sp.

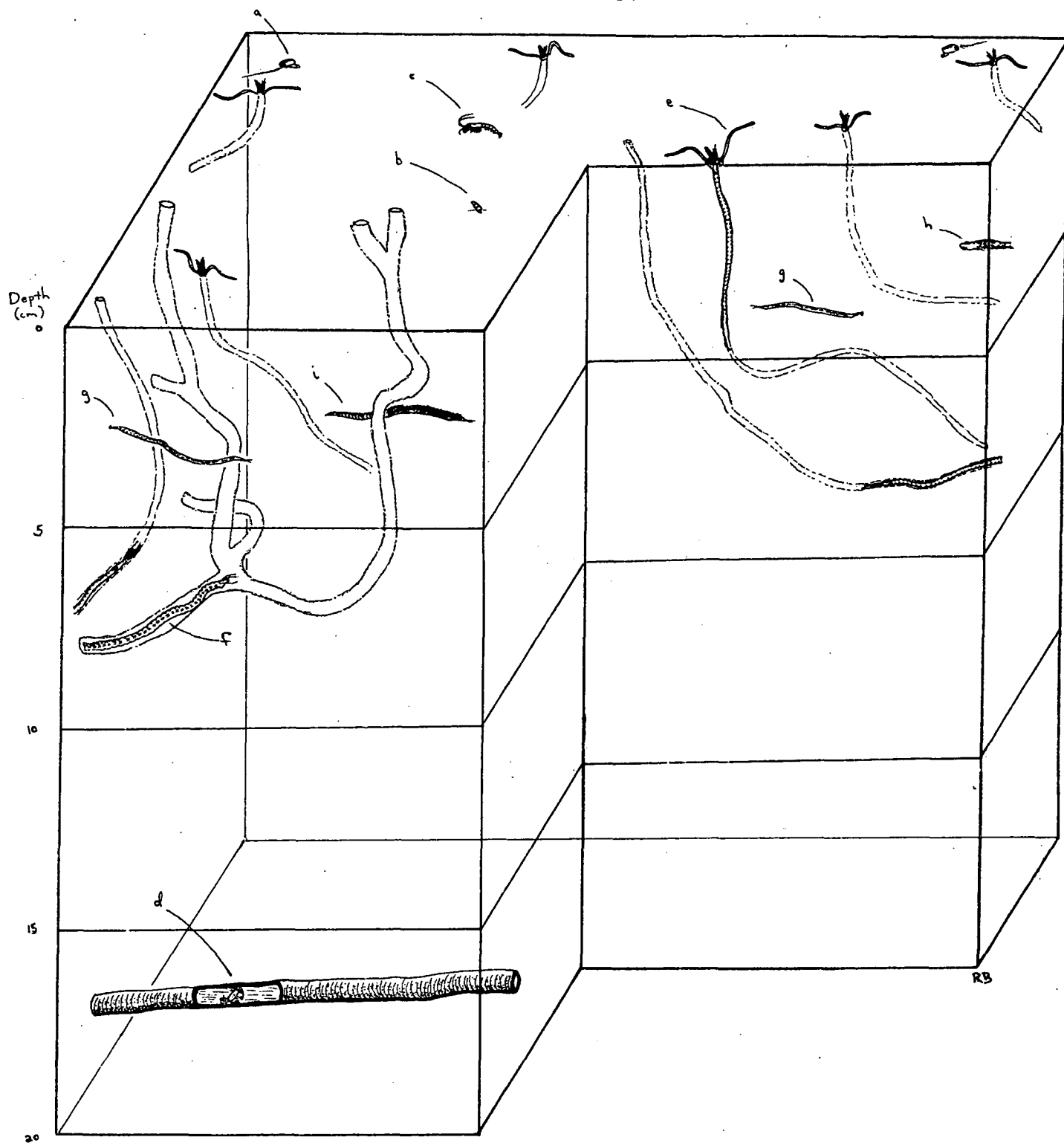
CRUSTACEA

- c. Neomysis americana
- d. Pinnixa retinens

POLYCHAETA

- e. Paraprionospio pinnata
- f. Nereis succinea
- g. Glycinde solitaria
- h. Pseudoeurythoe ambigua
- i. Orbiniidae

STATION 34



Station 35

MOLLUSCA

- a. Retusa canaliculata
- b. Anadara transversa
- c. Turbonilla interrupta
- d. Anachis translirata

CRUSTACEA

- e. Pinnixa retinens
- f. Pinnixa chaetopterana
- g. Ostracod
- h. Ampelisca abdita
- i. Listriella clymenellae
- j. Paracaprella tenuis
- k. Corophium sp. (juv)

ECHINODERMATA

- l. Micropholis atra

POLYCHAETA

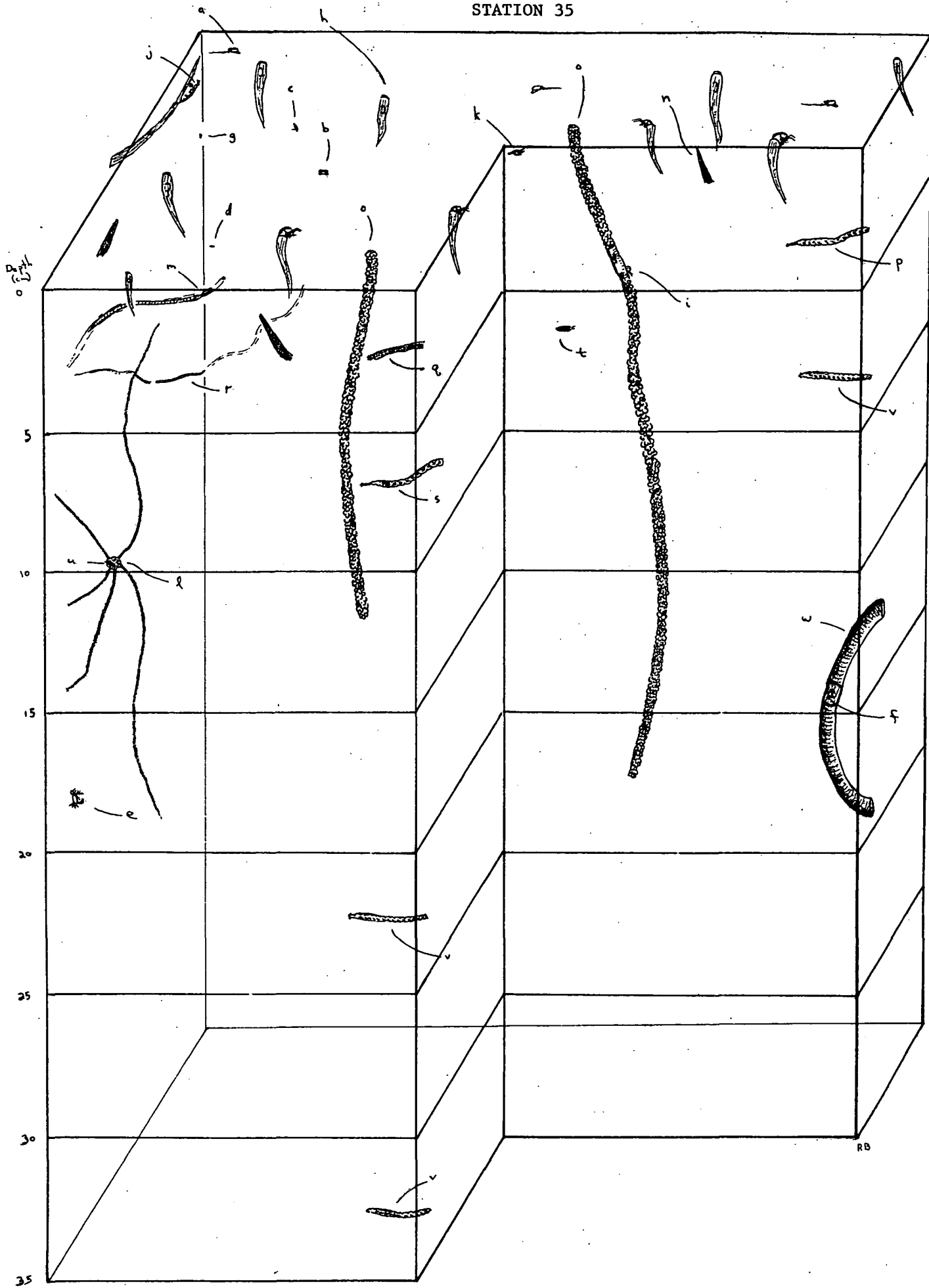
- m. Paraprionospio pinnata
- n. Pectinaria gouldii
- o. Clymenella torquata
- p. Glycinde solitaria
- q. Nephtyidae
- r. Notomastus sp.
- s. Glycera americana

Station 35 (continued)

POLYCHAETA (cont.)

- t. Paleanotus heteroseta
- u. Harmothoe sp. A (located on the disk of Micropholis atra)
- v. Pseudoeurythoe ambigua
- w. empty Chaetopterid tube

STATION 35



Station 36.

MOLLUSCA

- a. Anadara transversa
- b. Retusa canaliculata
- c. Turbonilla interrupta

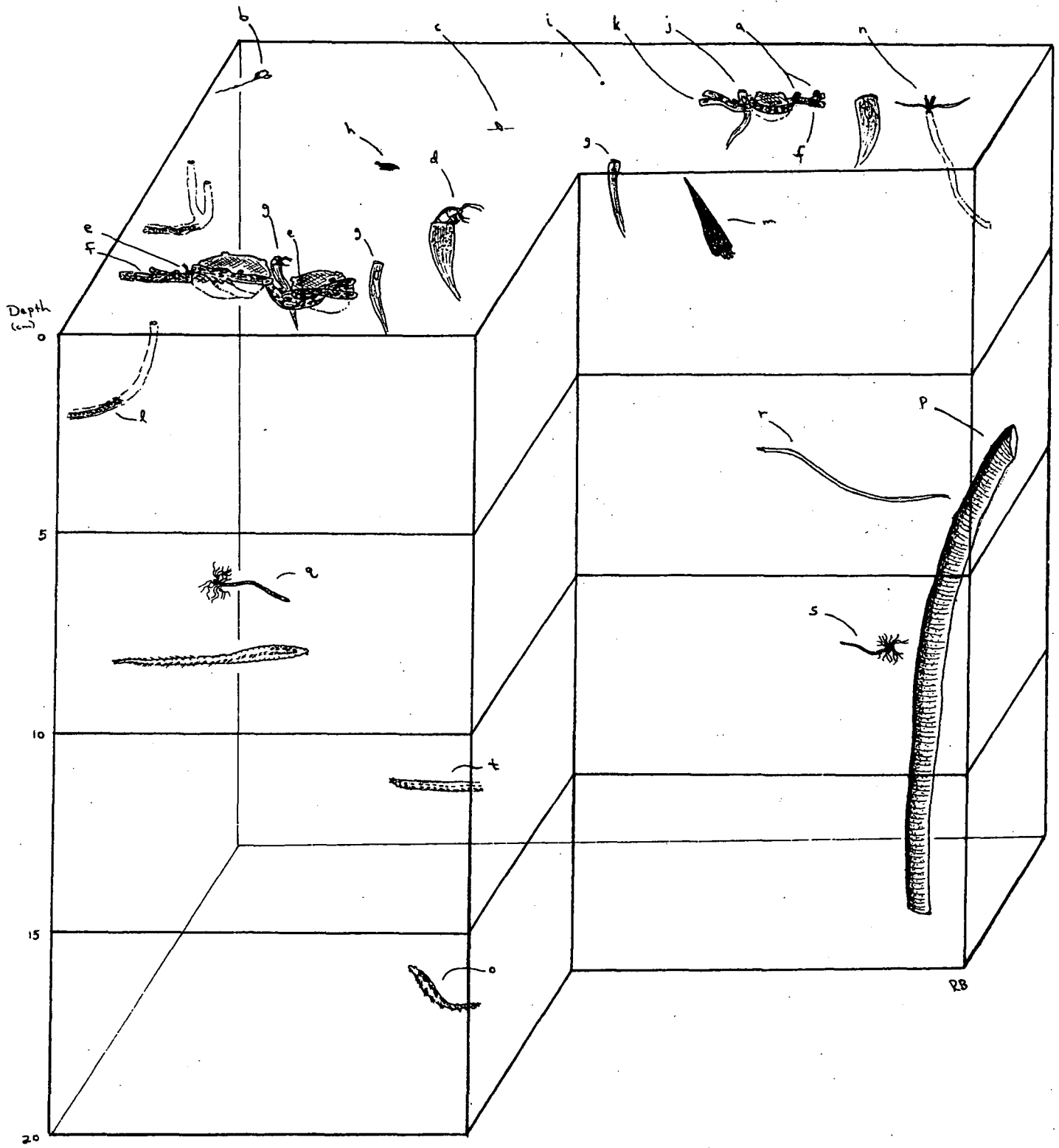
CRUSTACEA

- d. Ampelisca verrilli
- e. Unciola serrata (found with Sabellaria vulgaris)
- f. Corophium tuberculatum (found inside tubes of S. vulgaris)
- g. Ampelisca abdita
- h. Edotea triloba
- i. Ostracod
- j. Ampelisca vadorum

POLYCHAETA

- k. Sabellaria vulgaris
- l. Nereis succinea
- m. Pectinaria gouldii
- n. Paraprionospio pinnata
- o. Pseudoeurythoe ambigua
- p. Ampharetidae
- q. Tharyx sp.
- r. Polygordius sp.
- s. Cirratulidae
- t. Nephtyidae

STATION 36



A STUDY OF DREDGING EFFECTS IN HAMPTON ROADS, VIRGINIA

Final Contract Report

prepared for:

U. S. Army Corps of Engineers
Norfolk District
803 Front Street
Norfolk, Virginia 23510

under Contract No. DACW65-78-C-0029

by

Virginia Institute of Marine Science
School of Marine Science
College of William and Mary
Gloucester Point, Virginia 23062

Walter I. Priest, III, Editor

March, 1981

Special Report in Applied Marine Science
and Ocean Engineering No. 247

Station 37

MOLLUSCA

- a. Mulinia lateralis

CRUSTACEA

- b. Neomysis americana

POLYCHAETA

- c. Glycera dibranchiata

- d. Paraprionospio pinnata

- e. Pseudoeurythoe ambigua

- f. Ampharetidae

- g. Bhawania goodei

- h. Ancistrosyllis jonesi

- i. Ancistrosyllis hartmanae

- j. Drilonereis longa

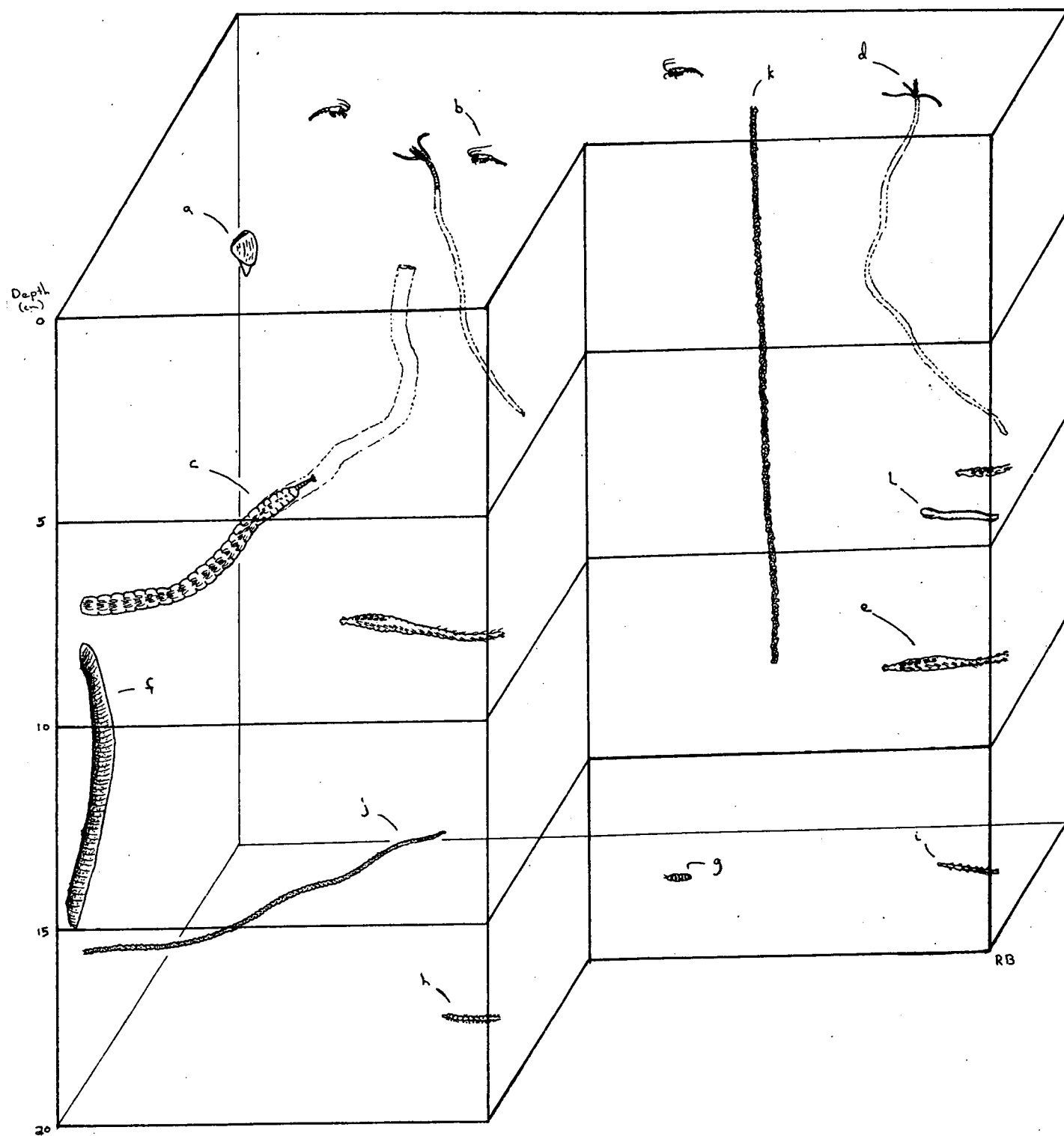
PHORONIDA

- k. Phoronid

NEMERTINA

- l. Nemertea sp.

STATION 37



Station 38

MOLLUSCA

- a. Mulinia lateralis

CRUSTACEA

- b. Ostracod

POLYCHAETA

- c. Pectinaria gouldii

- d. Glycinde solitaria

- e. Paleanotus heteroseta

- f. Paraprionospio pinnata

- g. Loimia medusa

- h. Glycera americana

- i. Pseudoeurythoe ambigua

A 3D perspective diagram of a 4x4x4 grid, similar to a Rubik's Cube, with various labeled objects placed within the cells. The grid is composed of 64 smaller cubes. The objects are labeled as follows:

- a**: A small cup-like object in the top-right corner.
- b**: A small cone-like object in the top-middle section.
- c**: A small cone-like object in the top-middle section.
- d**: A small cone-like object in the top-middle section.
- e**: A small insect-like object in the top-middle section.
- f**: A long thin object in the top-middle section.
- g**: A large curved tube in the top-middle section.
- h**: A long thin object with a textured surface in the middle section.
- i**: A long thin object with a textured surface in the middle section.

RB

Station 39

MOLLUSCA

- a. Turbonilla interrupta

CRUSTACEA

- b. Trichophoxus epistomus
c. Pinnixa chaetopterana
d. Ampelisca verrilli
e. Ptilanthura tenuis
f. Callianassa atlantica

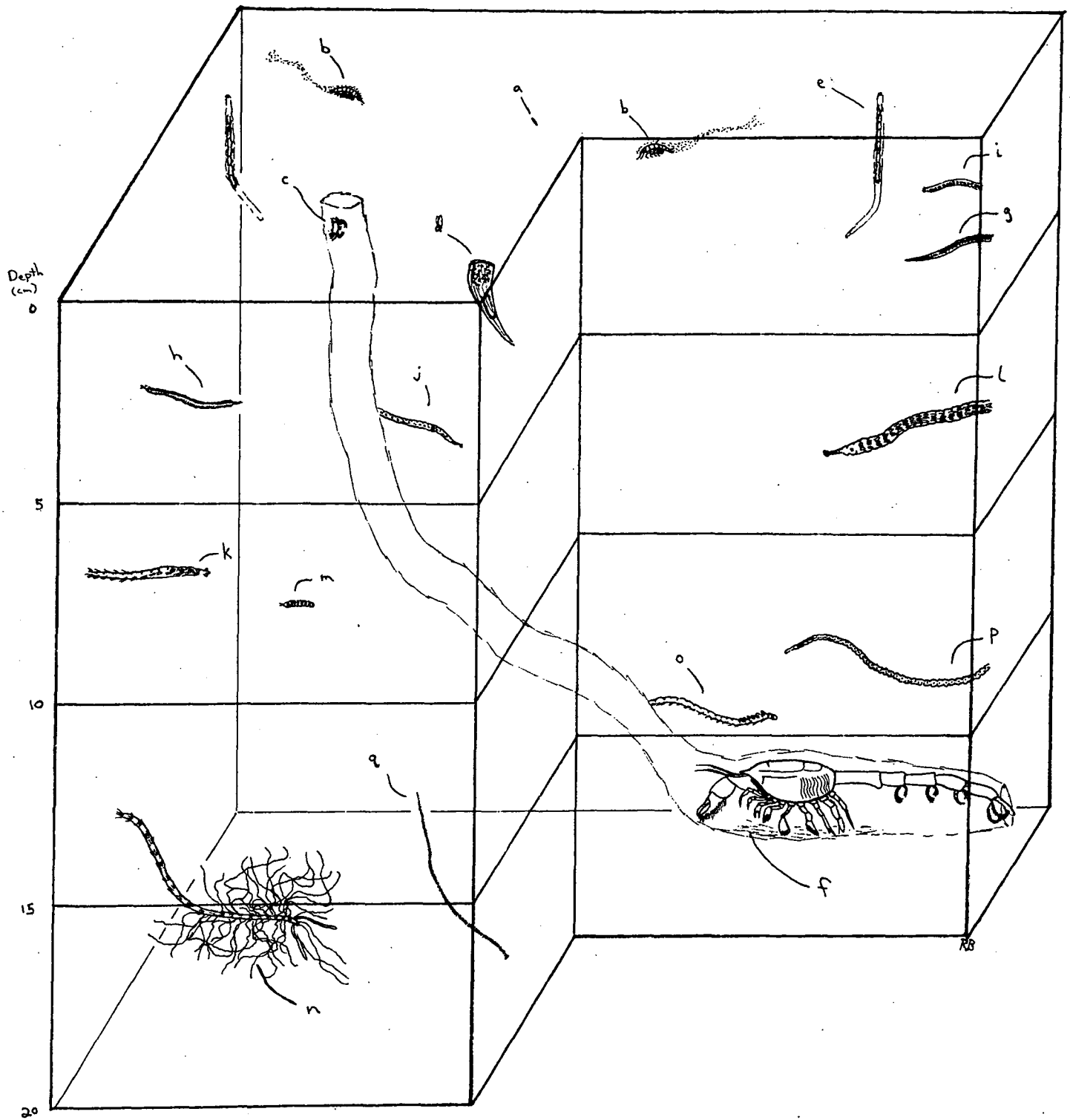
POLYCHAETA

- g. Orbiniidae sp.
h. Phyllodocidae
i. Nephtys sp.
j. Glycera sp.
k. Pseudoeurythoe ambigua
l. Glycera dibranchiata
m. Paleanotus heteroseta
n. Cirratulidae sp.
o. Paraonidae
p. Arabellidae sp.

ECHINODERMATA

- q. Micropholis atra

STATION 39



Station 40

MOLLUSCA

- a. Busycon carica
- b. Retusa canaliculata
- c. Anadara transversa
- d. Acteon punctostriatus
- e. Odostomia impressa
- f. Ensis directus

CRUSTACEA

- g. Ampelisca verrilli
- h. Unciola irrorata
- i. Listriella clymenellae

POLYCHAETA

- j. Harmothoe sp. A
- k. Glycera americana
- l. Clymenella torquata
- m. Phyllodocidae sp.
- n. Paleanotus heteroseta
- o. Capitellidae
- p. Nereis succinea
- q. Sabellaria vulgaris
- r. Pseudoeurythoe ambigua

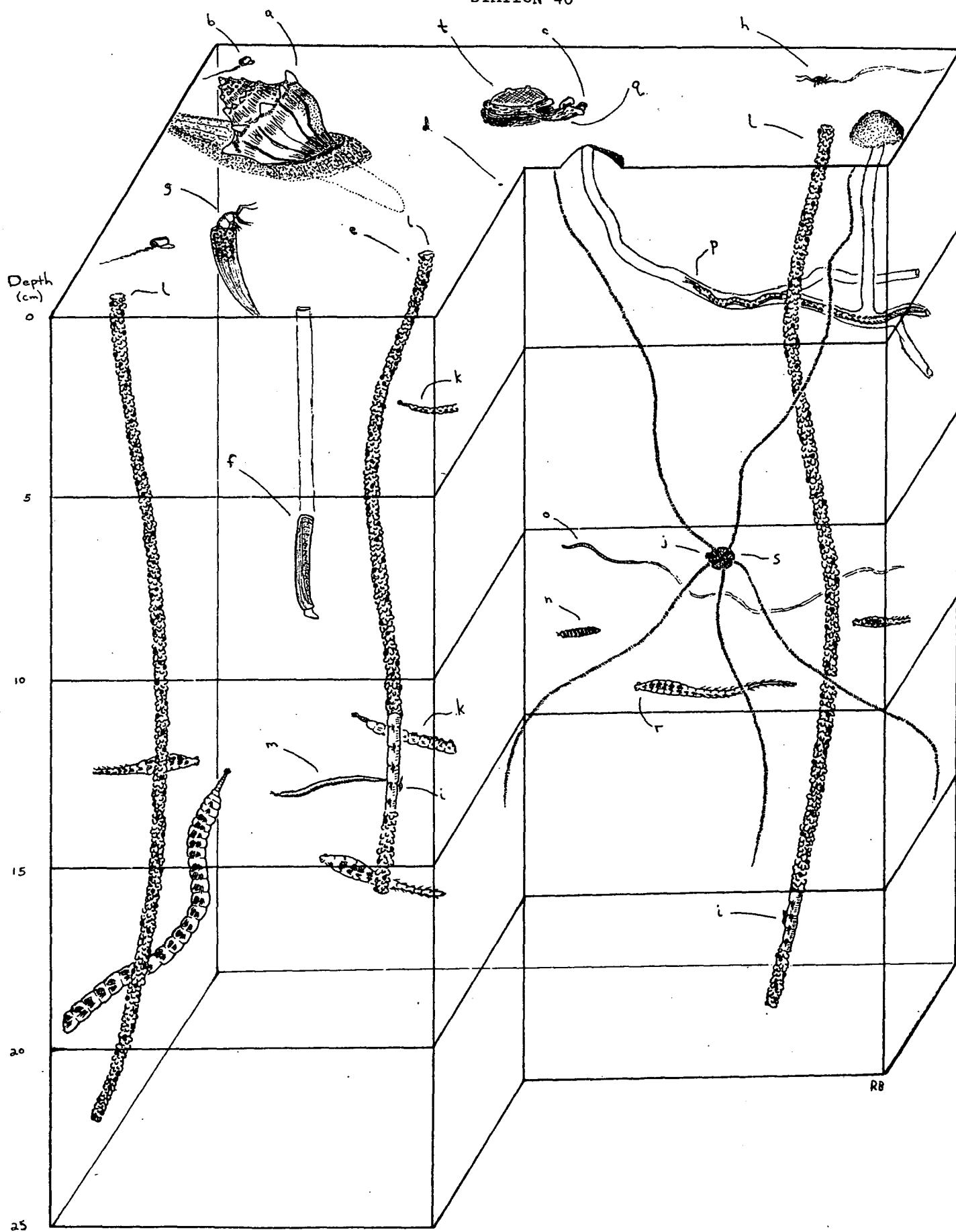
ECHINODERMATA

- s. Micropholis atra

ASCIDACEA

- t. Molgula manhattensis

STATION 40



Station 41

MOLLUSCA

- a. Anadara transversa
- b. Odostomia sp.

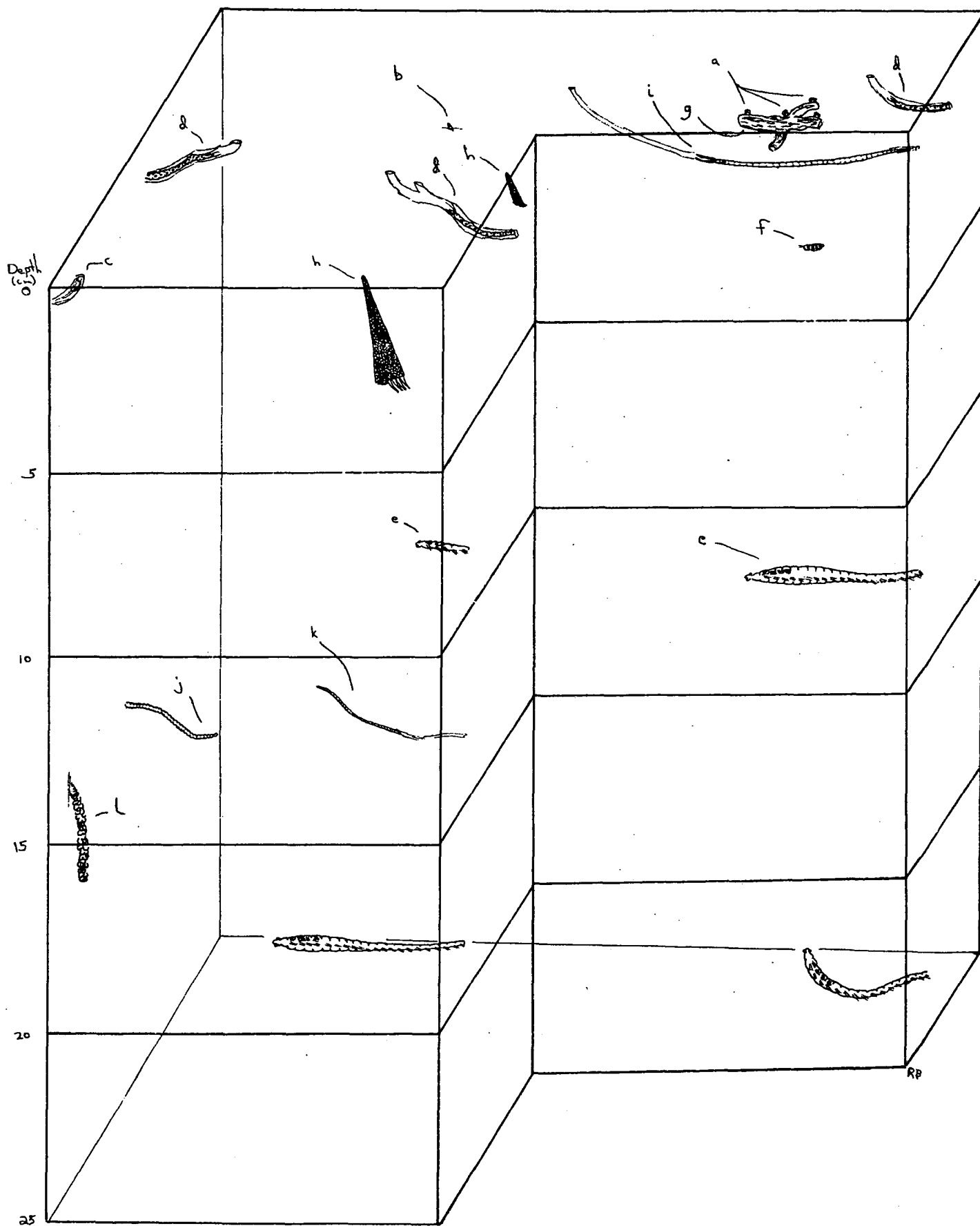
CRUSTACEA

- c. Ampeliscidae sp.

POLYCHAETA

- d. Nereis succinea
- e. Pseudoeurythoe ambigua
- f. Paleanotus heteroseta
- g. Sabellaria vulgaris
- h. Pectinaria gouldii
- i. Paraprionospio pinnata
- j. Ancistrosyllis sp.
- k. Heteromastus filiformis
- l. Maldanidae sp.

STATION 41



Station 42

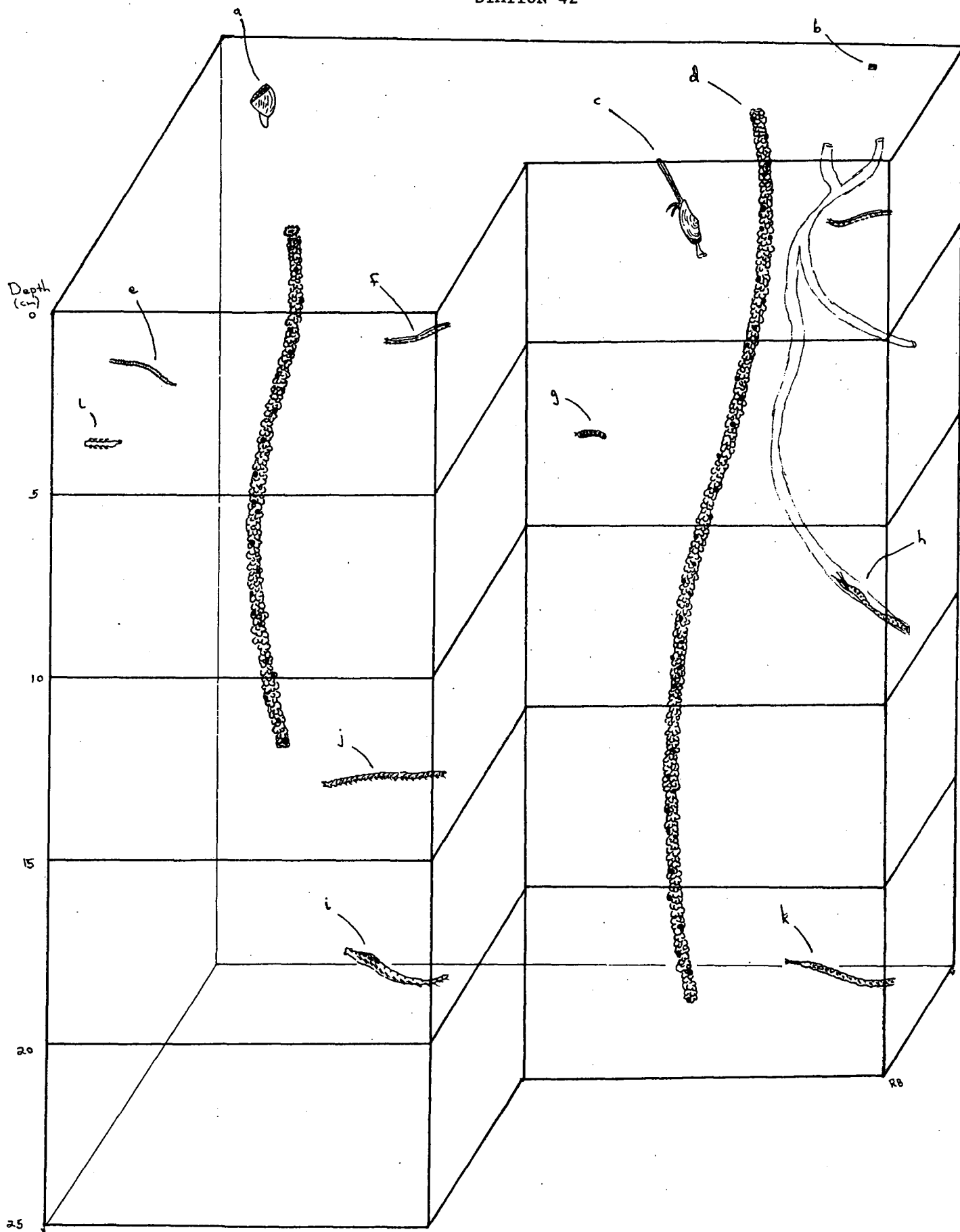
MOLLUSCA

- a. Mulinia lateralis
- b. Anadara transversa
- c. Yoldia limatula

POLYCHAETA

- d. Clymenella zonalis
- e. Phyllodocidae
- f. Nephtys picta
- g. Paleanotus heteroseta
- h. Nereis succinea
- i. Pseudoeurythoe ambigua
- j. Pilargis sp. A
- k. Glycera americana
- l. Sigambra sp. (damaged)

STATION 42



Station 43

MOLLUSCA

- a. Nucula proxima
- b. Retusa canaliculata
- c. Leptonidae
- d. Yoldia limatula

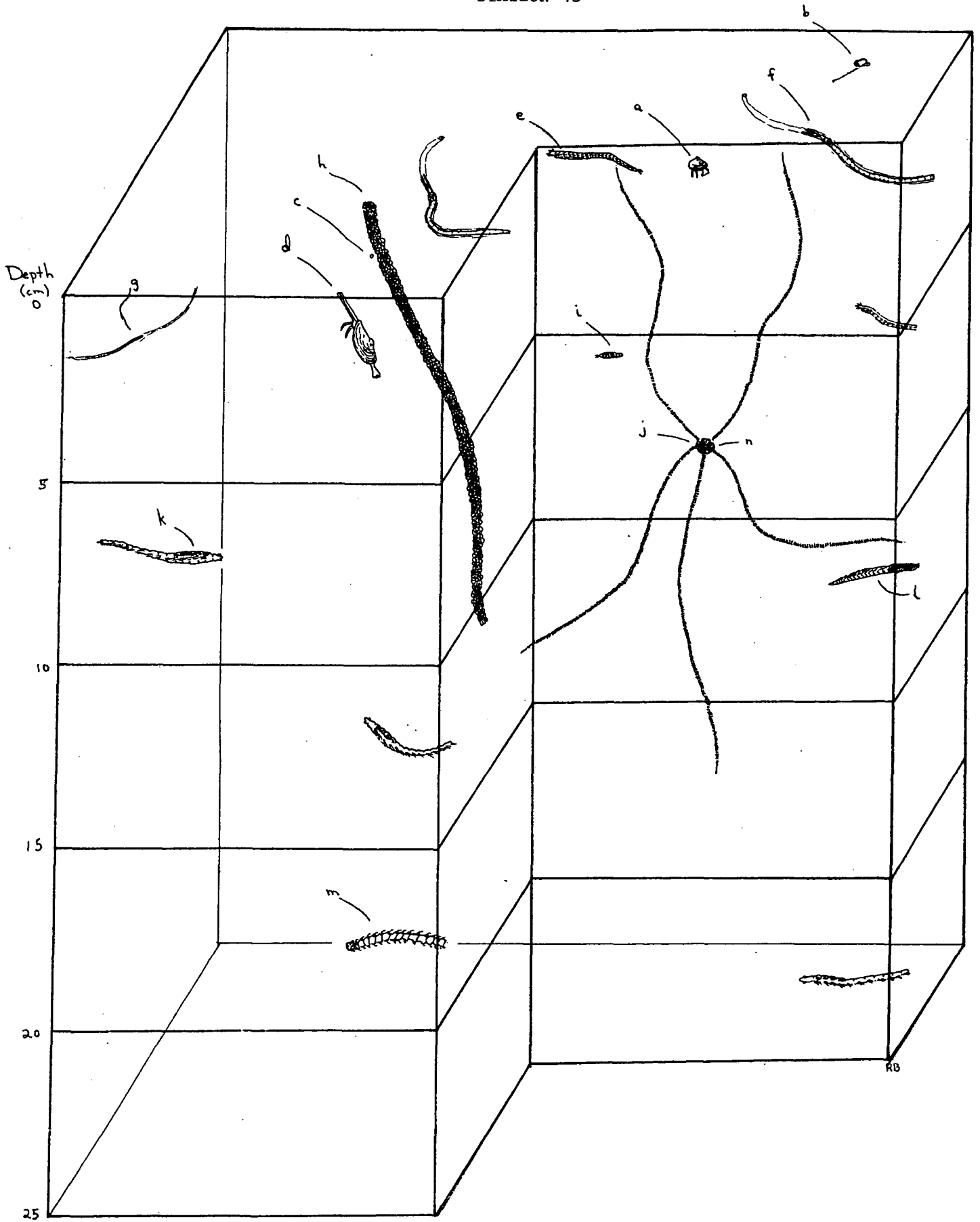
POLYCHAETA

- e. Nephtys sp.
- f. Paraprionospio pinnata
- g. Capitellidae
- h. Praxillella gracilis
- i. Paleanotus heteroseta
- j. Harmothoe sp. A
- k. Pseudoeurythoe ambigua
- l. Orbiniidae
- m. Sigambra tentaculata

ECHINODERMATA

- n. Micropholis atra

STATION 43



Station 44

MOLLUSCA

- a. Retusa canaliculata
- b. Tellina agilis
- c. Acteon punctostriatus
- d. Mangelia cerina
- e. Mulinia lateralis
- f. Turbonilla interrupta
- g. Natica pusilla

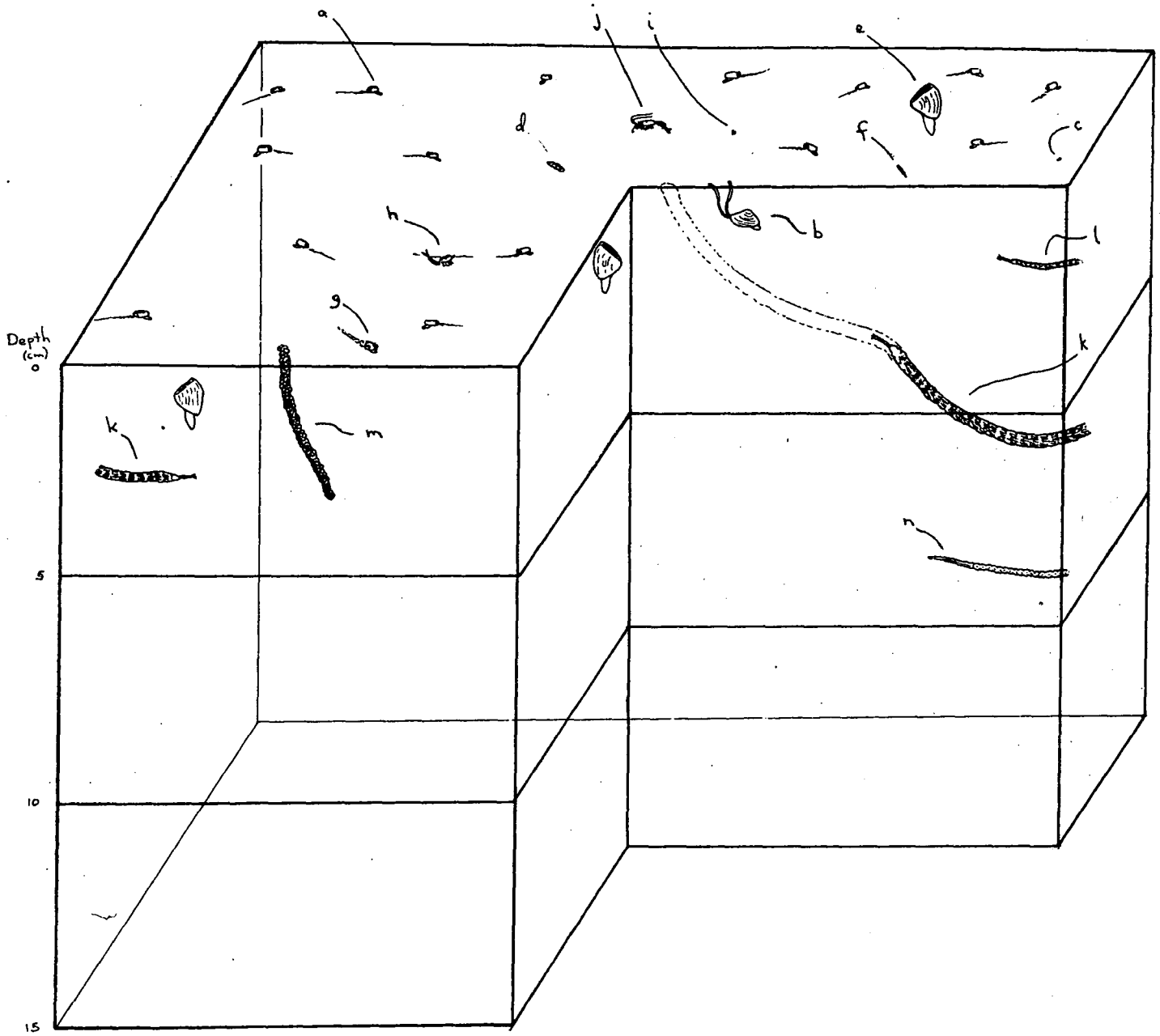
CRUSTACEA

- h. Oxyurostylis smithi
- i. Ostracod
- j. Neomysis americana

POLYCHAETA

- k. Glycera dibranchiata
- l. Glycinde solitaria
- m. Maldanidae
- n. Arabellidae

STATION 44



Station 45

MOLLUSCA

- a. Busycon carica

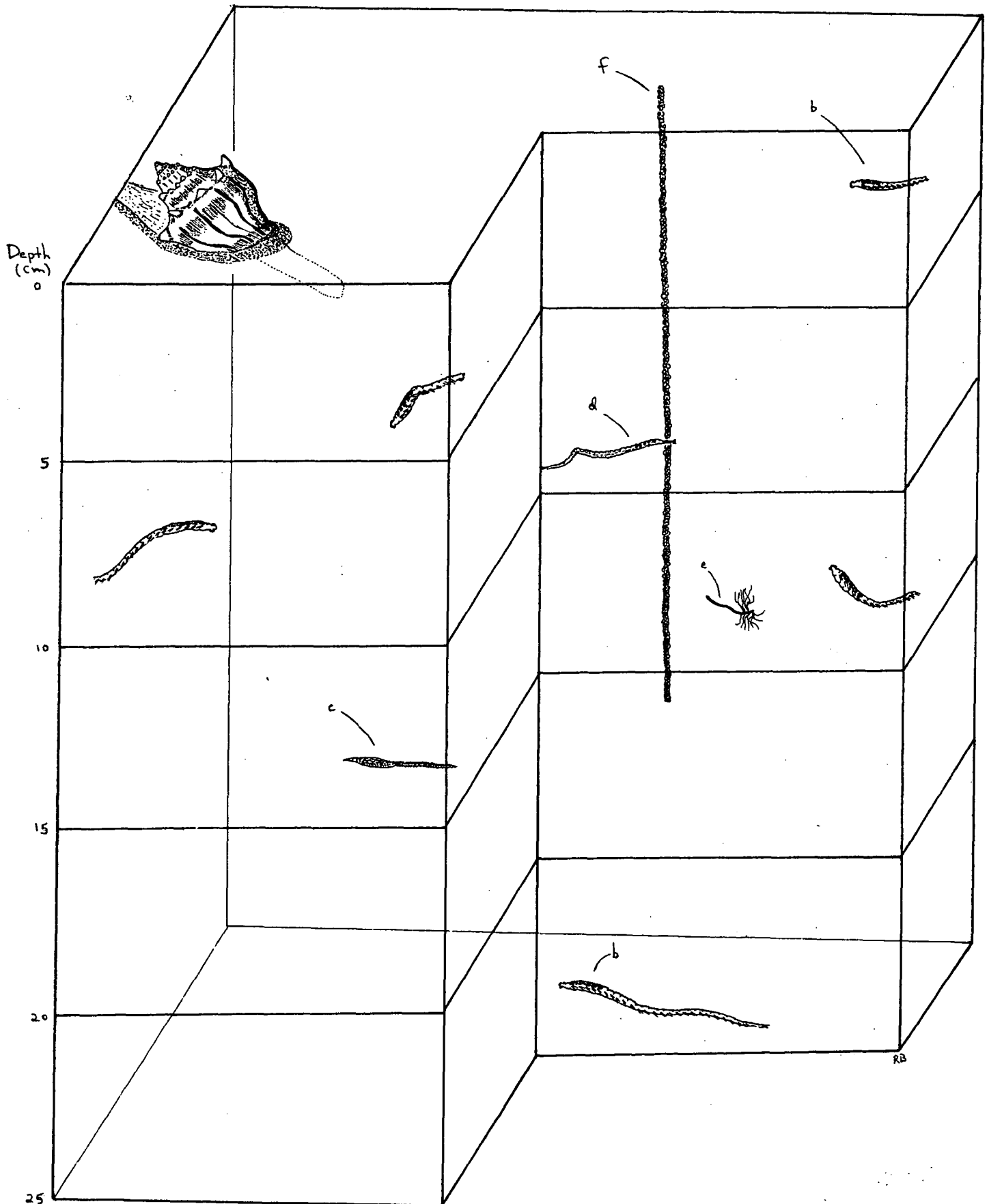
POLYCHAETA

- b. Pseudoeurythoe ambigua
c. Scoloplos robustus
d. Glycera americana
e. Tharyx sp.

PHORONIDA

- f. Phoronid

STATION 45



Station 46

MOLLUSCA

- a. Turbonilla interrupta
- b. Odostomia sp. (juv)
- c. Retusa canaliculata
- d. Tellina agilis
- e. Yoldia limatula
- f. Pitar morrhuana

CRUSTACEA

- g. Ampelisca abdita
- h. Upogebia affinis (juv)
- i. Libinia dubia
- j. Paguridae
- k. Unciola serrata

POLYCHAETA

- l. Glycinde solitaria
- m. Glycera americana
- n. Paleanotus heteroseta
- o. Maldanopsis elongata
- p. Pectinaria gouldii
- q. Pseudoeurythoe ambigua
- r. Heteromastus filiformis

ECHINODERMATA

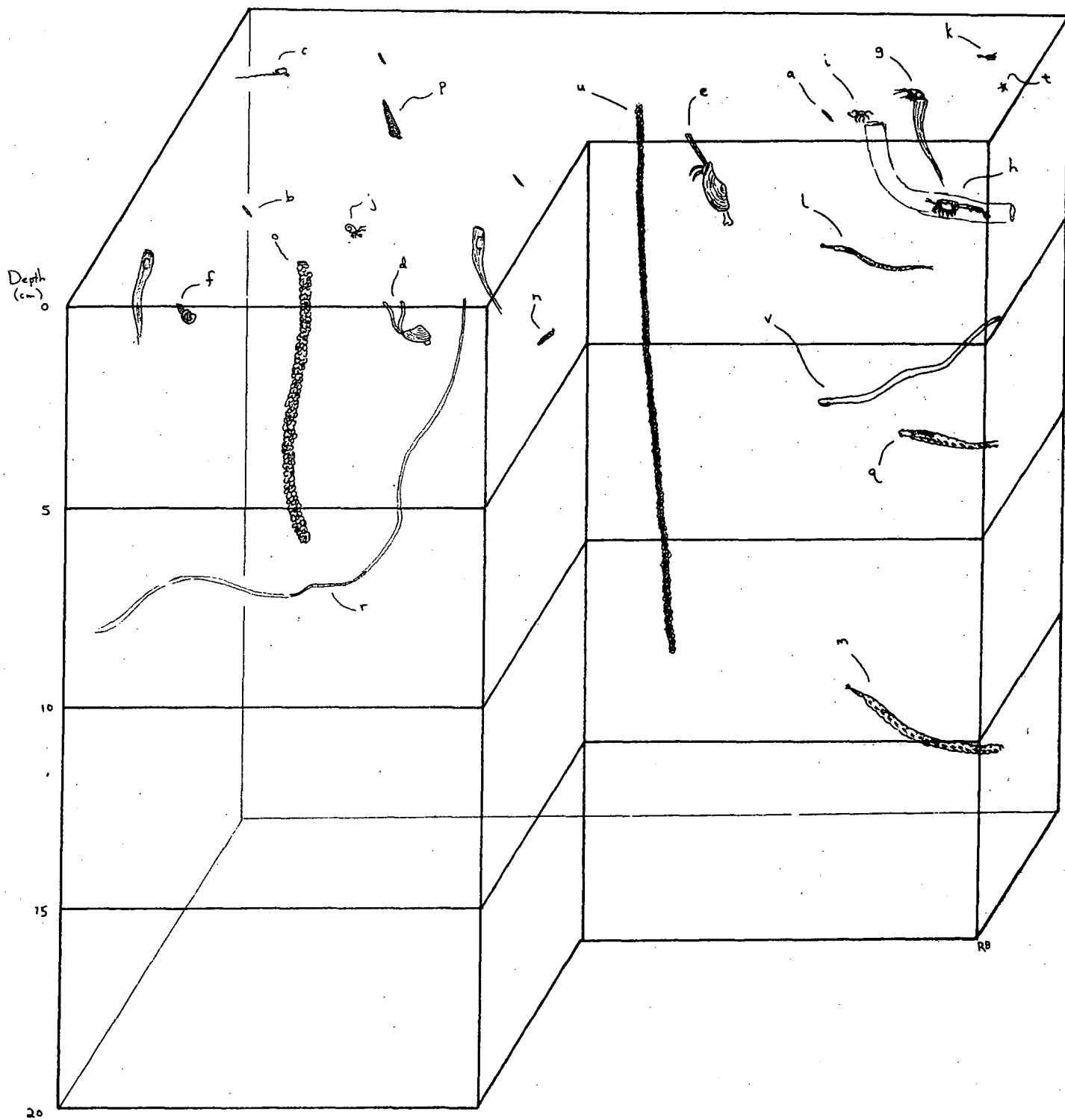
- t Ophuroidea (juv)

PHORONIDA

- u Phoronid

s
Fish

STATION 46



Station 47

MOLLUSCA

- a. Retusa canaliculata
- b. Turbonilla stricta
- c. Tellina agilis

CRUSTACEA

- d. Ampelisca abdita
- e. Upogebia affinis (juv)
- f. Oxyurostylis smithi
- g. Pinnixa chaetopterana

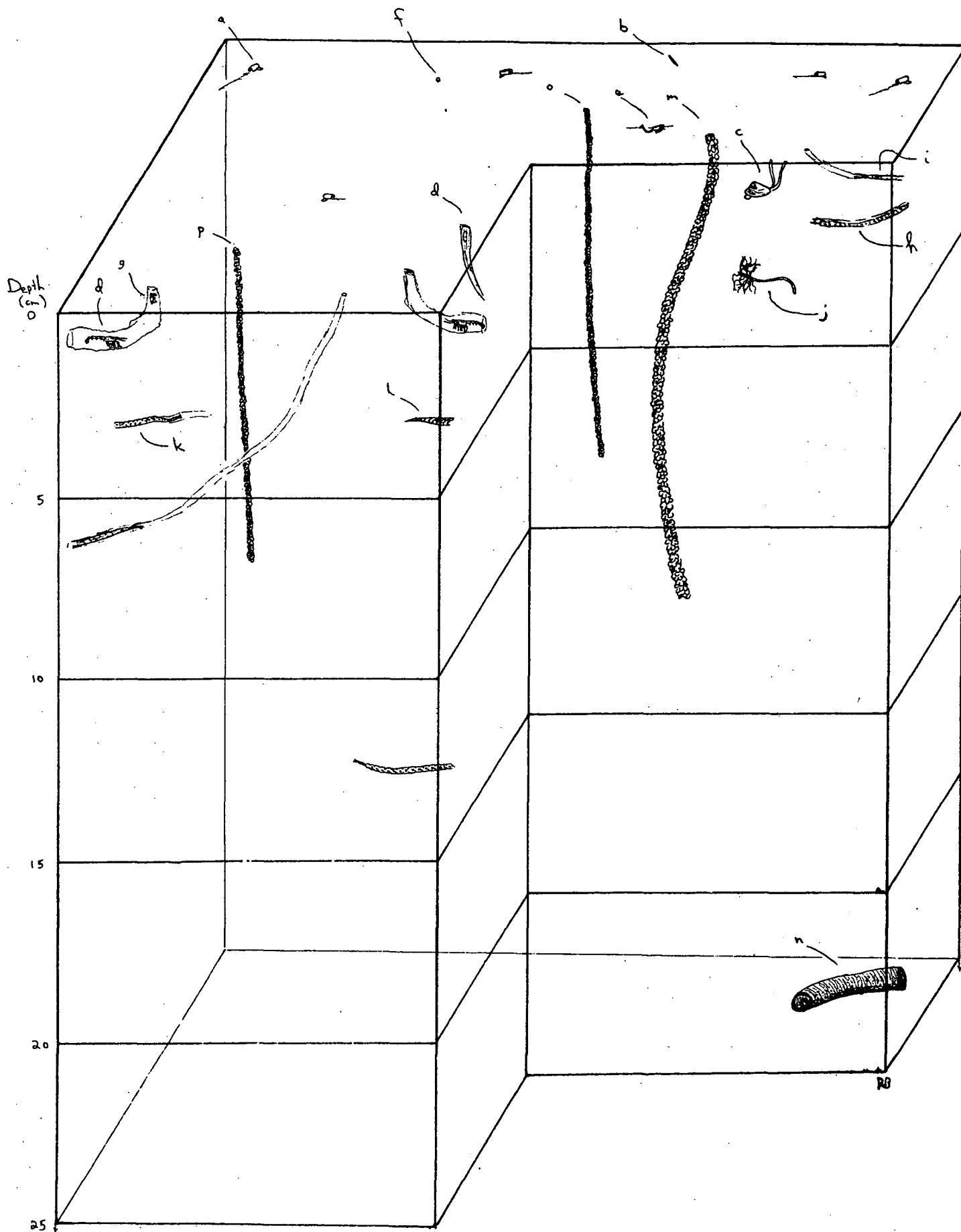
POLYCHAETA

- h. Aglaophamus circinata
- i. Paraprionospio pinnata
- j. Tharyx sp.
- k. Glycinde solitaria
- l. Orbiniidae
- m. Maldanidae
- n. Terebellidae

PHORONIDA

- o. Phoronid

STATION 47



Station 48.

MOLLUSCA

- a. Mulinia lateralis
- b. Retusa canaliculata
- c. Tellina agilis
- d. Odostomia sp.

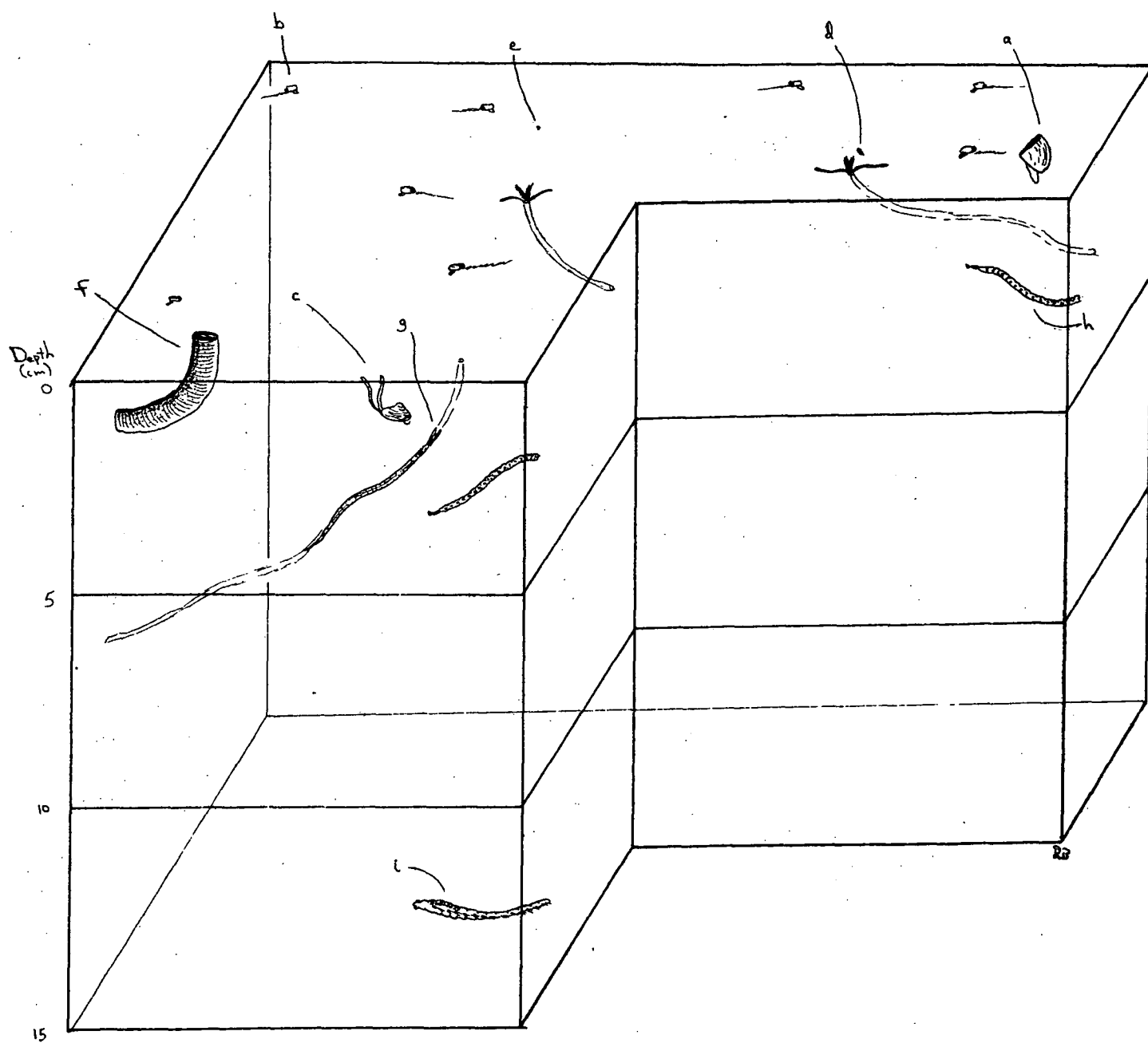
CRUSTACEA

- e. Ostracod

POLYCHAETA

- f. Loimia medusa
- g. Paraprionospio pinnata
- h. Glycinde solitaria
- i. Pseudoeurythoe ambigua

STATION 48



Station 49

MOLLUSCA

- a. Retusa canaliculata
- b. Cylichna alba
- c. Mulinia lateralis
- d. Yoldia limatula
- e. Macoma balthica
- f. Acteon punctostriatus

CRUSTACEA

- g. Ampelisca abdita
- h. Upogebia affinis
- i. Listriella clymenellae

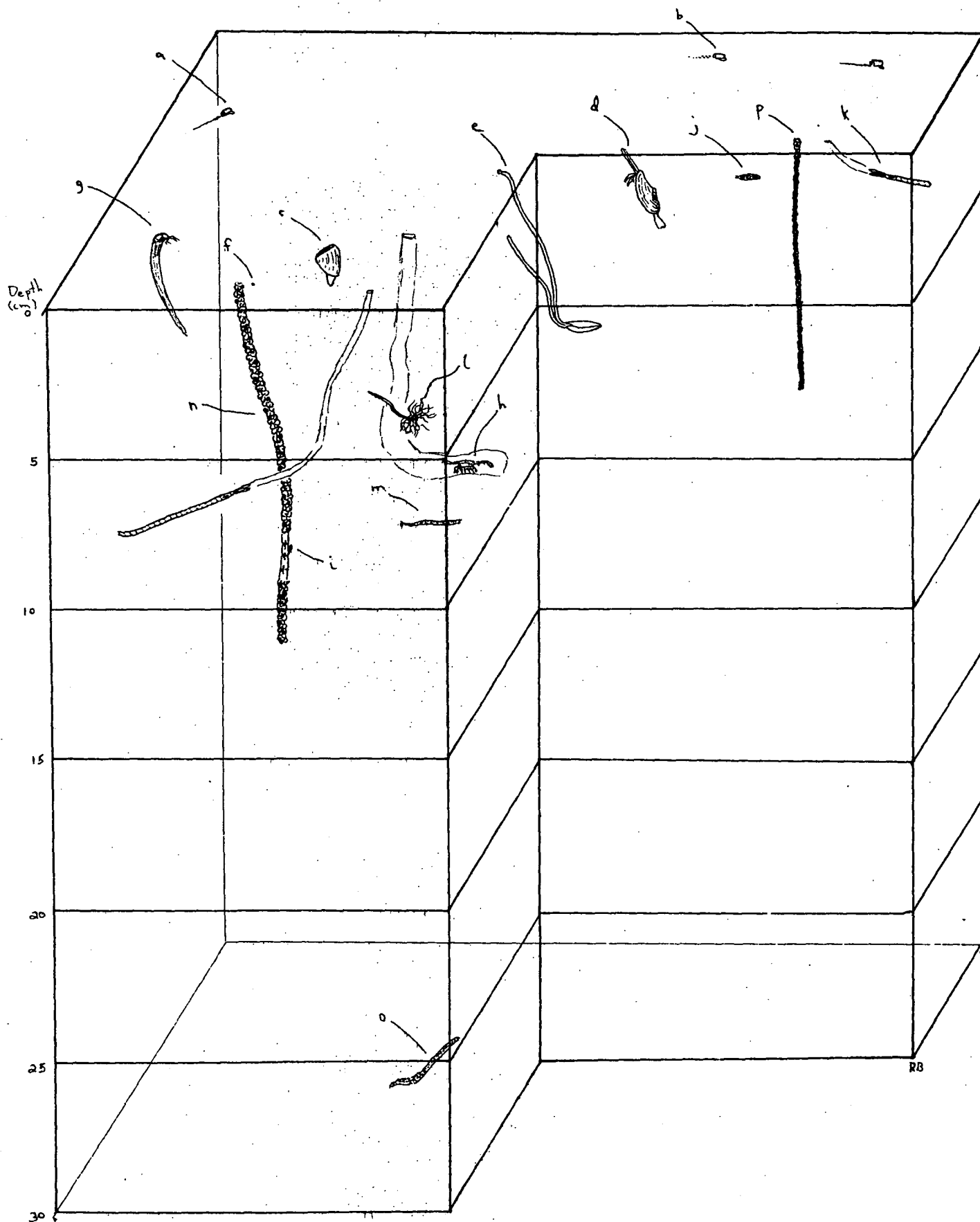
POLYCHAETA

- j. Palaenotus heteroseta
- k. Paraprionospio pinnata
- l. Tharyx sp.
- m. Glycinde solitaria
- n. Maldanidae
- o. Aricidea fragilis

PHORONIDA

- p. Phoronid

STATION 49



Station 50

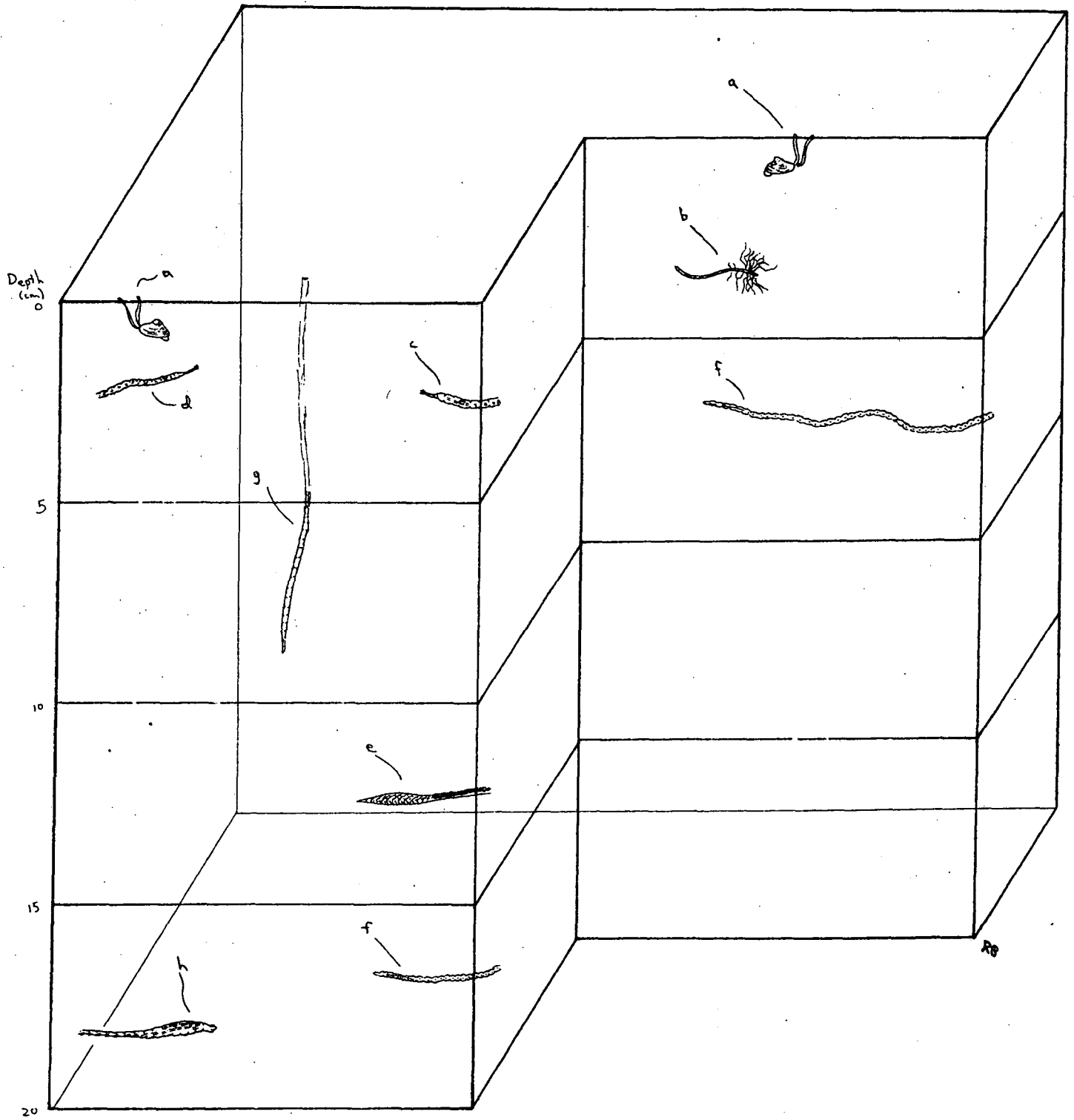
MOLLUSCA

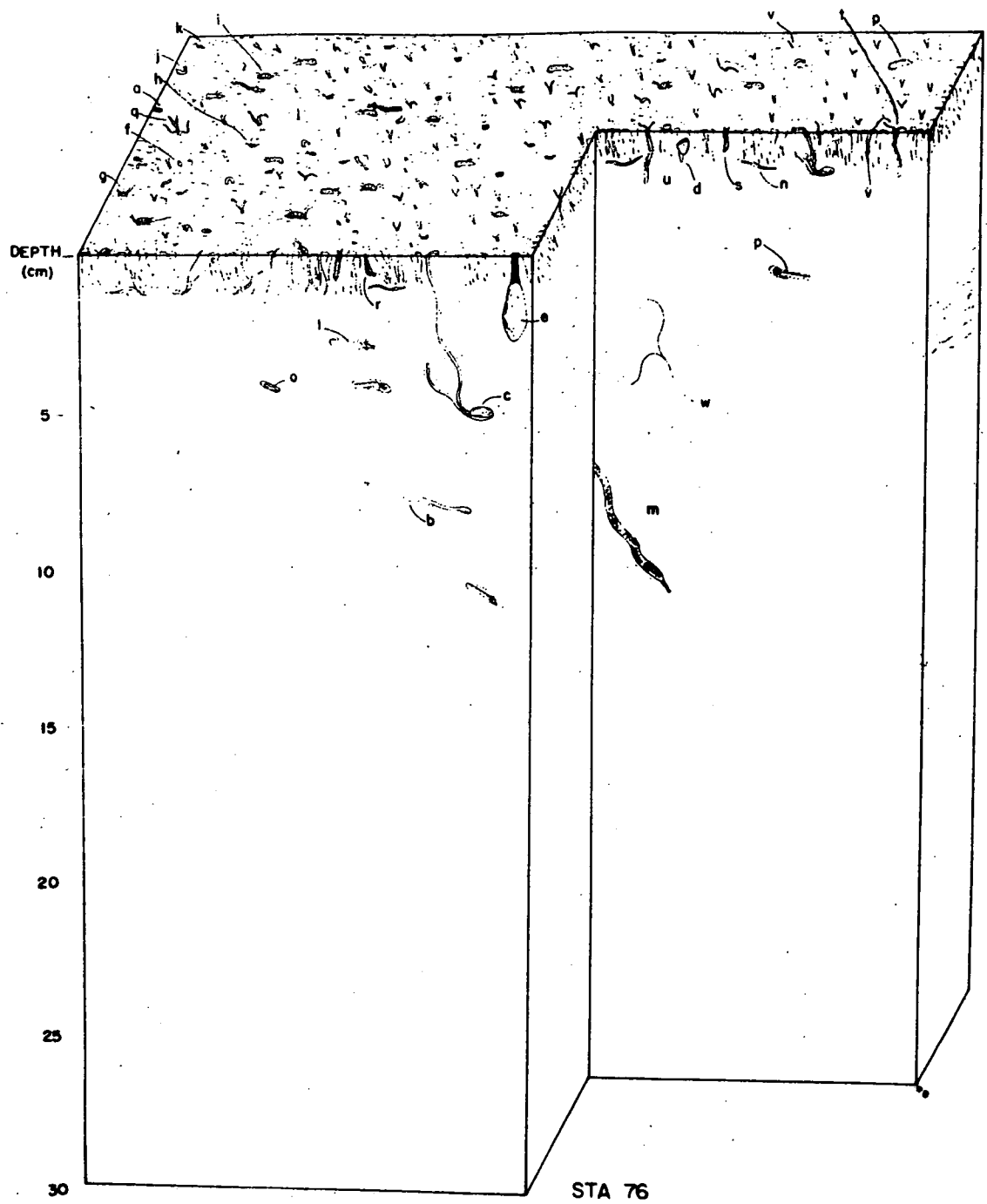
- a. Tellina agilis

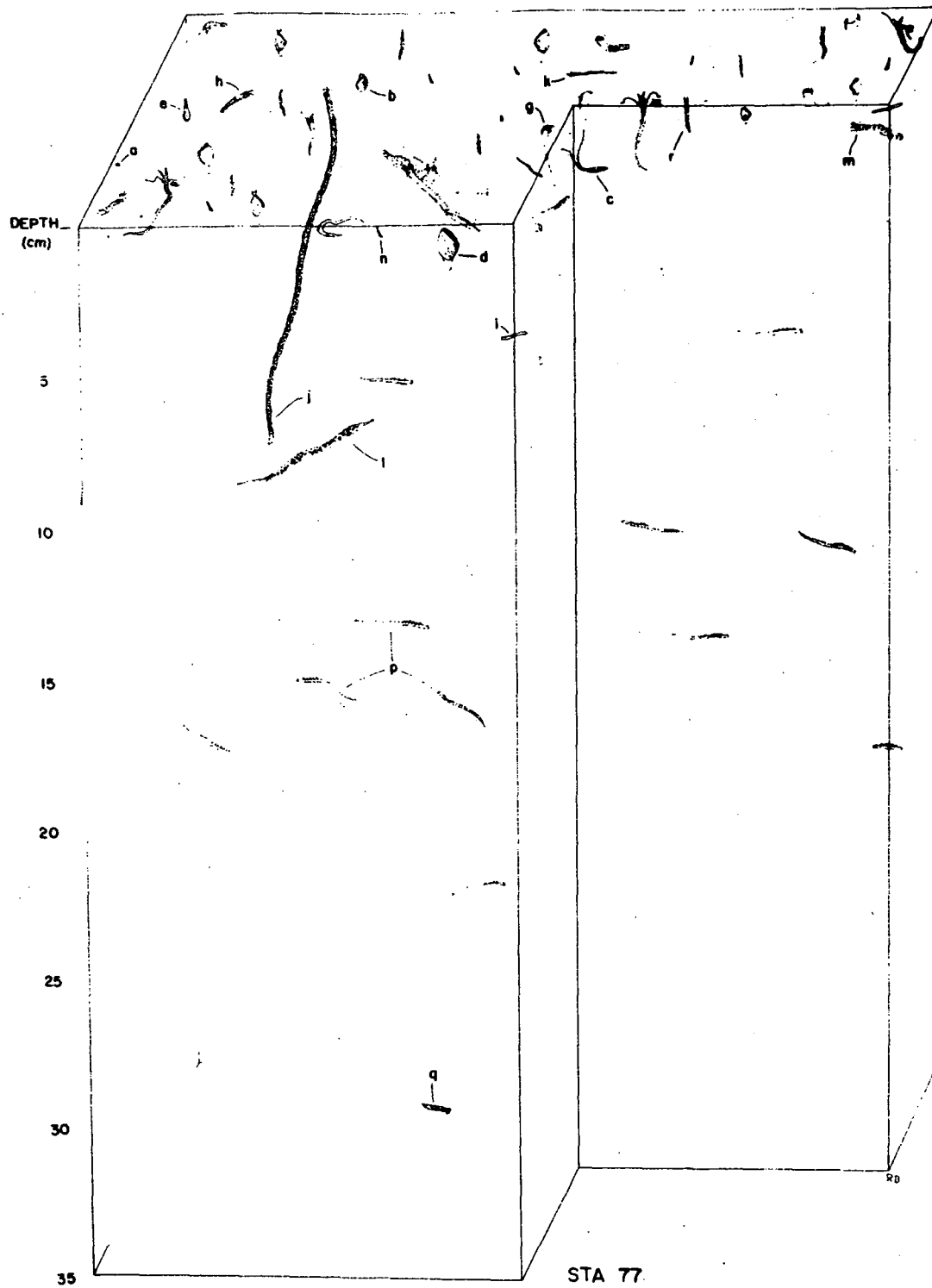
POLYCHAETA

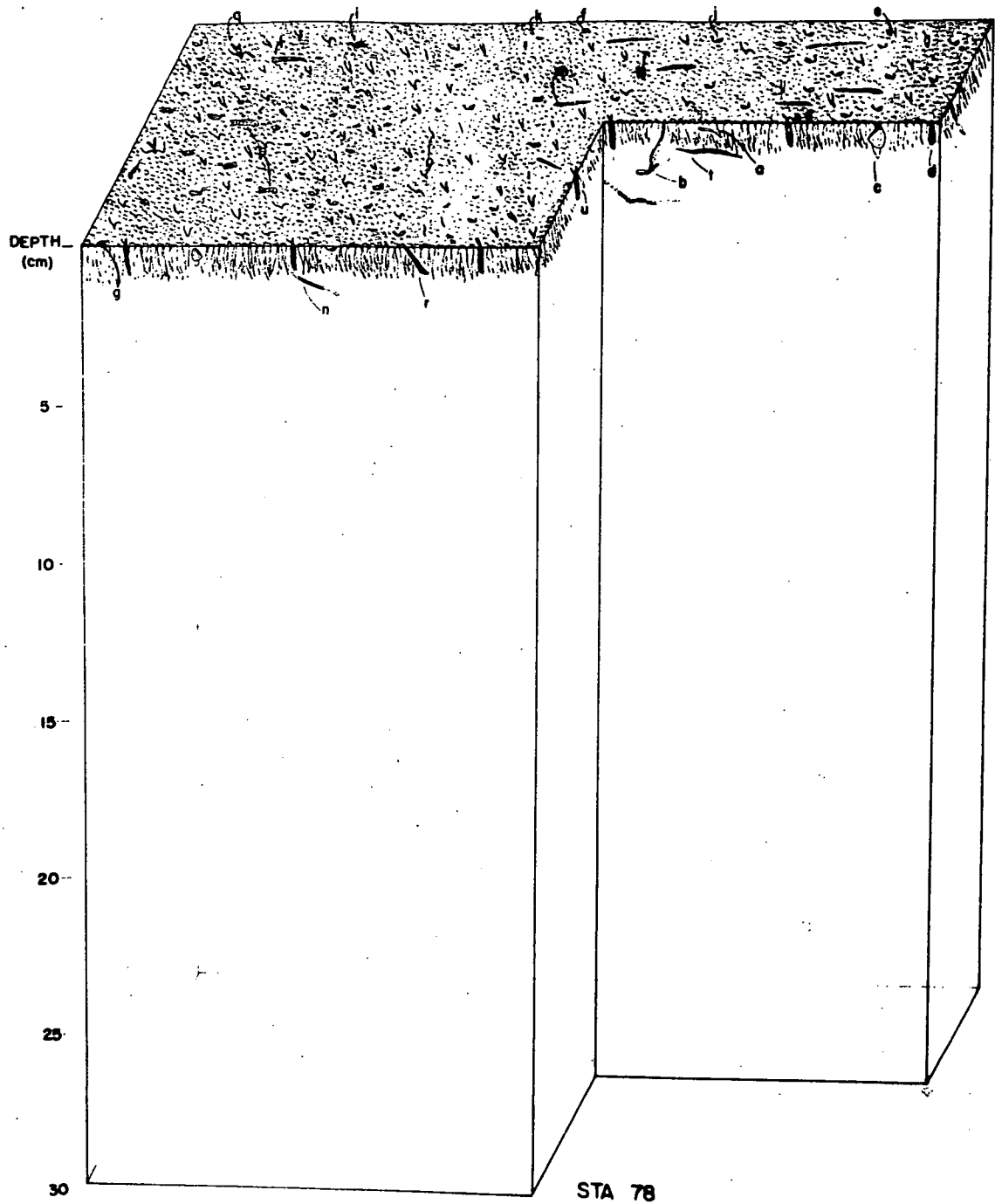
- b. Cirratulidae
- c. Glycera dibranchiata
- d. Glycera robusta
- e. Scoloplos rubra
- f. Drilonereis longa
- g. Magelona sp.
- h. Pseudoeurythoe ambigua

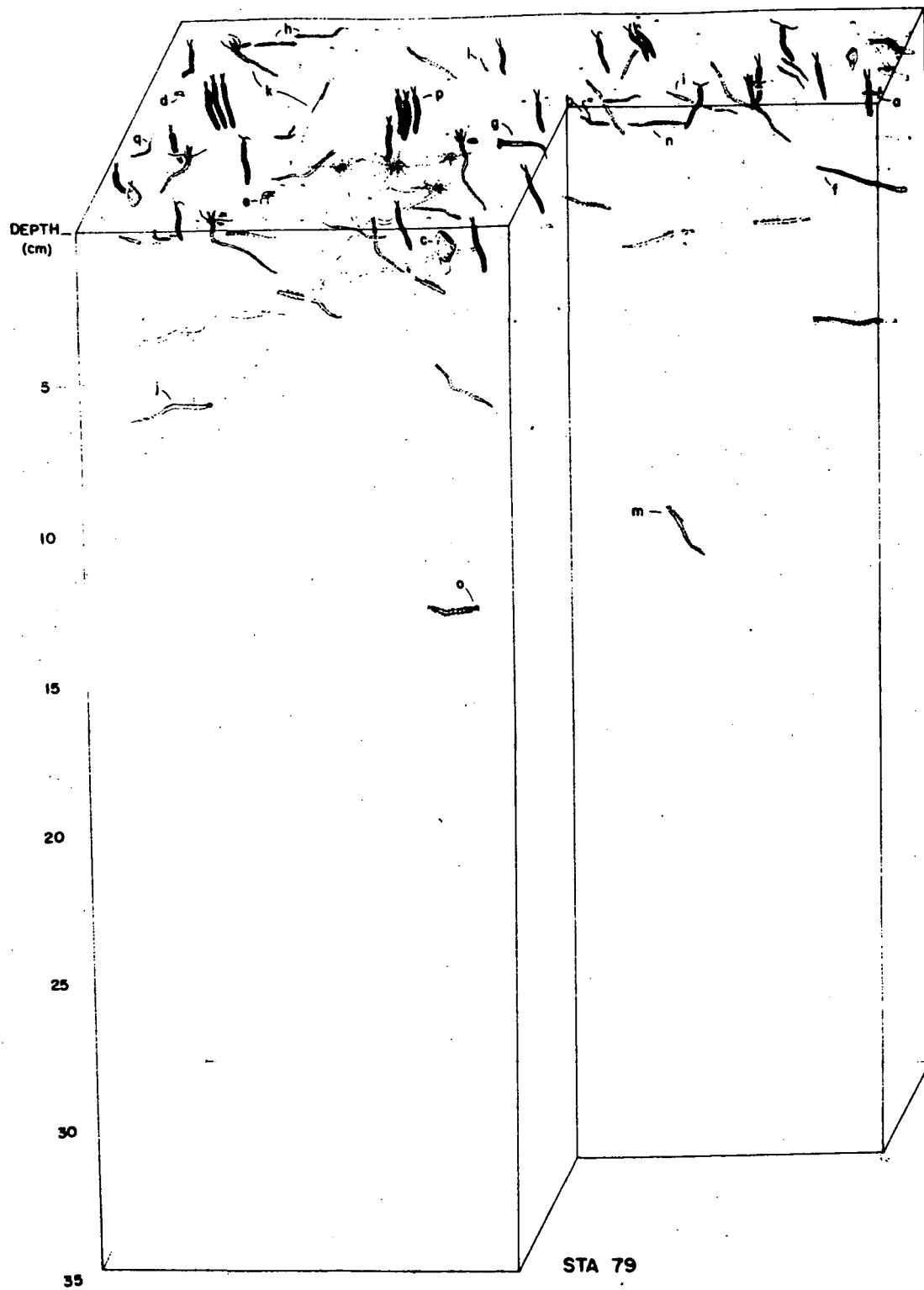
STATION 50

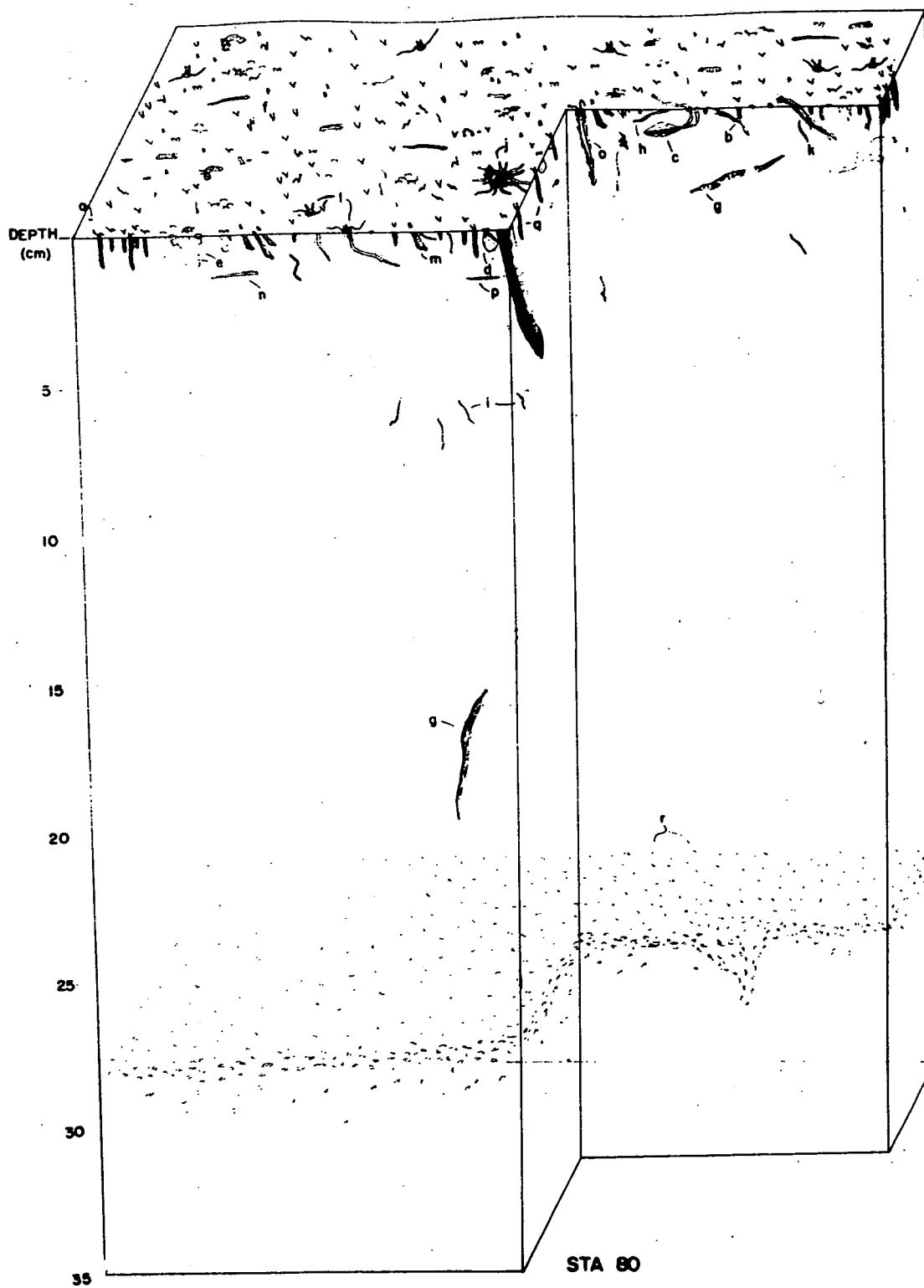


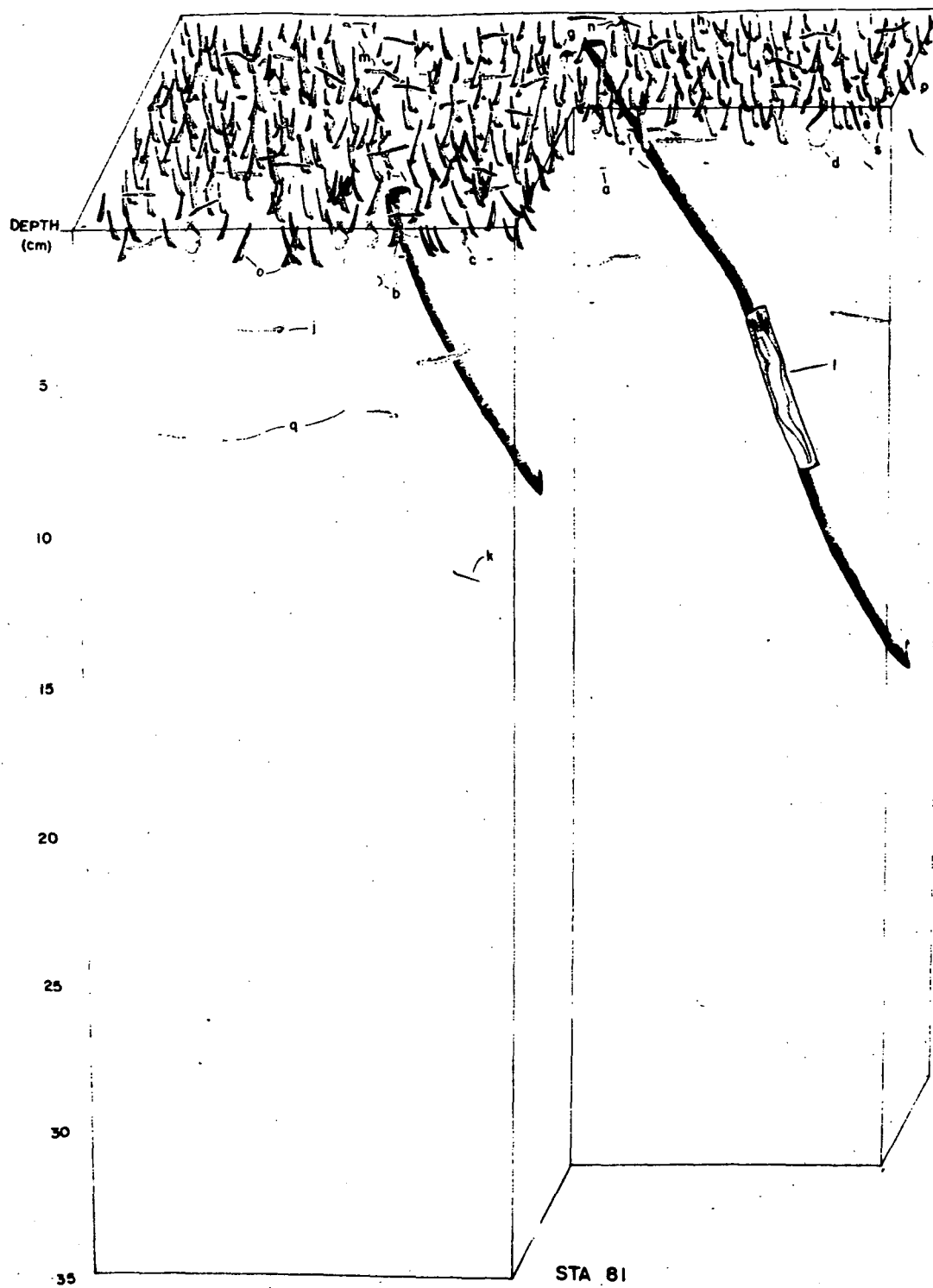


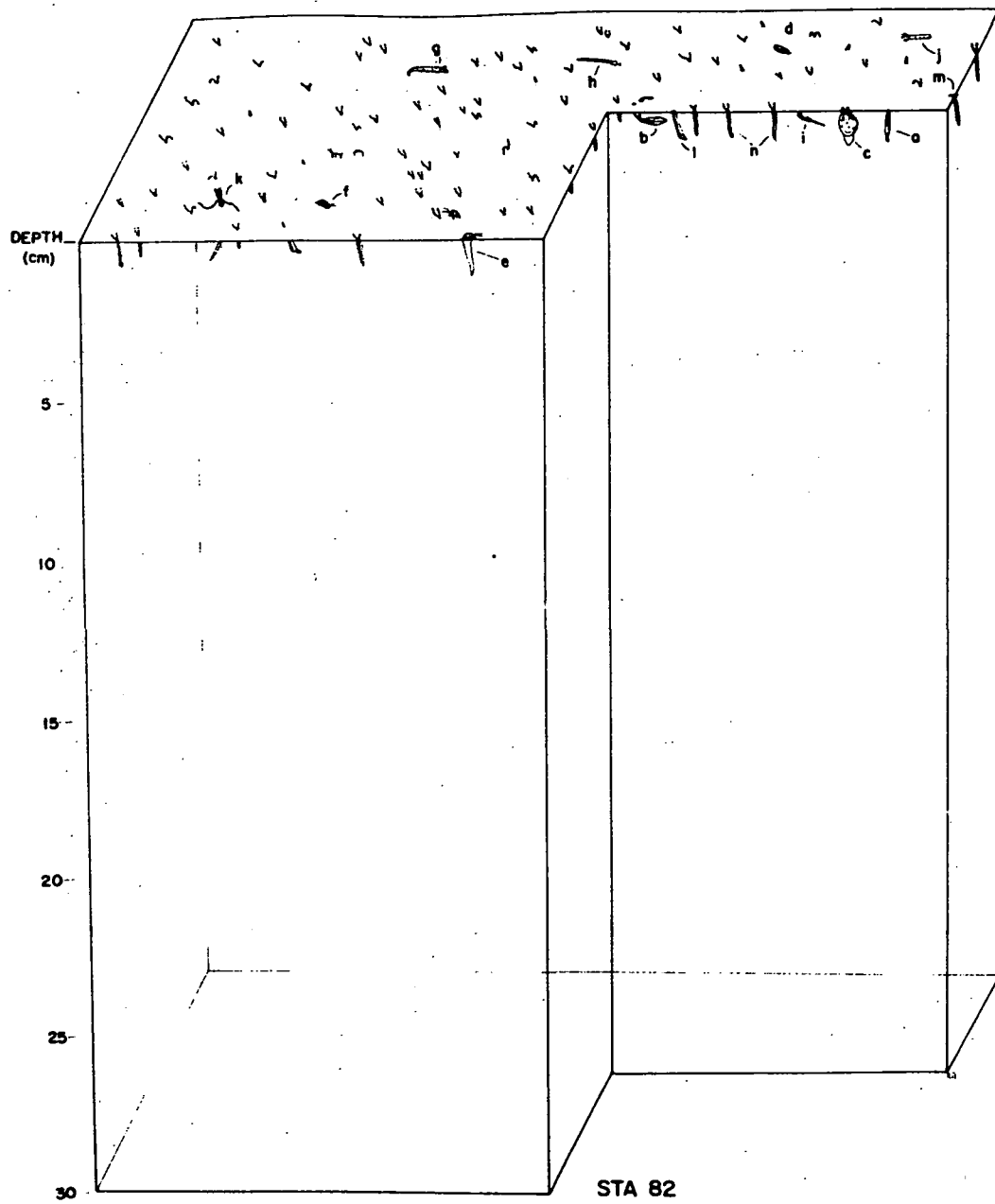


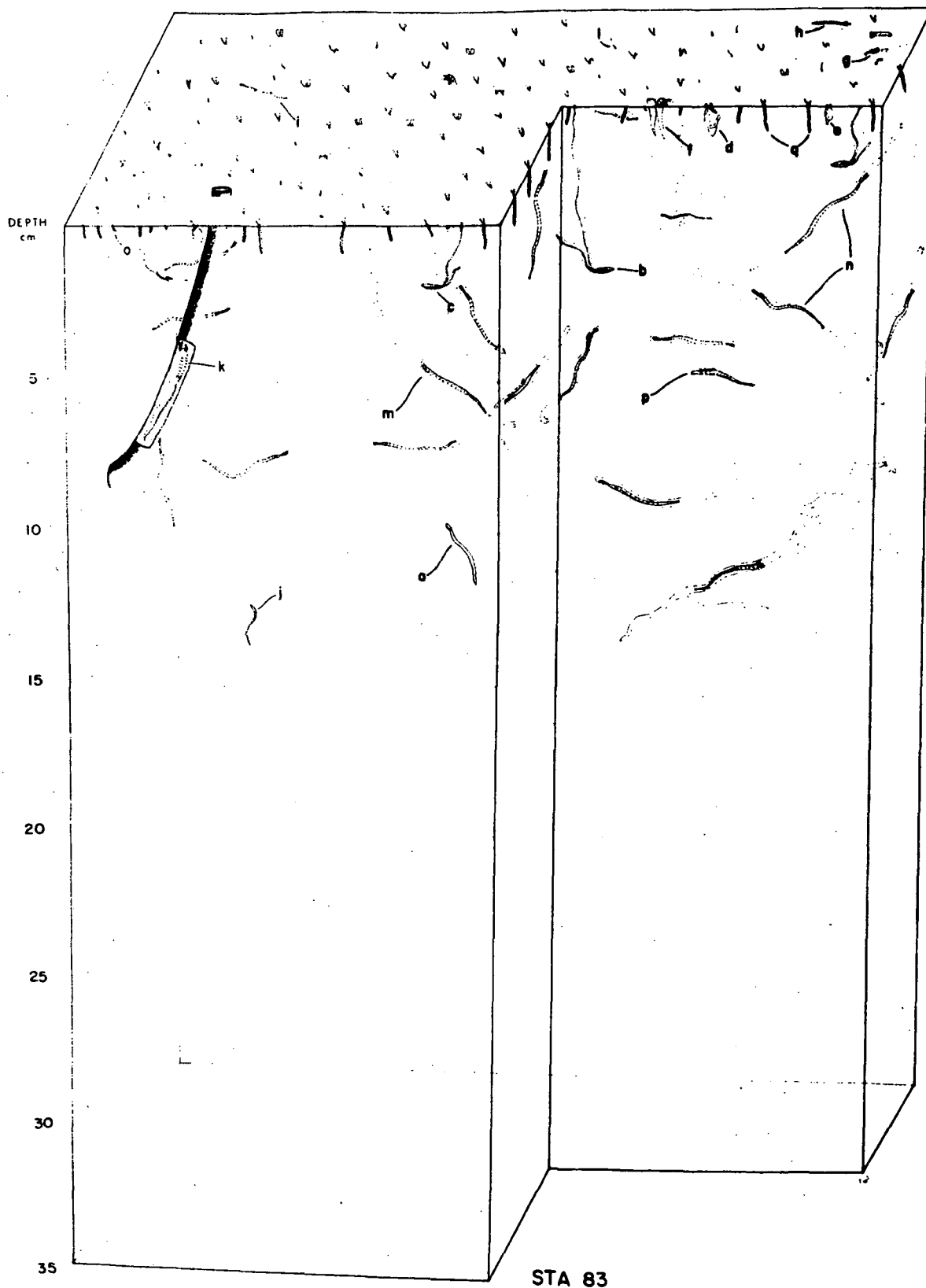


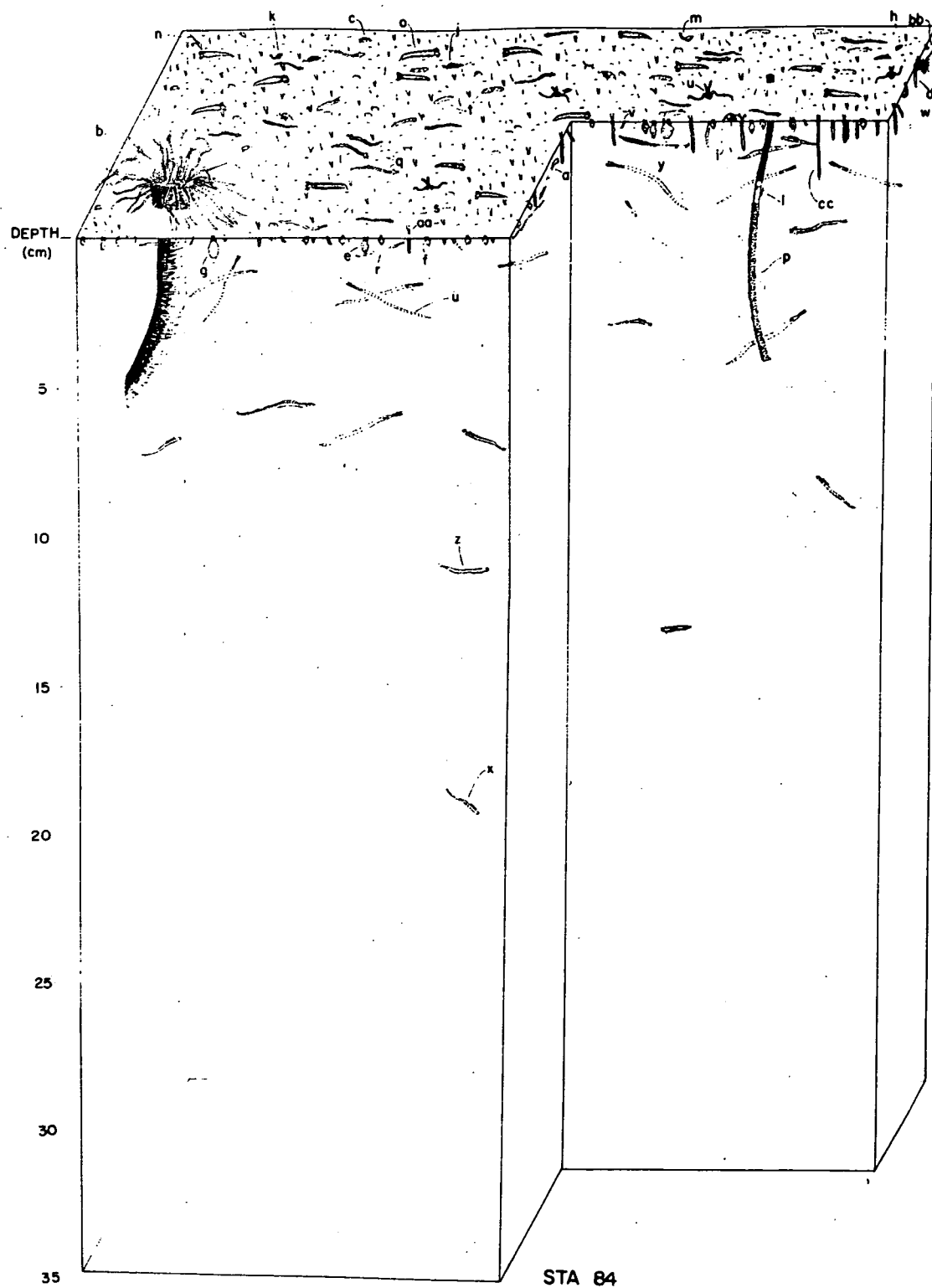


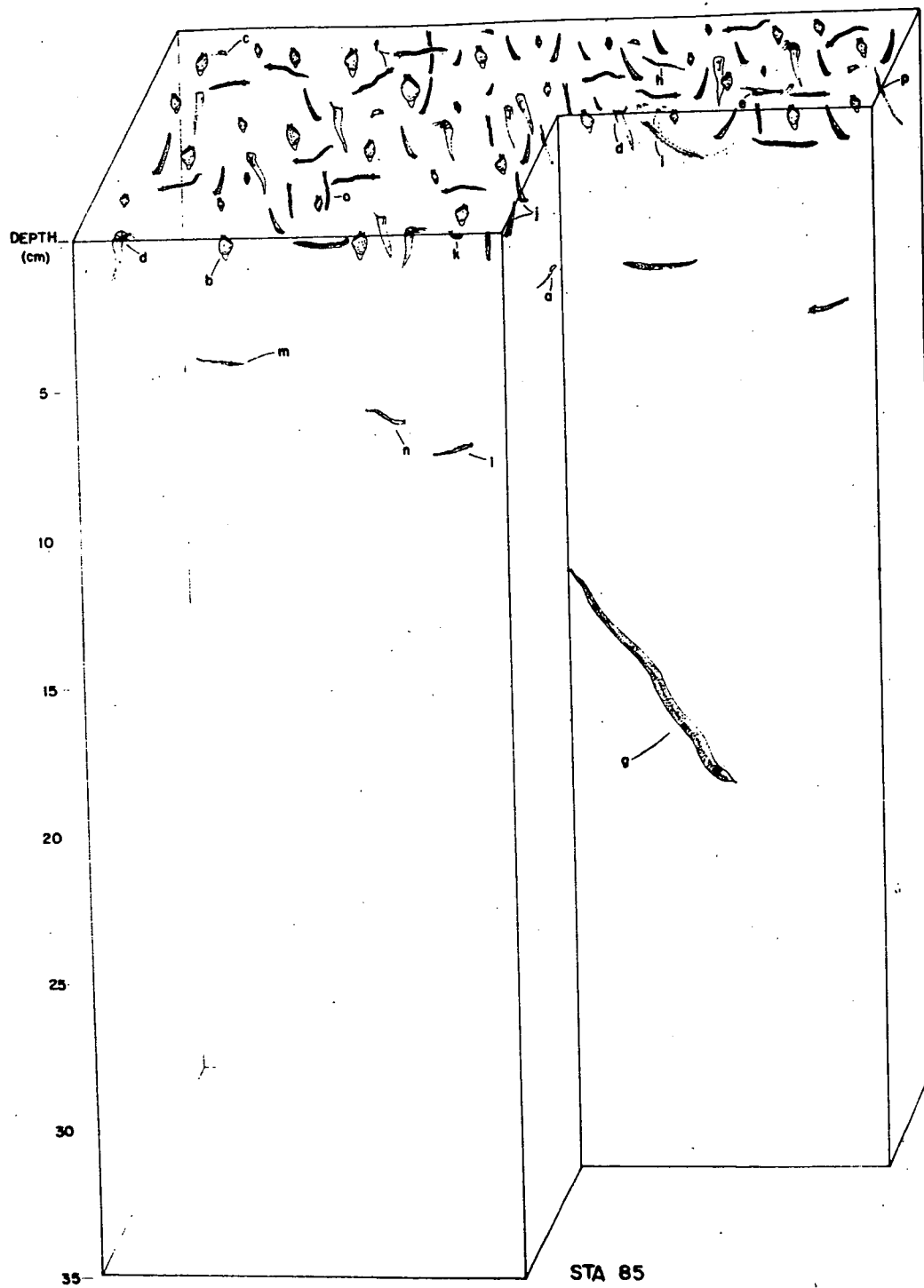


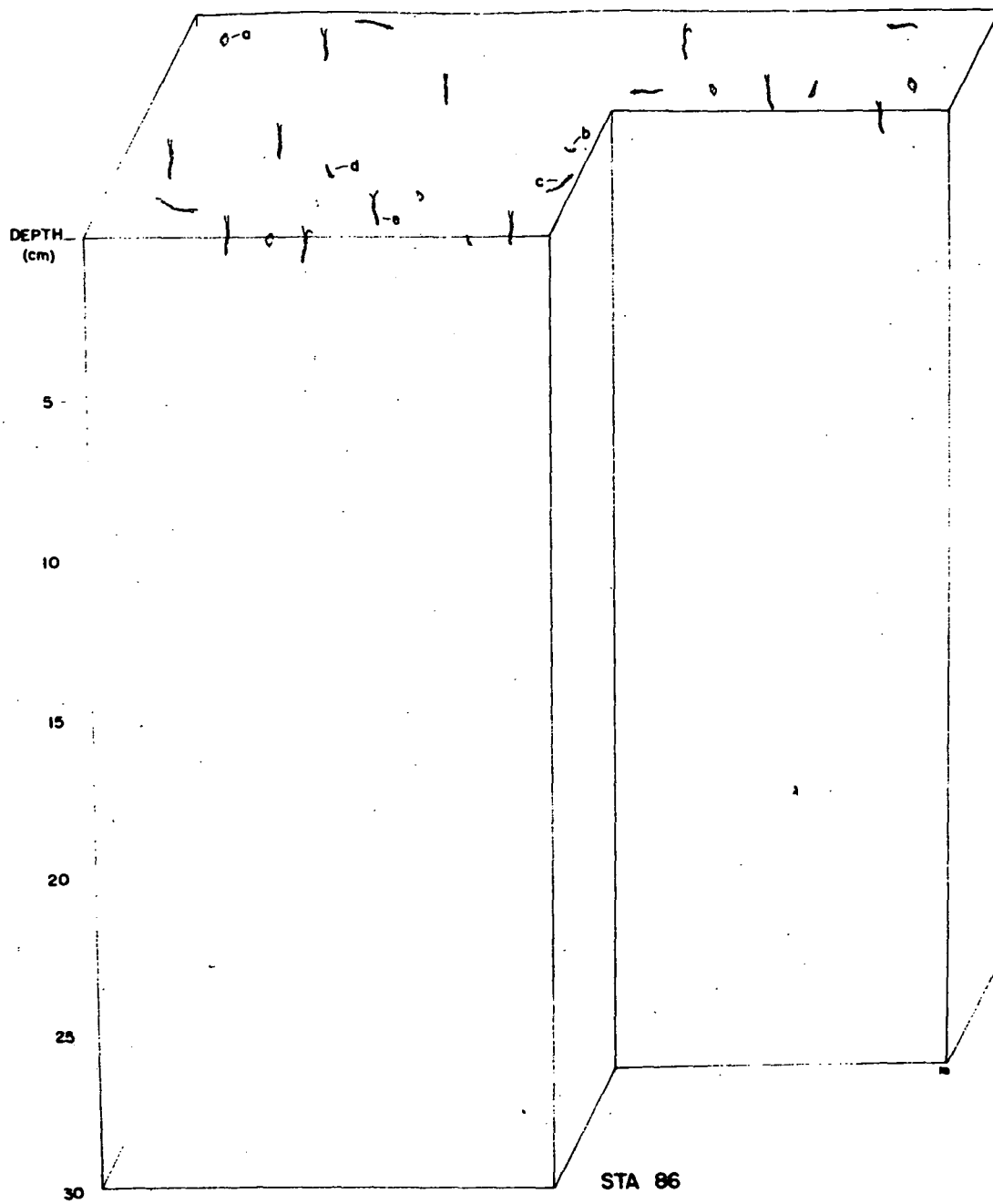


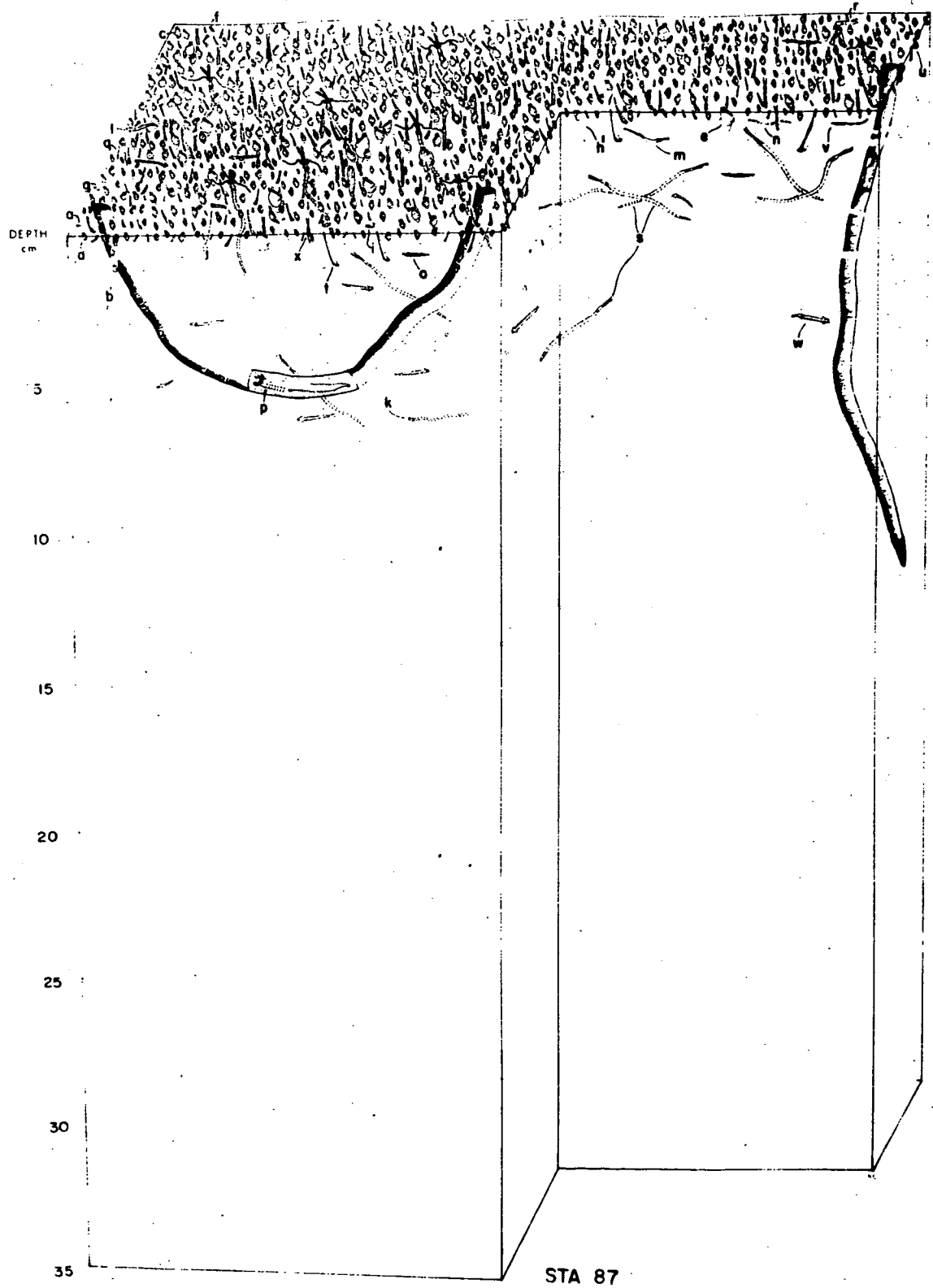


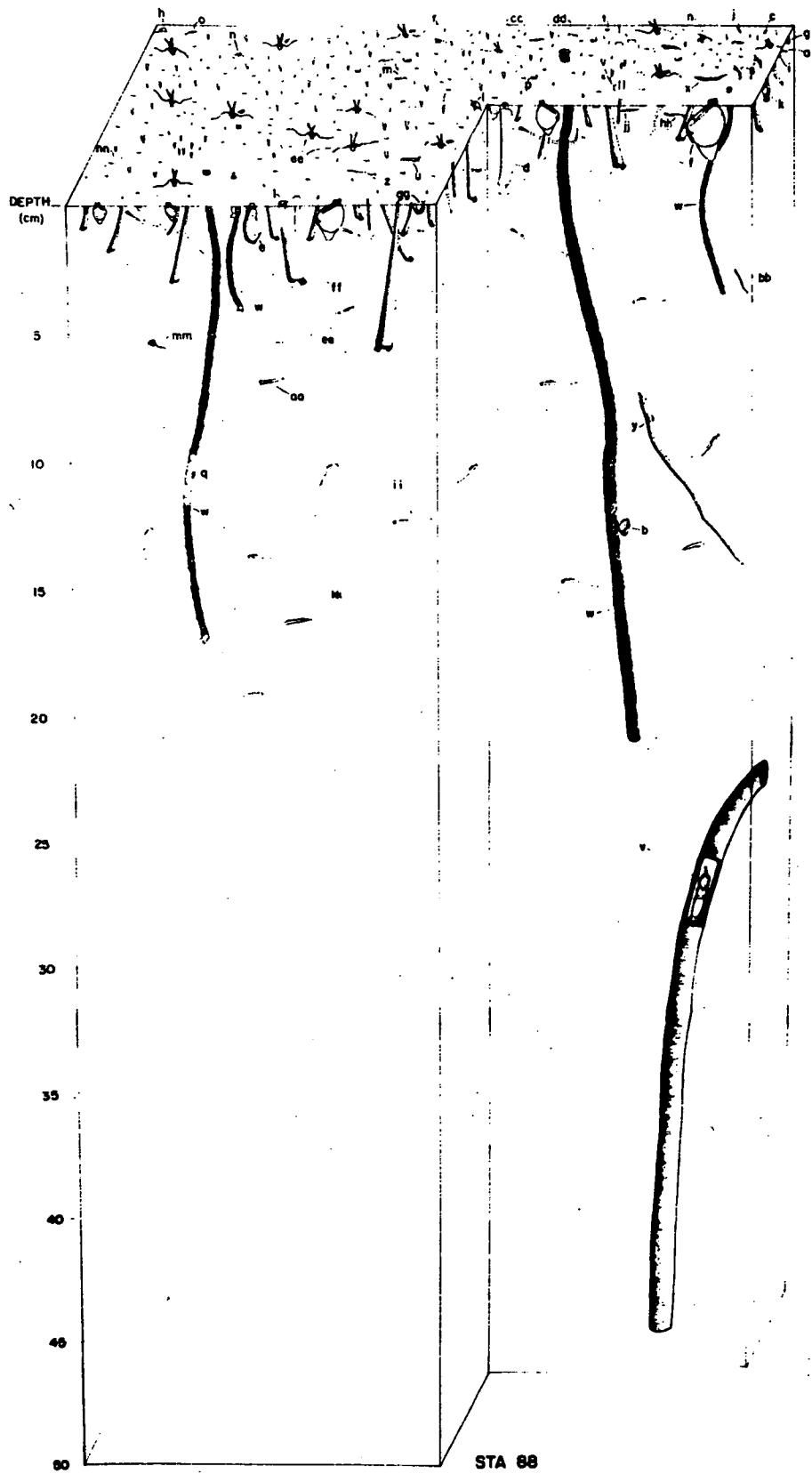


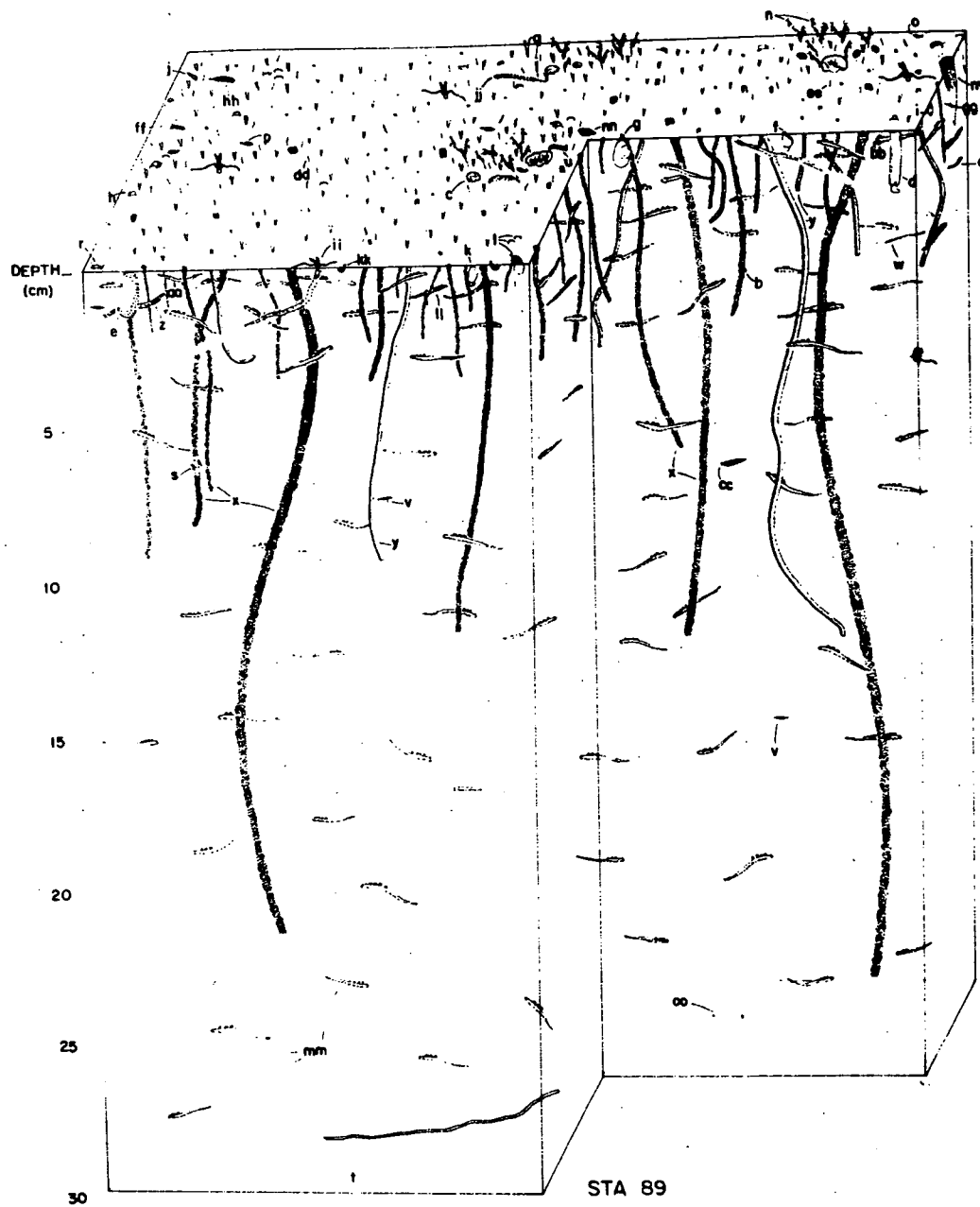


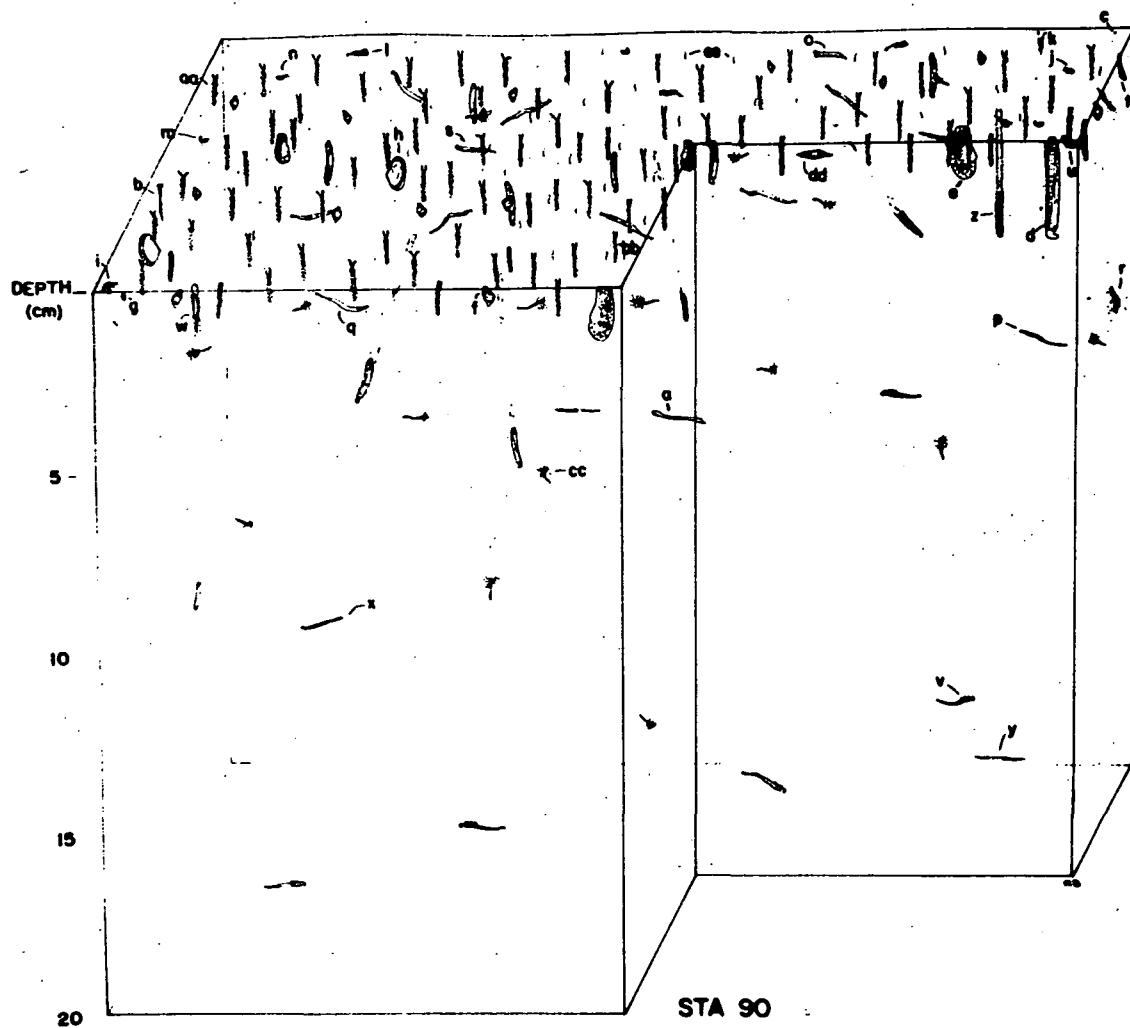


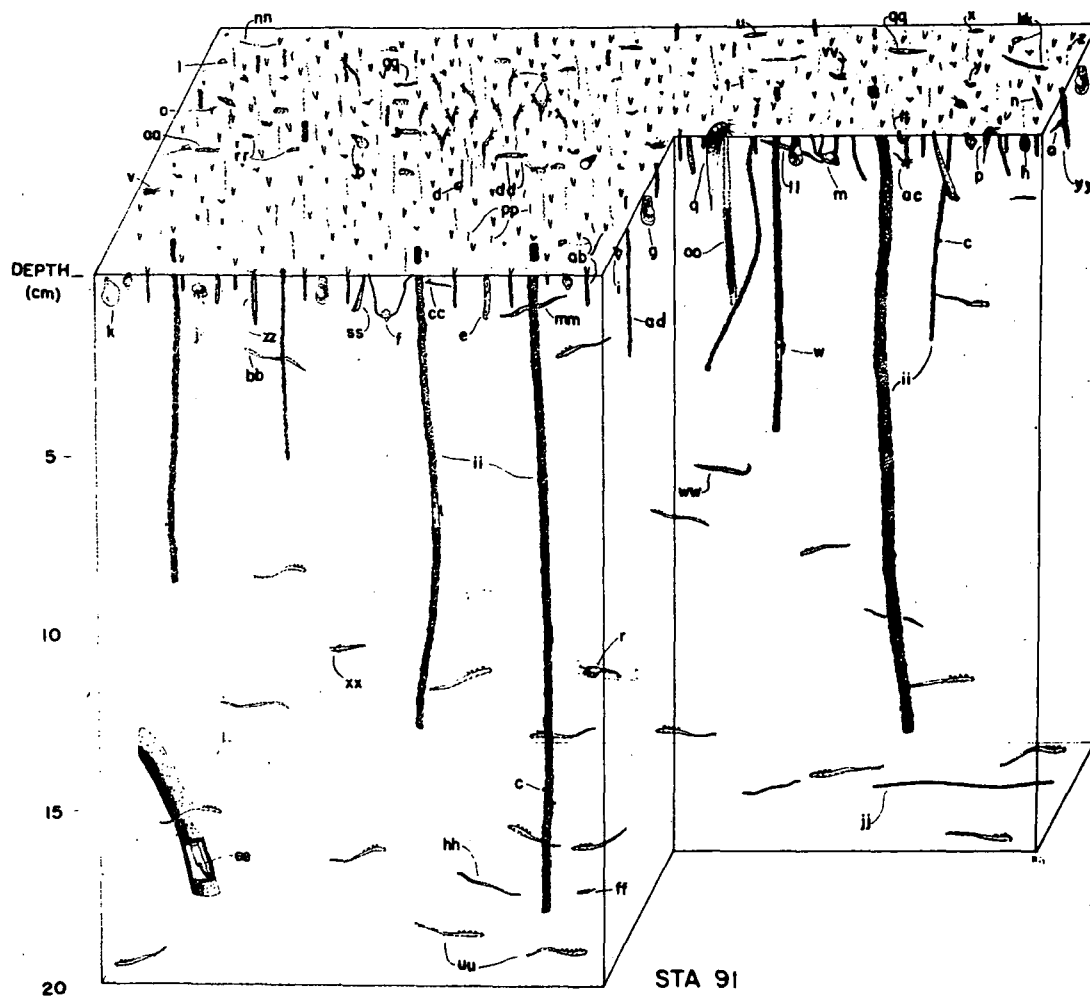


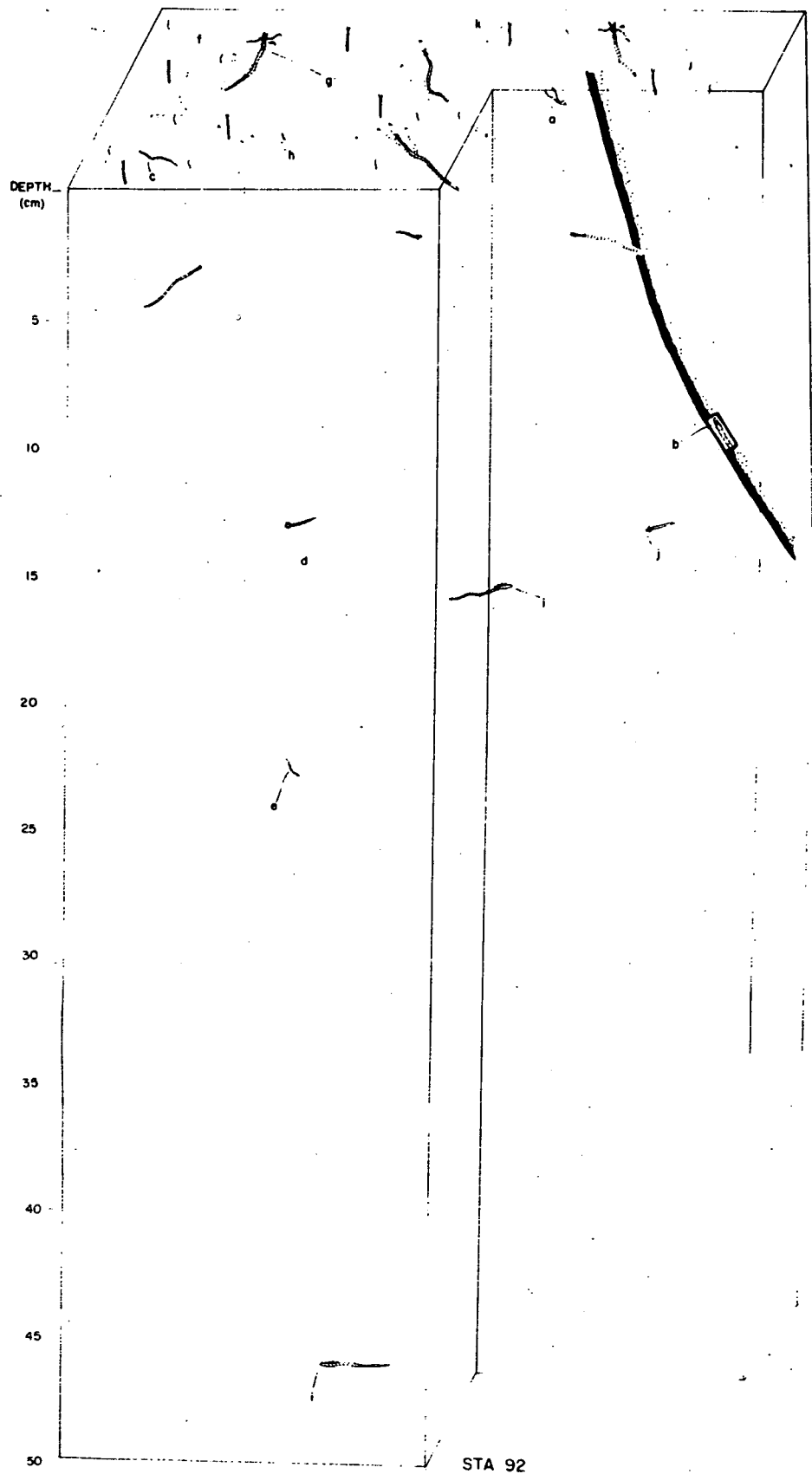


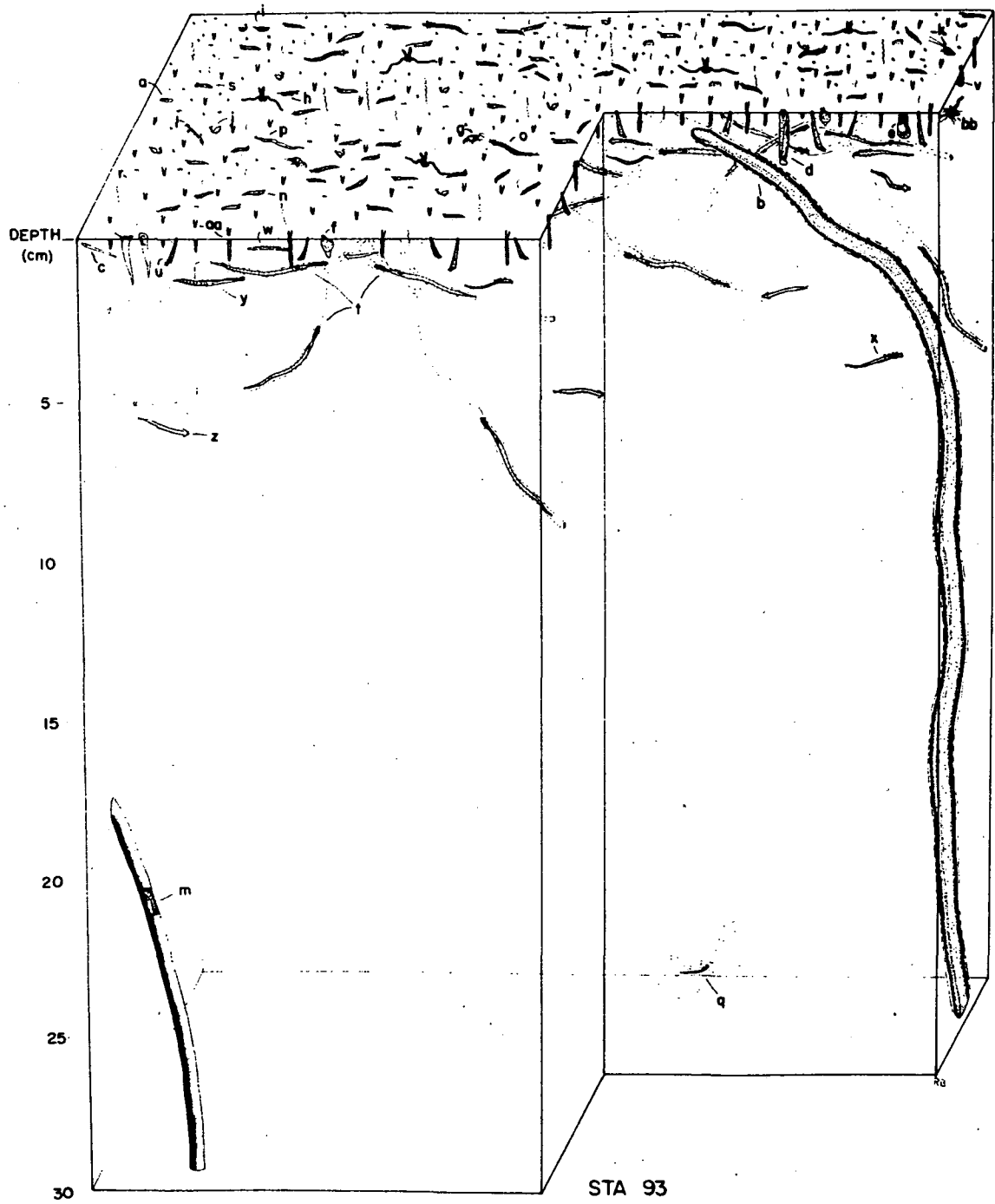


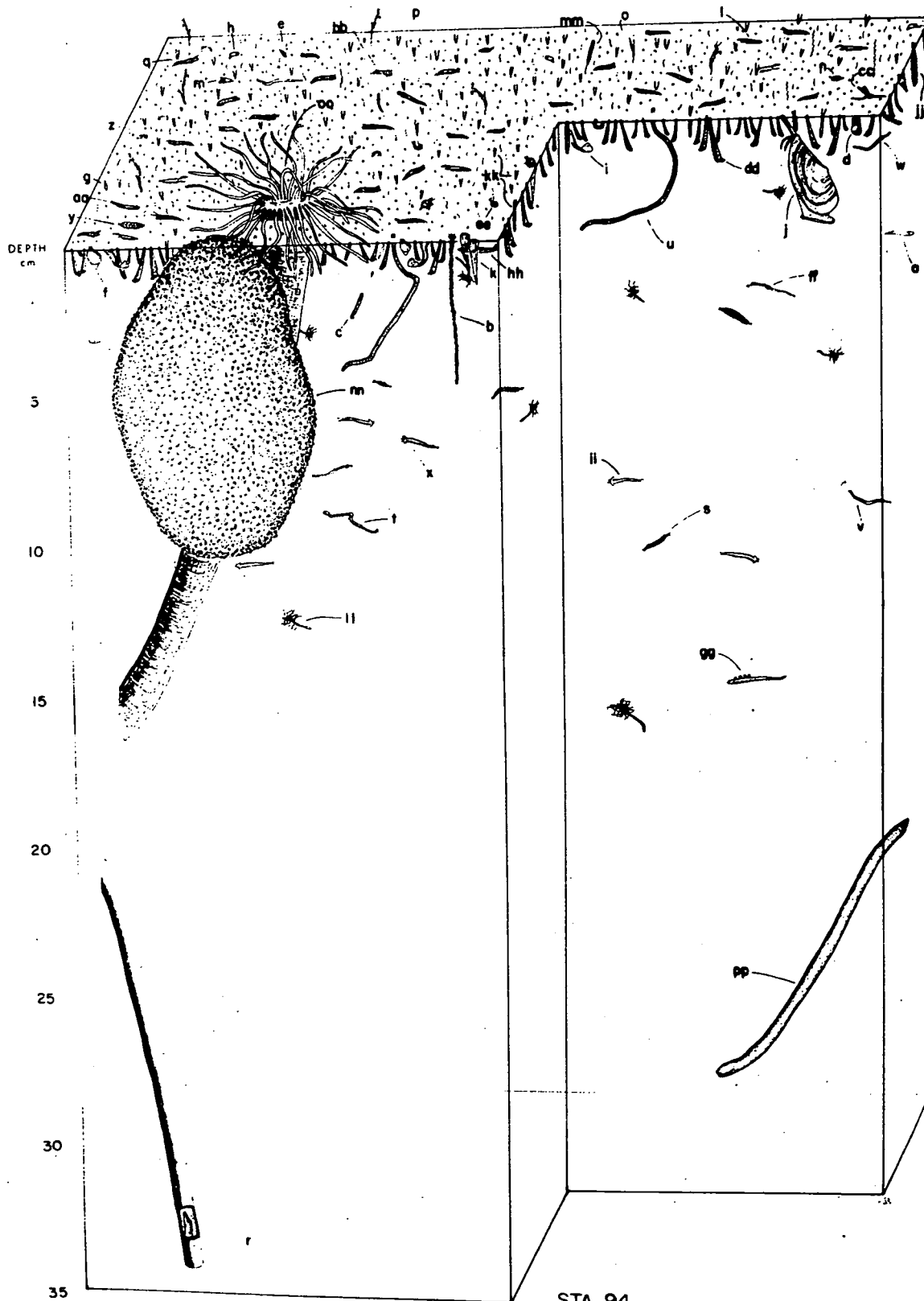


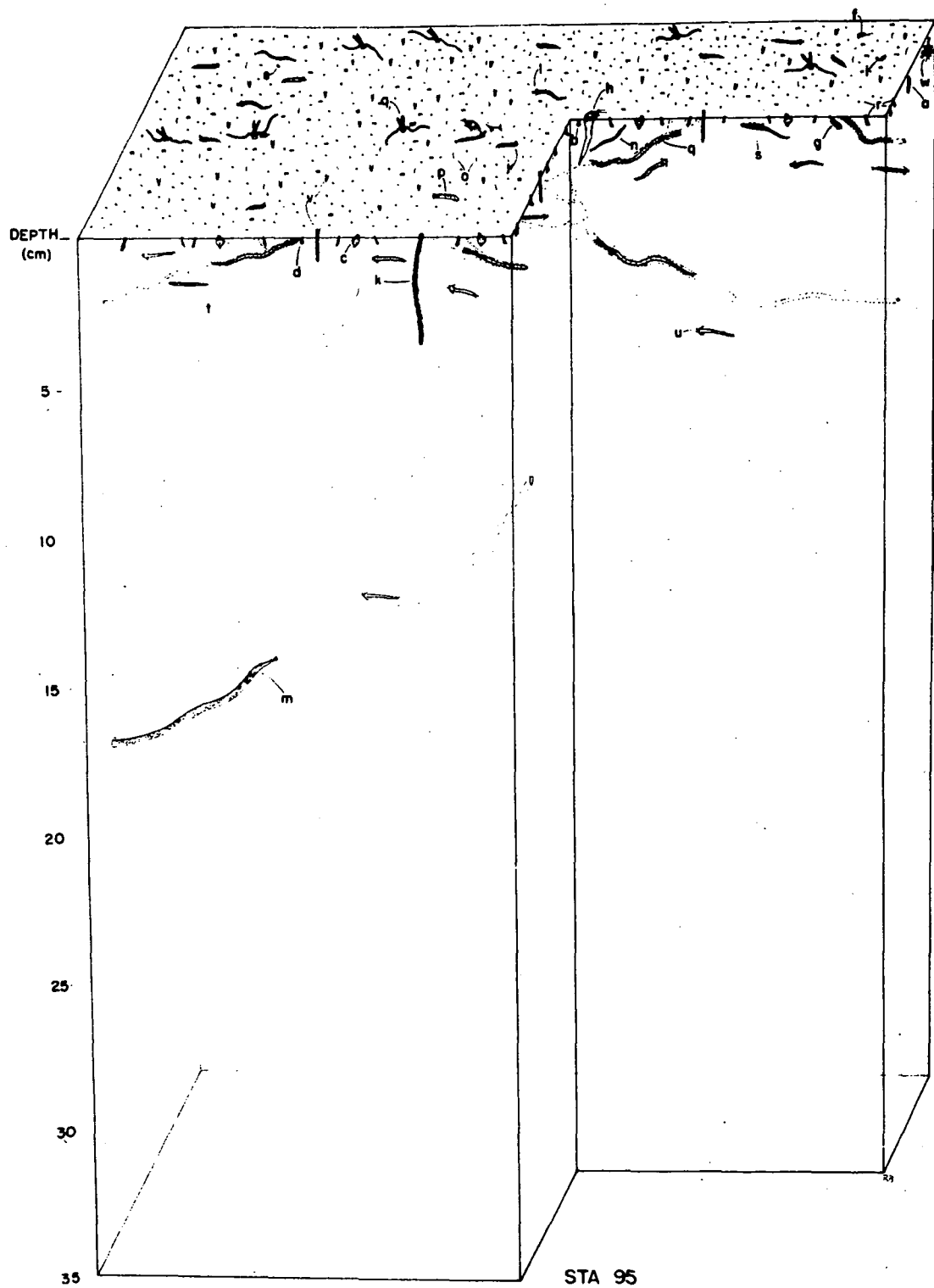


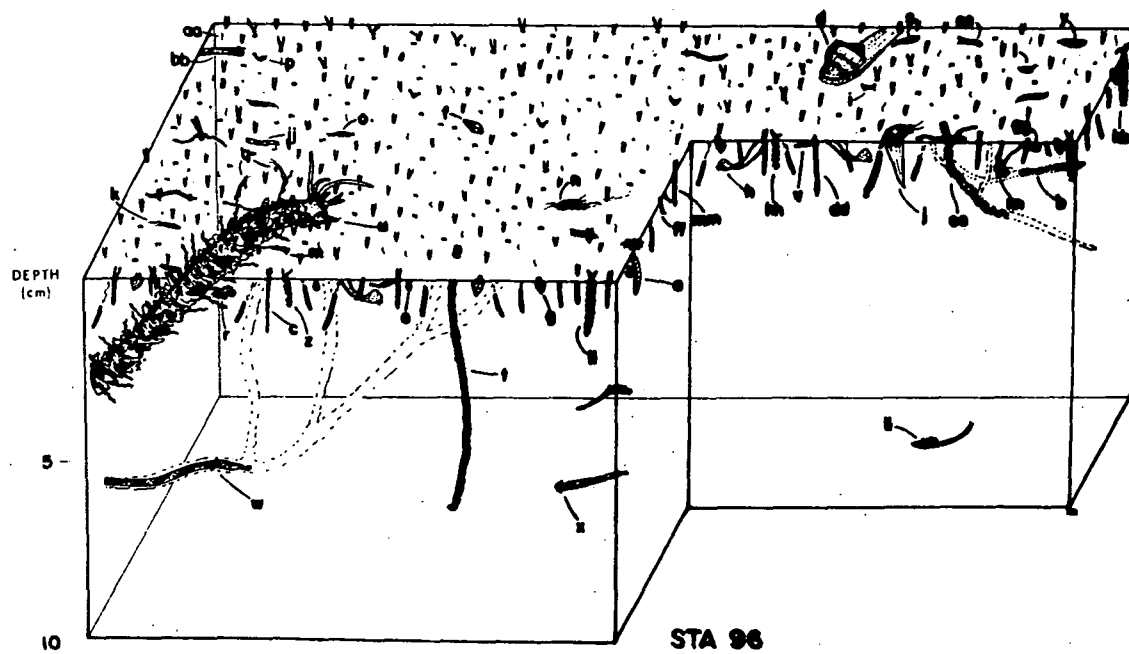


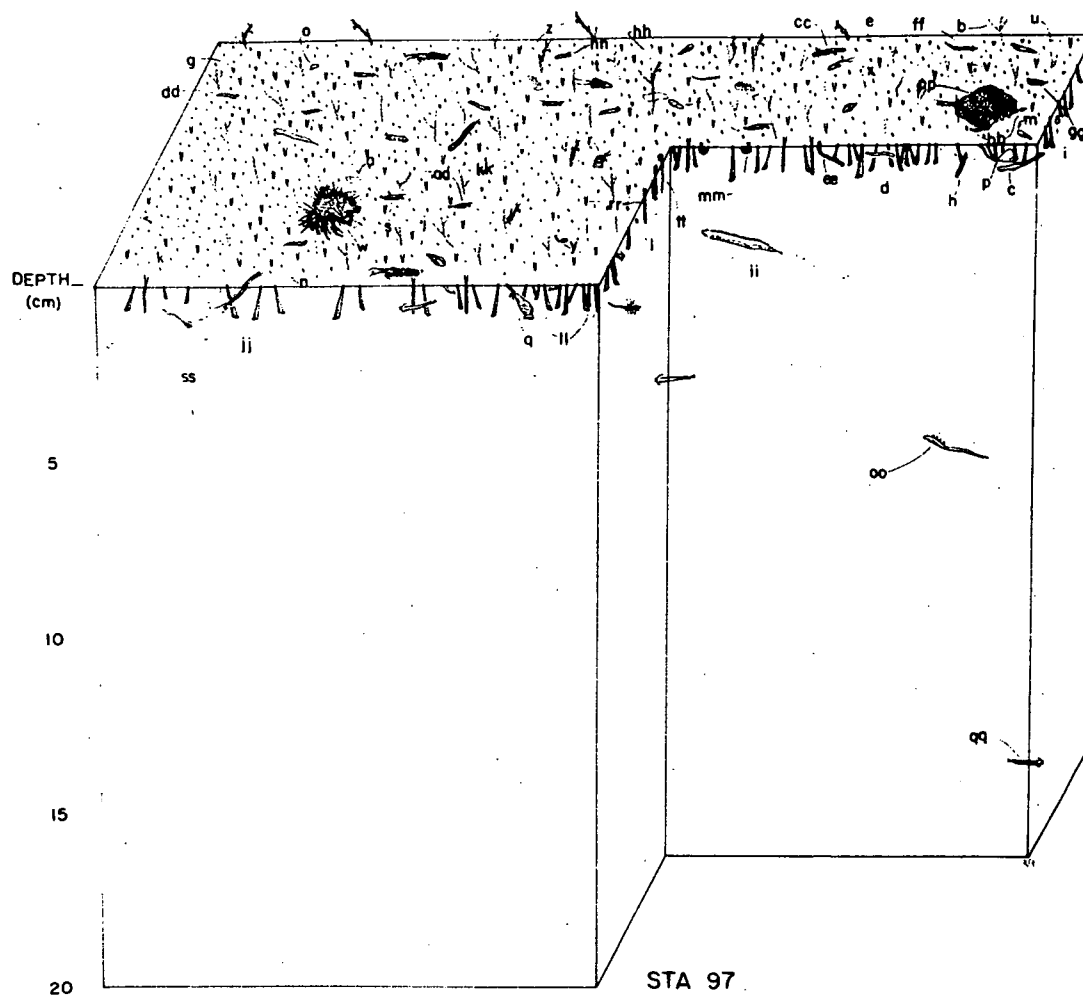


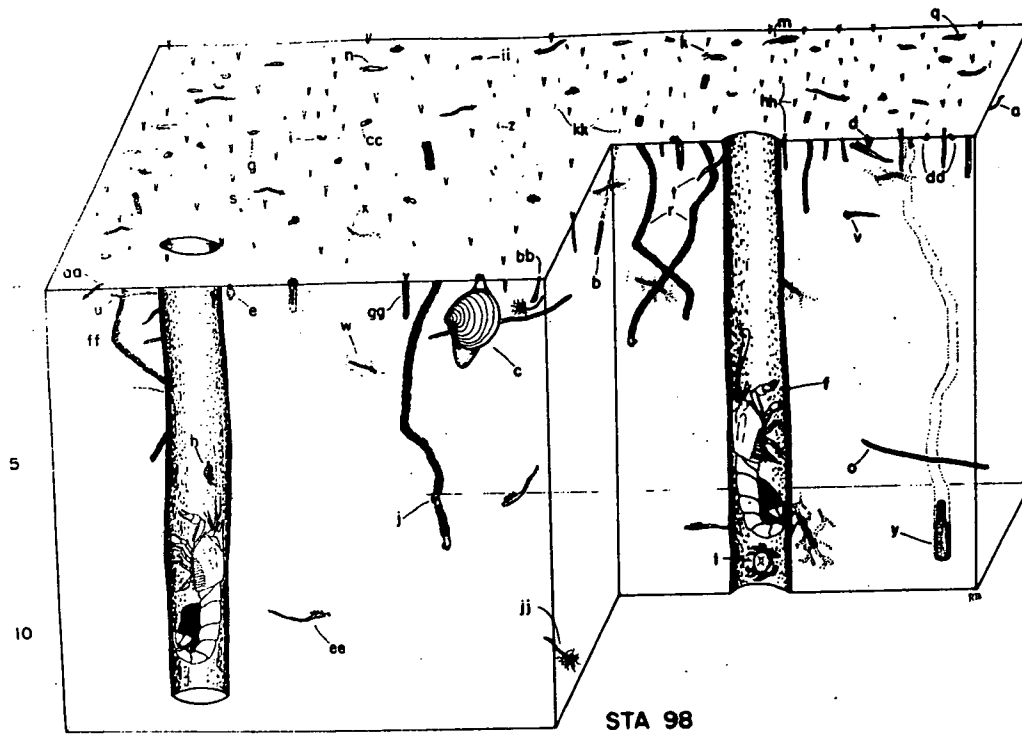


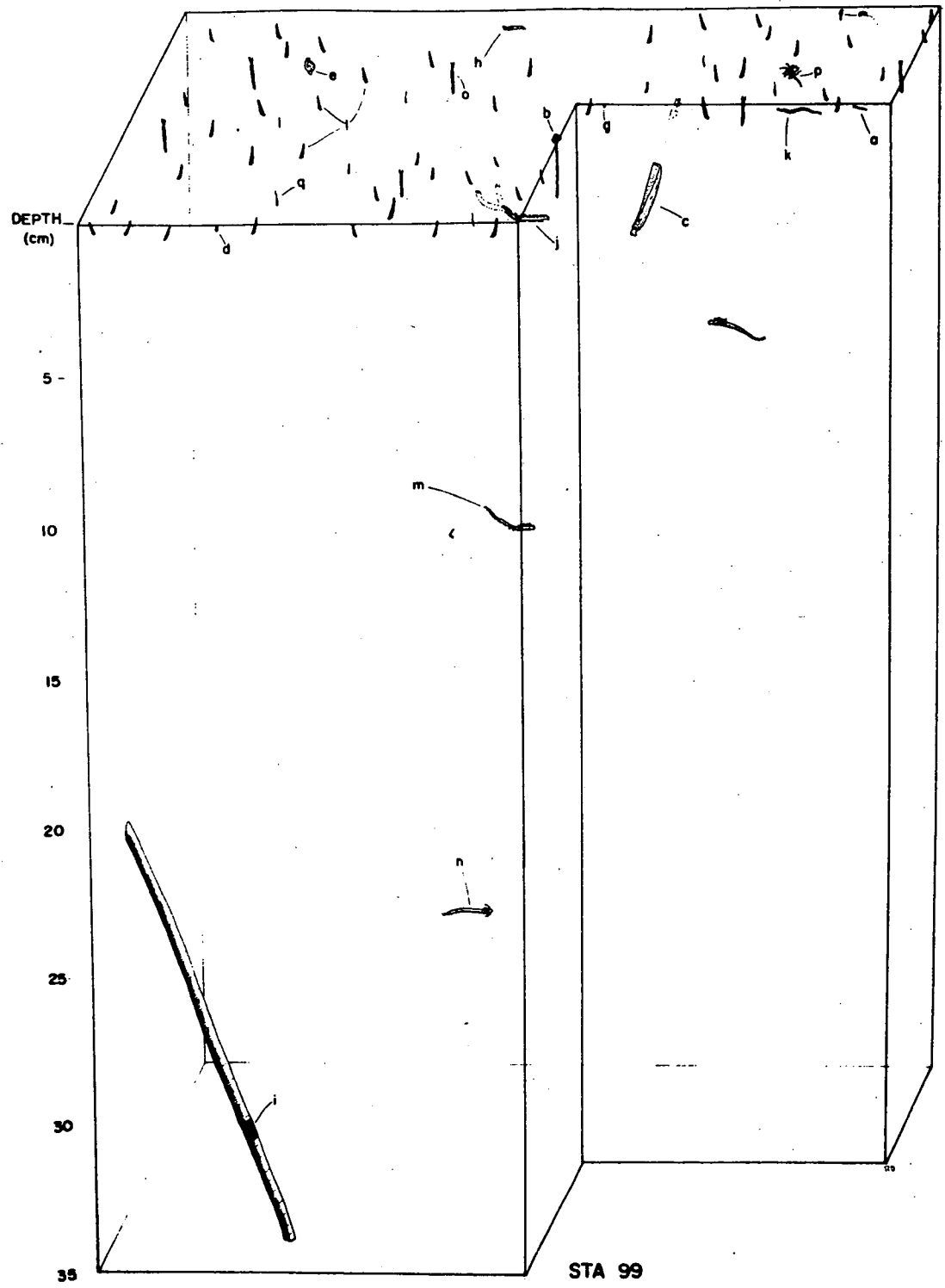


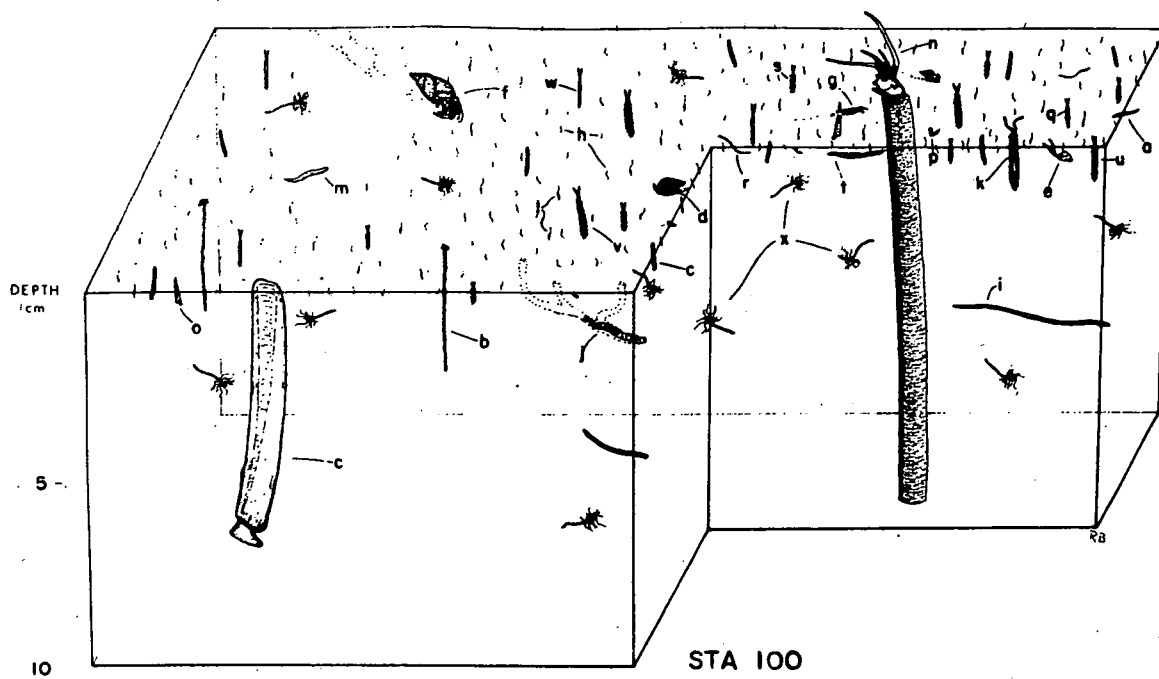


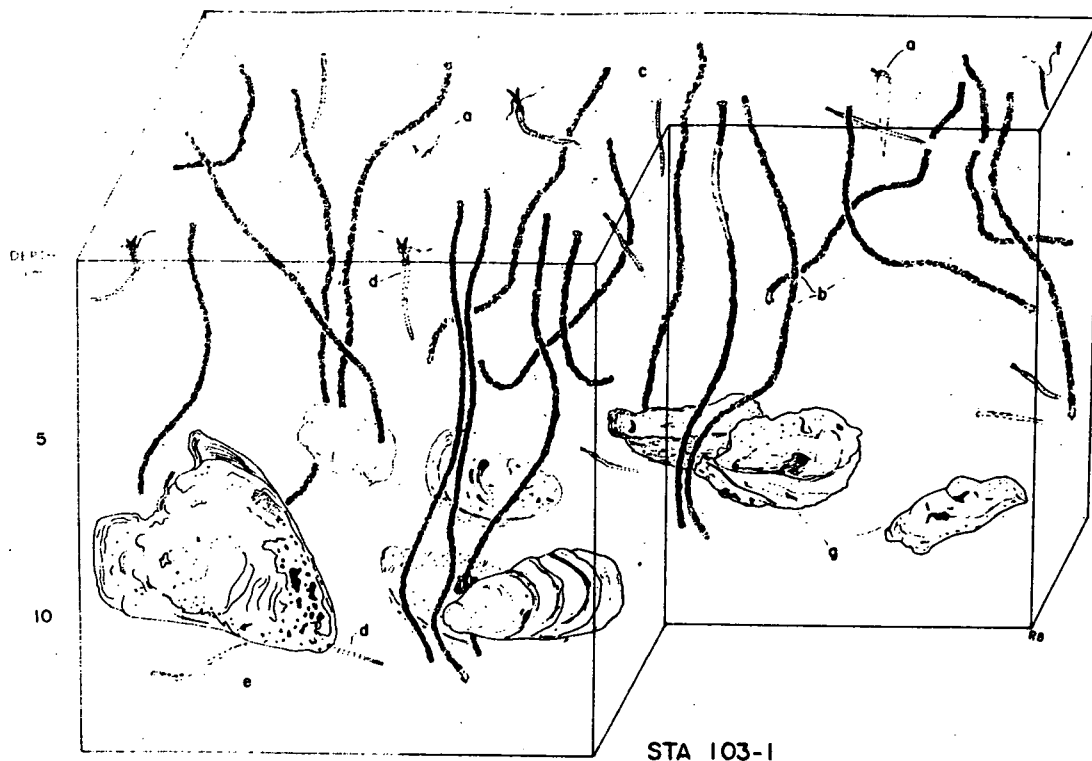




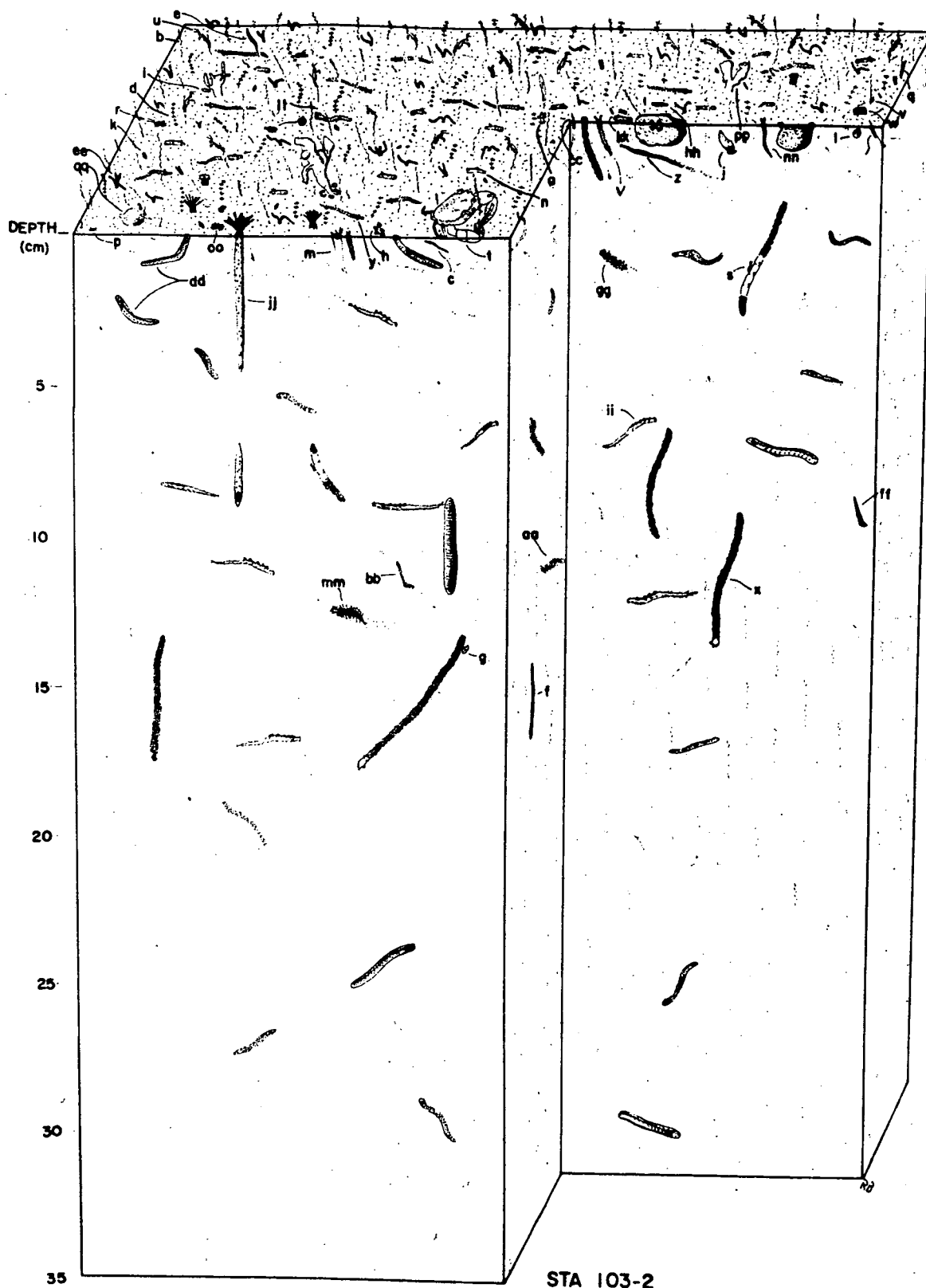


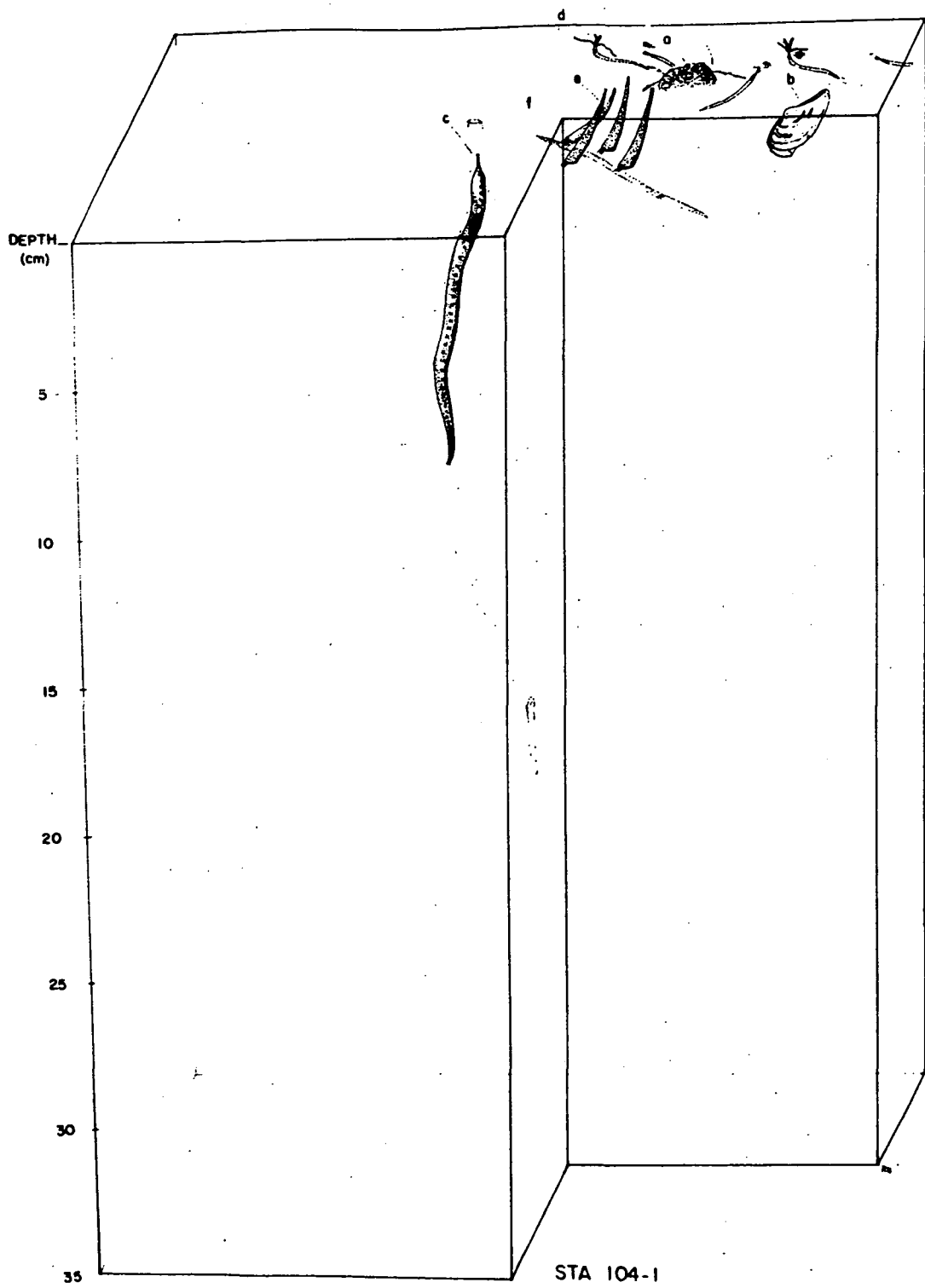


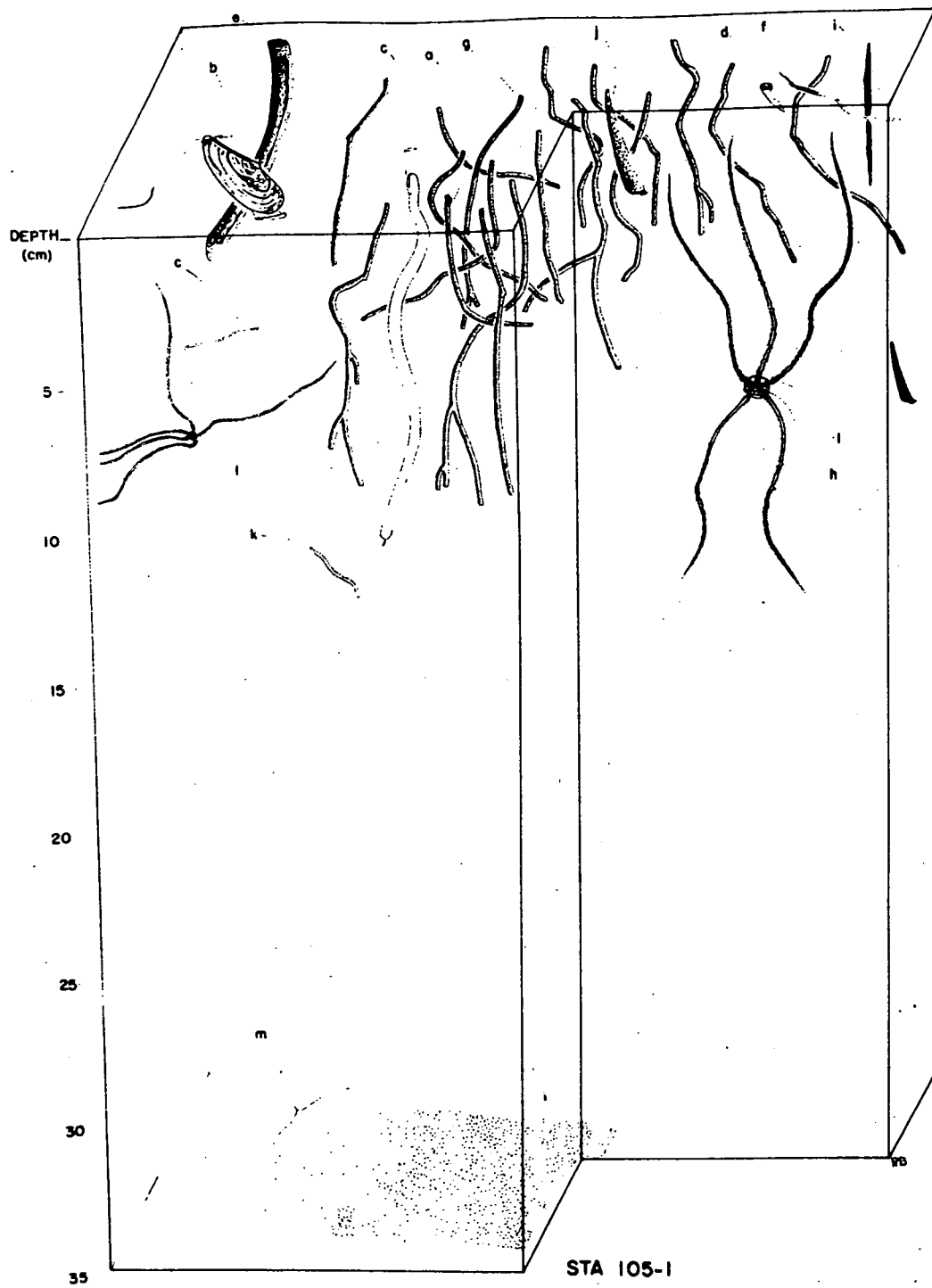




STA 103-1







Appendix E

Station description with visual observations, x-ray description
and important biogenic species

Station: 27 9-78

Area: Pocomoke Sound (16 ft) Depth penetration: 30 cm

Sediment: medium-fine sand with increasing coarse sand & gravel with depth

Visual Structures:

Physical: many mineral colors, surface mottled with mud clasts, deeper get streaks of clay, thin layer mud under stones.

Biological: few Clymenella tubes on surface, 15-20 mud filled burrow (7 mm)

Imp. Biogenic Agents:

C. torquata - "conveyor belt" which mixes top 15-20 cm

P. ambigua - deep random burrowing polychaete

P. pinnata - thin burrow in the top 5 cm

X-ray structures:

Physical - between 13-16 cm. See transition of medium and fine sand to coarse sand and gravel. This represents a storm erosion layer, few mud clasts in upper 10 cm, mud lining underneath stones

Biological - few Clymenella tubes; most abundant are Paraprionospio pinnata burrows.

Station: 28 9-78

Area: just south of Potomac River mouth (82 ft)
Depth penetration: 28 cm

Sediment: fine-medium sand

Visual Structures:

Physical: few pebbles and clay veins toward bottom

Biological: on surface lots of Pectinaria tubes, few Clymenella tubes, 7 mm wide chaetopterid tube, glycerid polychaete trace to 28 cm. Clymenella tubes and a chaetopterid tube extend all the way to the bottom of the core

Important Biogenic Agents:

Chaetopterus variopedatus - large tube dweller

Paraprionospio pinnata - thin burrows

Pseudeurythoe ambigua - deep burrowing polychaete

Clymenella torquata - "conveyor belt" species

Glycera dibranchiata - large burrow dwelling polychaete
capable of ventilating its burrow

X-ray Structures:

Physical - large lump of iron at 12-17 cm, more pebbles >15 cm down,
one mud clast at 10 cm, lg irregular dark area 20-25 cm?

Biological: few pectinaria tubes on top. Several glycerid
burrows, couple of Clymenella tubes.

Station: 29 9-78

Area: just west of Tangier Island (33 ft)

Depth penetration: 21 cm

Sediment: fine-medium sand

Visual Structures:

Physical: streaks of darker sediment (mottled R.P.D.)

Biological: few Clymenella & ampeliscid tubes on surface
large terebellid tube 0-10 cm, phoronid tube 5-20 cm.
13 mm hole going out of core 10-15 (Callianassid shrimp?)

Important Biogenic Agents;

Terebellidae - large tube dweller

Deep errant polychaetes - Pseudoeurythoe ambigua, Ancistrosyllis,
Orbinids, Driloneris

Phoronid - thin vertical sand tubes

X-ray structures

Physical: uniform bioturated sand

Biological: very little - few phoronid tubes, mostly a mobile
fauna

Station 30 9-78

Area: off southern tip of Tangier Island (88 ft.)

Depth penetration: 38 cm

Sediment: mud - (fluid on top 5-6 cm)

Visual Structures:

Physical: none

Biological: surface matted with Ampelisca. Several unoccupied
Terebellid tubes 5-15 cm. Hydroid strands 25-30 cm

Important Biogenic Agents:

Ampelisca abdita - tubes stabilize surface sediment

Nereis succinea - ventilates burrows

Terebellids - large ventilating tube dweller

X-ray: no good because sample was frozen

Station: 31 9-78

Area: west shore between Potomac River & Rappahannock River (44 ft)

Depth penetration: 19 cm

Sediment: mud (fluid)

Visual Structures:

Physical: none

Biological: none

Important Biogenic Agents: none

X-ray: sample frozen so no x-ray

Station: 32 9-78

Area: toward eastern shore between Rappahannock & Potomac Rivers
(46 ft)

Depth Penetration: 20 cm

Sediment: muddy sand, poorly sorted

Visual Structures:

Physical: none

Biological: ampeliscid tubes, few Pectinaria & Clymenella tubes,
hydroids at 0-5 cm at 5-10. Terebellid tube, at 10-15
Clymenella tubes, Terebellid tube and hydroids, at 15-20
old ampeliscid tubes, 4 mm burrow with gold brown long,
and still have Terebellid tube.

Important Biogenic Agents:

Pectinaria - mobile tube dweller & "conveyor belt" species

Clymenella - "conveyor belt" species

Deep burrowing polychaetes - Orbinids, Pseudeurythoe ambigua,
Pilargids

X-ray Structures: lost due to refrigeration failure (dried out)

Station: 33 9-78

Area: near the mouth of the Rappahannock River (35 ft)
Depth penetration: 40 cm

Sediment: fine sandy mud

Visual Structure:

Physical : fluid top 3 cm

Biological: few stringy tubes on surface, 0-5 cm short piece of
parchment-like tube, 5-20 cm Glycerid traces, 20-25 cm
capitellid traces

Important Biogenic Agents:

Nereis succinea: ventilates burrow

X-ray Structure: none due to refrigeration failure

Station: 34 9-78

Area: middle of Bay off the Rappahannock River (39 ft)
Depth penetration: 21 cm

Sediment: very fine sandy mud

Visual Structures:

Physical: fluid surface

Biological: 1 mm dia tubes of Clymenella torquata and stringy tubes on top (Paraprionospio pinnata?), few Pectinaria tubes on surface. 5-10 cm. 1 mm diameter burrow trace vertical, large 6 mm in diameter tube, 10-15 cm part of U shaped tube. (Loimia medusa), continuation of the 6 mm tube, 15-21 cm continuation of 6 mm tube

Important Biogenic Agents:

Paraprionospio pinnata - small burrows
Clymenella torquata - "conveyor belt species"

X-ray Structures:

Physical: none

Biological: many in back-filled burrows of various sizes.
Nereis burrow 0-4 cm, few vertical maldanid tubes, many small burrows of P. pinnata at 0-8 cm patch of small capitellid like traces at 17-21 cm (probably Heteromastus filiformis). Some Mulinia shell hash on surface

Station: 35 9-78

Area: toward Eastern Shore of Rappahannock River (39 ft)

Depth penetration: 38 cm

Sediment: very fine sandy mud

Visual Structures:

Physical: none

Biological: 0-5 cm P. pinnata mucoid tubes, ampeliscid tubes, many Pectinaria tubes, 1g Chaetopterid tube, many Clymenella tubes, couple of terebellid tubes, 5-10 cm continuation of Clymenella and terebellid tubes, ophiuroid in life position. 10-15 cm piece of cerianthid tube, continuation of Clymenella tubes. 20-25 cm continuation of Clymenella and terebellid tubes. 25-30 cm capitellid traces. 30-38 cm nothing.

Important Biogenic Agents:

Clymenella torquata - "conveyor belt species"

X-ray Structures:

Physical: slight trough cross bed sand in the upper 2 cm

Biological: couple of Clymenella tubes, many back-filled burrows of Glycerids, Terebellid and Cerianthid anemones. P. pinnata traces in the top 8 cm. Few capitellid traces

Station: 36 9-78

Area: Eastern Shore opposite Rappahannock River (37 ft)
Depth penetration: 21 cm

Sediment: muddy sand mixed with gravel

Visual Structure:

Physical: mottled R.P.D., 0-5 cm, increasing amount of pebbles with increasing depth

Biological: surface has Sabellaria vulgaris tubes. few ampeliscid tubes, one Pectinaria, one Ampharetid tube, section of Cirratulid burrow with reddish-brown lining. 5-10 cm continuation of burrows and ampharetid tube. 10-15 cm continuation of cirratulid burrow. 15-20 cm nothing

Important Biogenic Agents:

Nereis succinea - ventilates its burrow

Ampharetid - tentaculate polychaete which mound sediment around

Cirratulidae - large burrowing polychaete with lined burrow

X-ray Structure:

Physical: scattered pebbles, mottled with mud

Biological: many shell 1mm in diameter burrow (either P. pinnata or juvenile Nereis), 0-5 cm, couple of large back-filled burrows and cirratulid burrow (probably Cirriformia grandis)

Station: 37 9-78

Area: west shore of transect between York & Rappahannock Rivers
(22 ft)

Depth penetration: 18.5 cm

Sediment: poorly sorted sand - lots of shell & gravel

Visual Structure:

Physical: lots of gravel on bottom

Biological: Clymenella tubes seen from surface. Ampharetid tube
0-15 cm, 5-10 cm 11 mm in dia. mud filled burrow, Glycerid
traces

Important Biogenic Agents:

Mobile polychaetes - Glycera, Drilonereis, Pilargids, Pseudeurythoe

X-ray Structures:

Physical: lots of pebbles & shell hash, large oyster shell at 13
cm, grey uniform sediment, a mud layer .5 cm

Biological: Clymenella tube to 10 cm, mobile fauna responsible
for uniform sediment

Station: 38 9-78

Area: middle of the Bay between York & Rappahannock Rivers (37 ft)
Depth penetration: 51 cm.

Sediment: poorly sorted sandy mud

Visual Structure:

Physical: none

Biological: Terebellid tube 0-51 cm, few Pectinaria tubes on surface, mucus tubes of P. pinnata

Important Biogenic Agents:

Pectinaria gouldii - mobile tube dweller, "conveyor belt species"

Loimia medusa - large tube dweller

Glycera americana - large polychaete which ventilates its burrow

X-ray Structure:

Physical: sand patch on surface to 2 cm

Biological: many various back-filled burrows, glycerid traces, capitellid burrows at 25 cm

Station: 39 9-78

Area: toward Eastern Shore between York & Rappahannock River (43 ft)
Depth penetration: 17 cm

Sediment: poorly sorted sand

Visual Structure:

Physical: gravel on bottom, black mottling, lots of Mytilus edulis shells

Biological: at 5-10 cm, a 2.4 cm diameter burrow (Callianassa atlantica) at 10-15 cm ophiuroid arm, Callianassa atlantica, many reddish-brown burrows with cirratulid tentacles (Cirriform grandis)

Important Biogenic Agents:

Callianassa atlantica - large burrow, process large amounts of sediment

Mobile polychaetes - Glycera, Pseudoeurythoe, Cirratulids, Arabellids

Micropholis atra - ventilates its burrow

X-ray Structure:

Physical: wavy sand layering in the top 4 cm, large pebbles & gravel, mud clasts

Biological: lots of small indistinguishing worms traces, general uniform sediment brought on by bioturbation of a mobile fauna

Station: 40 9-78

Area: Eastern Shore between York & Rappahannock Rivers
Depth Penetration: 33 cm

Sediment: medium fine sand

Visual Structure:

Physical: mottled RPD

Biological: Maldanid tube 0 to 25 cm, Whelk on surface, Ensis directus at 5-10 cm, fragment of cerianthid anemone tube, 10-15 cm goldish-brown burrows

Important Biogenic Agents:

Busycon carica - plower of the top several cm

Ensis directus - large burrowing bivalve

Clymenella torquata - "conveyor belt" species

Glycera americana - large burrow which it ventilates

Pseudoeurythoe ambigua - deep burrower

Micropholis atra - ventilates its burrow

X-ray Structure:

Physical: 16-22 cm patch of shell fragments

Biological: thin burrows along surface, couple of deep back-filled burrows. Mostly bioturbated uniform sands Clymenella tubes 0-15 cm

Station: 41 9-78

Area: between York River and Mobjack Bay (46 ft)
Depth Penetration: 24 cm

Sediment: muddy sand, poorly sorted

Visual Structure:

Physical: gravel throughout increasing with depth (15-20) along
with patches of compact orange and grey clays, strands hydroid
throughout

Biological: 0-5 thin mucoid tubes (P. pinnata), Sabellaria reefs,
Pectinaria tubes, 10-15 cm capitellid worm traces

Important Biogenic Agents

Nereis succinea - ventilates its burrow
Clymenella torquata - "conveyor belt" species

X-ray Structure:

Physical: lots of Anadara shell hash near surface, very mottled
looking, more stones at bottom with "islands of clay" mud living
around stones

Biological: couple back-filled burrow, Pectinaria tubes

Station: 42 9-78

Area: Eastern Shore opposite York River (38 ft)
Depth penetration: 36 cm

Sediment: muddy fine sand

Visual Structure:

Physical: none

Biological: lots of Clymenella tubes, Cerianthid anemone tube at
15-20 cm, at 25-30 cm mud cylinder

Important Biogenic Agents:

Clymenella torquata - "conveyor belt species"
Various mobile polychaetes

X-ray Structures:

Physical: shell hash 30-35 cm, mud streak 25 cm

Biological: many Clymenella tubes to 18 cm, few orbinid polychaete
traces, few back-filled burrows in the deeper layers, streak
of mud 30-35 cm

Station: 43 9-78

Area: mid Bay off York River (38 ft) Depth Penetration: 25 cm

Sediment: muddy sand, poorly sorted

Visual Structure

Physical: gravel further down

Biological: Yoldia limatula at 3 cm. Pb₂₁₀ core at this station resulted in a large cerianthid anemone. P. pinnata at 0-5 cm, 0-10 Praxiella gracilis tube, several misc. burrows, capitellid traces 10-13 cm, large burrow at 15-20 cm

Important Biogenic Agents:

Yoldia limatula - large deposit feeding bivalve, bioturbator

Maldanidae - "conveyor belt" species

Mobile polychaetes - general bioturbators

Micopholis atra - ventilates its burrow

X-ray Structure:

Physical: lg patch of sand without mud on left side 16-25 cm deep.
lots of shell hash on surface

Biological: few maldanid tubes, some back-filled burrows, cerianthid trace or streaks at 19-28 cm, few mobile polychaete traces

Station: 44 9-78

Area: just north of Buckroe Beach (24 ft)
Depth Penetration: 13 cm

Sediment: well sorted fine sand with lots of shell hash

Visual Structure:

Physical: surface rippled with wave height of 2 cm. Wave length 1/2 width of box. lots of shells.

Biological: Mulinia lateralis on surface, Glycerid polychaetes 5-10 cm.

Important Biogenic Agents:

Mulinia lateralis - produces "sitz" marks
Glycera dibranchiata - ventilates its burrow

X-ray Structure:

Physical: lots of shell hash, ripple at right end surface, mud chart under crest. Very dynamic

Biological: one back-filled burrow

Station: 45 9-78

Area: western side near the James River (29 ft)
 Depth Penetration: 27 cm

Sediment: medium fine sand

Visual Structures:

Physical - few pebbles

Biological - Busycon on surface, maldanid tubes, phoronid tubes

Important Biogenic Structures:

Busycon carica - "plower"

 Mobile polychaetes - Pseudoeurythoe, Glycera, Scoloplos

X-ray Structures: no x-ray

Station: 46 9-78

Area: mid Bay off Fishermen's Island (49 ft)

Depth Penetration: 18 cm

Sediment: muddy sand, poorly sorted

Visual Structures:

Physical - none

Biological - Pectinaria tubes on surface, terebellid tubes beyond 17 cm, Yoldia & Tellina in 0-5 cm layer, Cerebratulus in 5-10 cm layer

Important Biogenic Agents:

Pectinaria gouldii - mobile tube dweller, "conveyor belt species"

Asychis elongata - large tube dwelling polychaete

Mobile fauna - Glycera, Pseudeurythoe, Cerebratulus

X-ray Structures:

Physical - shell fragments 0-5 cm

Biological - L. medusae tubes, grey bioturbate texture due to mobile fauna

Station: 47 9-78

Area: Hampton Roads (44 ft) Depth Penetration: 38 cm

Sediment: muddy fine sand

Visual Structure:

Physical: none

Biological: Terebellid & Maldanid tubes all the way down

Important Biogenic Structures:

Upogebia affinis - decapod burrower

Terebellidae - large tube dwelling polychaete

Maldanidae - "conveyor belt" species

X-ray Structures:

Physical - patch of layered mud-sand (laminated) at 7-8 cm.
Shell hash patchy at 20-26 cm

Biological - few P. pinnata burrows, a Pectinaria tube, maldanid tube, several glycerid burrows deeper down & capitellid traces deep

Station: 48 9-78

Area: off Little Creek (28 ft) Depth Penetration: 18 cm

Sediment: a fine sand with lots of shell hash

Visual Structures:

Physical - none

Biological - Mulinia lateralis on top, Loimia medusa tube,
mobile polychaetes

Important Biogenic Structures:

Loimia medusa - large tube dwelling polychaete

Paraprionospio pinnata - small burrows

Pseudoeurythoe ambigua - deep burrowing polychaete

X-ray Structures:

Physical - shell lag area 10-15 cm

Biological: numerous P. pinnata burrows at 0-7 cm, lots of
glycerid traces, grey bioturbate texture from mobile fauna

Station: 49 9-78

Area: off Lynnhaven (38 ft) Depth Penetration: 55 cm

Sediment: muddy sand top 20 cm than sandy mud 20-55 cm

Visual Structures:

Physical - more clay 40-50 cm

Biological - surface mucoid tubes of P. pinnata and Ampelisca,
Yoldia at 0-5 cm. Maldanid tubes to 20 cm, glycerid burrow
25-30 cm, Mulinia shells below 20 cm, lots of mud filled
burrows 35-40 cm, capitellid burrows, more glycerid burrows
to 50 cm

Important Biogenic Agents:

Yoldia limatula - deposit feeding mollusc bioturbator

Upogebia affinis - large deep burrowing decapod

Maldanids - "conveyor belt" species

X-ray Structures:

Physical - top 8 cm sandier, patches of mud with thin sand layer
at 1-5 cm and 30 cm

Biological - lots shell hash top 8 cm lot of mottling of back-
filled burrows in last 30 cm (probably Asychis and Glycerids)

Station: 50 9-78

Area: off Cape Henry (58') Depth Penetration: 22 cm

Sediment: medium-fine sand

Visual Structures:

Physical: none

Biological: Nassarius crawling on top, mobile polychaetes

Important Biogenic Agents:

Mobile polychaetes - Glycera, Orbinids, Arabellids

X-ray Structures:

Physical - large Ensis shell, slight layering on top 1 cm

Biological - small worm traces, general grey bioturbate texture

Station: 76 6-79

Area: Tangier Sound (98 ft) Depth Penetration: 30 cm

Sediment: mud

Visual Structures:

Physical - black fluid mud, methane gas holes, dead hydroids throughout

Biological - lots of ampeliscid tubes on top, few Pectinaria on surface

Important Biogenic Agents:

Macoma balthica - deposit feeding bivalve

Ampelisca abdita - stabilizing tubes

Nereis succinea - ventilates its burrow

Pectinaria gouldii - mobile tube dweller, "conveyor belt" species

Capitellids - "conveyor belt" species

X-ray Structures:

Physical: darker mud band 2-4 cm
hydroid mat produces mottling, methane bubbles 10-15 cm

Biological: numerous sinuous worm burrows (P. pinnata,
Mediomastus, small Nereis)

Station: 77 6-79

Area: south of the Potomac River mouth (65 ft)
Depth Penetration: 47 cm

Sediment: muddy medium-fine sand

Visual Structures:

Physical - top sandy mud (0-2 cm) than slightly muddy sand

Biological - lots Pseudeurythoe ambigua, few ampeliscid tubes,
Pectinaria tubes & Clymenella tubes. An abandoned cerianthid
anemone tube

Important Biogenic Agents:

Nereis succinea - ventilates its burrow
Pseudeurythoe ambigua - deep mobile burrower
Glycera dibranchiata - ventilates its burrow

X-ray Structures:

Physical - mottling

Biological - many small worm traces (probably juvenile Nereis)
5-30 cm lots of back-filled burrows producing the mottling

Station: 78 9-78

Area: Tangier Sound (78 ft) Depth of penetration: 35 cm

Sediment: mud - first 10 cm, 10-40 cm medium coarse sand

Visual Structures:

Physical - first 10 cm mud than coarse sand

Biological - Nereis & P. pinnata near surface, no back-filled burrow noted, deep down some old amphipod tubes

Important Biogenic Agents:

Macoma balthica - deposit feeding bivalve

Ampelisca abdita - its tubes stabilizes surface, increases sedimentation

P. pinnata - small burrowing polychaete

Nereis succinea - medium burrowing polychaete, ventilates its burrow

X-ray Structures:

Physical: good demarcation between mud and sand at 5-10 cm, shell lag upper 10 cm, wavy sand laminae in upper 5 cm of mud

Biological: Mulinia at surface, Nereis succinea burrows, Pectinaria tubes, few back-filled burrows

Station: 79 9-78

Area: south of Potomac River Mouth (60')
Depth of Penetration: 30 cm

Sediment: mud (black, fluid)

Visual Structures:

Physical: fluid mud

Biological: few Mulinia on surface

Important Biogenic Agents:

P. pinnata - small burrowing polychaete

X-ray Structures:

Physical - density change with higher mud content 0-8 cm than
sandier further down - not supported by grain size data
maybe just more cohesive

Biological - thin burrows 0-5 cm (probably P. pinnata)
larger Nereis succinea branched burrow at 9-14 cm.
Mulinia on surface, 3-6 cm lots of capitellid traces

Station: 80

6-79

Area: south Tangier Island (58 ft)

Depth of Penetration: 50 cm

Sediment: alternating muddy sand to fine sandy mud

Visual Structures:

Physical - none

Biological - scattered ampeliscid tubes, Loimia tube & Pectinaria
tubes

Important Biogenic Structures:

Ampelisca abdita - stabilizes sediment surface

Pectinaria gouldii - "conveyor belt" species

Heteromastus filiformis - "conveyor belt" species

X-ray Structures:

Physical - laminated mud and sand layers

Biological - Pectinaria tubes, large abandoned Loimia medusa tubes
pierce laminae, capitellid traces

Station: 81 6-79

Area: Pocomoke Sound (51 ft) Depth of Penetration: 50 cm

Sediment: muddy sand

Visual Structures:

Physical - sand gets coarser with depth

Biological - mucoid tubes of P. pinnata on surface, old Loimia medusae tubes, few back-filled burrows. Some Pectinaria tubes

Important Biogenic Agents:

Pectinaria gouldii - "conveyor belt" species
Loimia medusa - large tube dwelling polychaete
Pseudoeurythoe ambigua - mobile polychaete

X-ray Structures:

Physical - lots of shell hash, surface muddier with thin sand layering. Few pebbles & wood

Biological - mottled with back-fill burrows below 8 cm. Lots of Pectinaria on surface Asychis elongata tube 4-11 cm.

Station: 82 6-79

Area: western shore between the Potomac and Rappahannock Rivers
(80 ft)

Depth of Penetration: 30 cm

Sediment: mud (black, fluid)

Visual Structures:

Physical: fluid mud

Biological: none

Important Biogenic Agents:

Pectinaria gouldii - "conveyor belt" species

X-ray Structures:

Physical: methane gas holes, wavy layering top 2 cm and
5-7 cm, mud layer at 10-11 cm and 15-17 cm

Biological: few Mulinia shells, general bioturbate texture at
2-4 cm and 6-12 cm

Station: 83 6-79

Area: north Rappahannock River (40 ft)
Depth of Penetration: 50 cm

Sediment: mud

Visual Structures:

Physical - methane gas holes

Biological - large cerianthid back-filled burrow, lots of
P. pinnata, Macoma at 10 cm.

Important Biogenic Agents:

Cerebratulus lacteus - general bioturbator

P. pinnata - small burrowing polychaete

N. succinea - medium burrowing polychaete, ventilates its burrow

Capitellids - "conveyor belt" species

Macoma balthica - deposit feeding bivalve

X-ray Structures:

Physical - nothing

Biological - many long thin burrows of P. pinnata from 0-12 cm,
6-40 cm back-filled burrows, Macoma at 6 cm, 4 mm burrow
of Nereis succinea at 3-7 cm. Another at 27-34 cm

Station: 84 6-79

Area: mid Bay, north of the Rappahannock River (42 ft.)
Depth of Penetration: 50 cm

Sediment - mud

Visual Structures:

Physical - none

Biological - large cerianthid back-filled burrow, lots of back-filled burrows

Important Biogenic Agents:

Ceriantheopsis americanus - large tube dwelling anemone

Asychis elongata - large tube dwelling polychaete

Nereis succinea - medium burrowing polychaete, ventilates its burrow

X-ray Structures:

Physical - none

Biological - lots of P. pinnata burrows upper 12 cm, 3.5 cm wide back-filled cerianthid tube, 5 mm Asychis tube 9-15 cm.
few Pectinaria on surface, few Mulinia on surface

Station: 85 6-79

Area: mid Bay between the Potomac and Rappahannock River (39 ft.)
Depth of Penetration: 50 cm

Sediment: mud

Visual Structures:

Physical: none

Biological: few Pectinaria on surface, few back-filled burrows

Important Biogenic Agents:

Pectinaria gouldii - "conveyor belt" species

X-ray Structures:

Physical - Mulinia shell hash layer 0-10 cm

Biological - few Mulinia near surface, few thin burrows 0-2 cm,
few juvenile Pectinaria tubes near surface, few vertical
burrows 0-8 cm, lots of back-filled burrows 8-37 cm

Station: 86 6-79

Area: in the mouth of the Rappahannock River (61 ft)
Depth of Penetration: 30 cm

Sediment: mud (black, fluid)

Visual Structures:

Physical - fluid, gas bubbles

Biological - none

Important Biogenic Agents: none

X-ray Structure:

Physical - thin sand laying top 2 cm than gas bubbles. Some
sand layering 6-7 cm. lots of shell hash 1-5 cm

Biological - nothing significant

Station: 87 6-79

Area: off Piankatank River (33 ft)
Depth of Penetration: 50 cm

Sediment: mud

Visual Structures:

Physical - none

Biological - few maldanid tubes, back-filled burrows, few
Pectinaria tubes

Important Biogenic Agents:

Chaetopterus variopedatus - large tube dwelling polychaete

Pectinaria gouldii - "conveyor belt" species

Capitellids - "conveyor belt" species

Glycera americana - large burrowing polychaete, ventilates its
burrow

Loimia medusa - large tube dwelling polychaete

X-ray Structures:

Physical - none

Biological - lots of juvenile Pectinaria on surface, lots of P.
pinnata burrows in the 0-7 cm, lots of small scattered
capitellid burrows, back-filled burrows 5-40 cm

Station: 88 6-79

Area: mid bay between Rappahannock River and Mobjack Bay (38 ft)
Depth of Penetration: 45 cm

Sediment: fine sandy mud

Visual Structures:

Physical - none

Biological - U shaped Loimia medusa tube, Pectinaria on surface,
lots of Mulinia, small Busycon on surface

Important Biogenic Agents:

Mulinia lateralis - small burrowing bivalve
Clymenella torquata - "conveyor belt species", ventilates
P. pinnata - small burrowing polychaete
Capitellid - "conveyor belt" species
Glycerids - large burrowing polychaete, ventilates
Asychis - large tube dwelling polychaete

X-ray Structures

Physical - few pebbles

Biological - Pectinaria & Mulinia on surface. P. pinnata 0-11 cm,
capitellid burrows 0-10 cm, few back-filled burrows

Station: 89

9-78

Area: Eastern Shore between Rappahannock and York Rivers (40 ft)

Depth of Penetration: 30 cm

Sediment: muddy sand

Visual Structures:

Physical: none

Biological: few hydroids on top, lots of maldanid and Pectinaria tubes, Sabellaria reef, Loimia medusa tube, lots of mobile polychaetes, Molgula on top

Important Biogenic Agents:

Clymenella sp. - "conveyor belt" species, ventilates

Mobile polychaetes - Glycera, P. ambigua, capitellids - bioturbators

Pectinaria gouldii - "conveyor belt" species

Molgula manhattensis - prolific biodepositor

X-ray Structure:

Physical: none

Biological: lots of juvenile Clymenella 0-7 cm, lots of P. pinnata burrows, grey bioturbate texture from mobile fauna

Station: 90 6-79

Area: Wolf Trap (26 ft) Depth of Penetration: 20 cm

Sediment: fine-medium sand

Visual Structures:

Physical: few mud layers below 10 cm

Biological: lots of maldanid tubes and Spiophanes bombyx tubes,
mobile polychaetes

Important Biogenic Agents:

Ensis directus - burrowing bivalve

Oligochaete - "conveyor belt" species

Spiophanes bombyx - tube dwelling polychaete, stabilizes

Mobile polychaetes - Glycera, Pseudeurythoe, Scoloplos bioturbation

X-ray Structures:

Physical - thin mud layers at 12, 16, 20, 21 and 25 cm. few
mud layers below 20 cm

Biological - lots of Ensis traces, 0-7 cm. long thin burrows.

Mulinia shell hash layers at 12, 16, 20, 21 and 25 cm. (seems
to be associated with thin mud layers)

Station: 91 6-79

Area: Eastern Shore between Rappahannock and York Rivers (30 ft)
Depth of Penetration: 20 cm

Sediment: medium-fine sand

Visual Structures:

Physical - none

Biological - numerous Mulinia, Ensis and Tellina bivalves, lots of Clymenella tubes, mobile polychaetes and phoronid tubes

Important Biological Agents:

Ensis directus - burrowing bivalve

Tellina agilis - burrowing bivalve

Callinassa atlantica - large burrowing decapod

Clymenella torquata - "conveyor belt" species, ventilates

Pectinaria gouldii - "conveyor belt" species

Spiophanes bombyx - tube dwelling polychaete, stabilizes

Mobile polychaete - Glycera, Pseudoeurythoe, Scoloplos - bioturbators

X-ray Structure: none, dropped

Station: 92 6-79

Area: in Mobjack Bay (20 ft) Depth of Penetration: 50 cm

Sediment: mud (fluid)

Visual Structures:

Physical - fluid mud

Biological - watery tubes, lots of P. pinnata

Important Biogenic Agents: none

X-ray Structure:

Physical: frozen so partially destroyed

Biological: deep worm traces

Station: 93 6-79

Area: off the mouth of Mobjack Bay (43 ft)
Depth of Penetration: 50 cm

Sediment: mud to sandy mud

Visual Structures:

Physical: none

Biological: small maldanid and ampeliscid tubes, dead hydroid fragments throughout, large Cerebratulus found just outside the box. lots of P. pinnata

Important Biogenic Agents:

Cerebratulus lacteus - bioturbator
Pectinaria gouldii - "conveyor belt" species
P. pinnata - small burrowing polychaete
Asychis elongata - tube dwelling polychaete

X-ray Structure: frozen

Physical: mud layer at 20 cm

Biological: few back-filled burrows. Grey bioturbate texture

Station: 94 6-79

Area: mid Bay off Mobjack Bay (55 ft)
Depth of Penetration: 40 cm

Sediment: sandy mud

Visual Structures:

Physical - none

Biological - large ampeliscid tubes, lots of Asabellides and
Pectinaria tubes, old cerianthid tube, glycerid burrow,
Thyone briareus

Important Biological Agents:

Glycera americana - large burrowing polychaete, ventilates
Thyone briareus - large deposit feeding holothurian
Ceriantheopsis americanus - large tube dwelling anemone
Cerebratulus lacteus - bioturbator
Pectinaria gouldii - "conveyor belt" species
Clymenella torquata - "conveyor belt" species, ventilates

X-ray Structures:

Physical: Mytilus edulis shells at 30 cm

Biological: lots of juvenile Pectinaria on surface, some
Clymenella tubes, large mud traces of back-filled burrows
Asychis tube 15-20 cm

Station: 95 6-79

Area: mouth of the York River (35 ft)
 Depth of Penetration: 50 cm

Sediment: mud

Visual Structures:

Physical: none

Biological: P. pinnata tubes on surface, few maldanid and
 Ampeliscid tubes, glycerid traces, old Cerianthid tubes.
 Many back-filled burrows

Important Biogenic Agents:

Glycera sp. - large burrowing polychaete
 Pectinaria gouldii - "conveyor belt" species
 P. pinnata - small burrowing polychaete
 Clymenella torquata - "conveyor belt" species, ventilates
 Capitellids and oligochaetes - "conveyor belt" species

X-ray Structures:

Physical: some sand layering at 15-35 cm

Biological: many Pectinaria juveniles on surface, long P. pinnata
 burrows 0-10 cm, few small Mediomastus burrows at surface
 many back-filled burrow 7-35 cm. Macoma shell layer 12-14 cm
 7-20 cm many capitellid burrows

Station: 96 6-79

Area: mid Bay near York Spit Channel (27')
Depth of Penetration: 13 cm

Sediment: all fine sand

Visual Structure:

Physical: none

Biological - large Diopatra tube, few maldanid tubes, lots of
Ensis, Busycon on surface

Important Biogenic Agents:

Glycera americana - large burrowing polychaete, ventilates
Ensis directus - burrowing bivalve, bioturbator
Clymenella torquata - "conveyor belt" species, ventilates
Spiophanes bombyx - tube dwelling polychaete, stabilizes
Pectinaria gouldii - "conveyor belt" species
Capitellids - "conveyor belt" species

X-ray Structures:

Physical: some sand layering top 0-4 cm, shallow cavity on surface

Biological: Ensis tubes, Diopatra tube, Pectinaria on surface,
Clymenella tubes, lots of small thin branched burrows 0-1 cm

Station: 97 6-79

Area: north of Cape Charles (110 ft)
Depth of Penetration: 20 cm

Sediment: muddy fine sand

Visual Structures:

Physical:

Biological - lots Pectinaria on surface, some glycerid traces

Important Biogenic Agents:

Tellina agilis - burrowing bivalve, bioturbator

Nereis succinea - medium burrow dwelling polychaete, ventilates

Oligochaete - "conveyor belt" species

Sabellaria vulgaris - builds "reefs" of sand

Pectinaria gouldii - "conveyor belt" species

Glycera americana - burrowing polychaete

X-ray Structure:

Physical - top 4 cm darker (muddier), lots of shell hash

Biological - lots of Pectinaria, few mud burrows, mostly grey
bioturbate texture

Station: 98 6-79

Area: off Newport News (61 ft) Depth of Penetration: 13 cm

Sediment: muddy gravely coarse sand, poorly sorted

Visual Structures:

Physical: very heterogeneous sediment-mud gravel, hydroids, shells, junk and large rock on top

Biological: three large Callianassid burrows, mobile polychaetes

Important Biogenic Agents:

Callianassa atlantica - large burrowing decapod

Nereis succinea - medium burrow dwelling polychaete, ventilates

Oligochaetes - "conveyor belt" species

Pectinaria gouldii - "conveyor belt" species

Mobile polychaetes - Glycera, Orbinids, Arabella, Marphysa

X-ray Structures:

Physical: mud clasts, lots of shells hash, gravel and stones

Biological: few Nereis burrows

Station: 99 6-79

Area: Hampton Roads (55 ft) Depth of Penetration: 39 cm

Sediment: muddy fine sand

Visual Structures:

Physical: shell layer at 10 cm

Biological: maldanid tubes, Ensis directus burrows, long Glycerid burrow to 20 cm. Pockets of fluid mud, cerianthid tube

Important Biogenic Agents:

Ensis directus - burrowing bivalve, bioturbator

Pectinaria gouldii - "conveyor belt" species

Glycera americana - large burrowing polychaete, ventilates

X-ray Structures:

Physical: lot of shell hash 5-15 cm. Darker mud band at 15-20 cm, large rock on surface

Biological: few Pectinaria on surface, three Asychis burrows 14-30 cm, back-filled burrows 15-35 cm

Station: 100 6-79

Area: off Cape Henry (62 ft) Depth of Penetration: 11 cm

Sediment: fine-medium sand

Visual Structures:

Physical: none

Biological: Ensis burrows. Mobile polychaetes

Important Biogenic Agents:

Capitellids - "conveyor belt" species

Mobile polychaete: Glycera, Magelona, Drilonereis

X-ray Structures:

Physical: iron oxide traces, sand layering in cross trough bedding

Biological - large Loimia medusae tube, small worm traces
(Capitellids), Ensis directus traces, few thin Y branched
burrows (probably juvenile glycerid)

Station: 103 4-79

Area: mouth of the York River (25 ft)
Depth of Penetration: 17 cm

Sediment: muddy fine sand, lots of oyster shells

Visual Structures:

Physical - oyster shell layer at 5-12 cm

Biological - lots of Clymenella tubes

Important Biogenic Agents:

Clymenella torquata - "conveyor belt" species, ventilates

Paraprionospio pinnata - small burrowing polychaete

Glycera sp. - large burrowing polychaete, ventilates

X-ray Structures:

Physical - slight mud layering on top

Biological - oyster shells 5-12 cm, with tubes

Station: 104 4-79

Area: near Wolf Trap Depth of Penetration: 57 cm

Sediment: muddy fine sand

Visual Structures:

Physical: none

Biological: hydroid community on top, lots of back-filled burrows, cerianthid tube, lots of Pectinaria on surface, large Cerebratulus leaving traces

Important Biogenic Agents:

Sertularia - hydroid, changes surface topography

Cerebratulus lacteus - bioturbator

Molgula manhattensis - biodepositor

Paraprionospio pinnata - small burrowing worm

Nereis succinea - medium burrowing worm, ventilates

Pectinaria gouldii - "conveyor belt" species

Mobile polychaetes - Glycera, orbinids, etc.

X-ray Structures:

Physical: large mud patches

Biological: back-filled burrow of Glycera or cerianthids, small worms traces 0-5 cm (probably P. pinnata) few Pectinaria on surface

Station: 105 4-79

Area: Eastern Shore off Cape Charles City
Depth of Penetration: 40 cm

Sediment: muddy fine sand

Visual Structures:

Physical: none

Biological: lots of Clymenella tubes, large Cerebratulus burrowing leaving a smooth oval burrow. Glycerid type back-filled burrows and traces. Ophiuroid with commensal polynoid at 7 cm, terebellid tubes, large Yoldia limatula, Asychis tube.

Important Biogenic Agents:

Yoldia limatula - deposit feeding bivalve
Cerebratulus lacteus - bioturbator
Ceriantheopsis americanus - large tube dwelling anemone
Micropholis atra - ventilates
Clymenella torquata - "conveyor belt" species
Capitellidae - "conveyor belt" species
Oligochaetes - "conveyor belt" species
Glycera sp. - large burrowing polychaete, ventilator
Loimia medusa - large tube dwelling polychaete

X-ray Structures:

Physical: none

Biological: Clymenella tubes, large Pectinaria, small worm traces, general grey bioturbate structure from mobile fauna

Appendix F

Description of the biogenic structures of some of the common and important macrobenthic organisms found in the lower Chesapeake Bay

Hydrozoa

Sertularia argentea - dead forms of this species break off during storms and are transported to certain areas where they are buried. They appear as black streaks and dots in our radiographs (ex. Sta. 76).

Anthozoa

Ceriantheopsis americanus - a large tube dwelling anemone which may be up to 2 cm in diameter and may go beyond 60 cm in depth. The tube is made of tough cnidae and persists long after the animal dies allowing for surface material to fill in (ex. Sta. 84). For more details on this organism and its structure see Frey (1970).

Nemertea

Cerebratulus lacteus - large predator (2 cm in diameter and 120 cm long) randomly burrowing as it searches for food. We have found specimens hanging from the bottom of 55 cm cores. As it burrows it leaves a oval opening matching its body. Howard and Frey (1975) found that its foraging traces do not remain open long and its effect is that of general bioturbation. Like other nemerteans, Cerebratulus produces copious amounts of mucous which may have a binding effect on sediment grains (see Station Drawing 93b).

Phoronida

Phoronis sp. - a tentaculate suspension feeder which builds a long thin straight tube of sand from 0-15 cm in length and <1 mm in diameter. May serve to stabilize the sediments at high densities (Ronan 1978).

Mollusca

Busycon carica - large carnivorous gastropod (up to 20 cm) which plows the top several centimeters of sediment leaving furrows behind it. Results of this action is the destruction of physical layering leaving a more homogeneous bioturbated texture. (See Station Drawing 40a).

Appendix F (continued)

Mollusca (continued)

Ensis directus - deep infaunal suspension feeding bivalve. It forms a slightly inclined burrow, which we have found as deep as 20 cm, but is known to occur as deep as 50 cm. (Allen 1954). We have found it to have a halo of lighter colored (oxygenated) sediment around the burrow. It is an extremely fast burrower and probably contributes to the highly bioturbated sands that it is commonly found in. (See Station Drawing 100c).

Mulinia lateralis - shallow infaunal suspension feeding bivalve. We found size ranges <.5 mm to 20 mm. It can occur in large densities (approximately 30,000 per m² at station 87). It is this bivalve which contributes most heavily to the shell hash over most of the bay. Their colonization and die off sequences can be seen as distinct shell layers in several of our cores (see radiograph of Sta. 82).

Polychaeta

Asabellides oculata - a tentaculate deposit feeding ampharetid polychaete which is unusual because it builds a tube horizontally along the sediment surface. Tube has a thin membrane lining with coarse debris. (See Station Drawing 84o).

Asychis elongata - a deep deposit feeding maldanid polychaete which produces a mud reinforced tube. Unlike other members of the maldanid family, Asychis feeds on the surface. Its tube is usually 4-6 mm wide and up to 50 cm long. It often becomes back-filled when abandoned. (See Station Drawing 88v).

Clymenella torquata - a deep deposit feeding maldanid polychaete which builds a thin (2-3 mm) sand tube to depths of 15-20 cm. Because of its foraging habit of feeding at the bottom of its tube (20 cm) and defecating on the surface, Rhoads (1974) called it a "conveyor belt" species. This species is very common in muddy sands and sand of the bay and is responsible for recycling old buried materials. It also irrigates its tube often causing metals to form insoluble oxides around it. In some of our radiographs faint white lines can be seen around its burrows due to these metal oxides. In our visual observation the loadings appear as an orange rust appearance. (See Radiographs 89 and 103).

Appendix F (continued)

Polychaeta (continued)

Diopatra cuprea - tubiculous carnivore which decorates the top third of its tube with bits of shell, hydroids, pebbles and other coarse material. Not significant in our study but may be locally abundant (Wass 1972). (See Sta. drawing 96 and radiograph 96).

Glycera dibranchiata and G. americana - infauna omnivores which produce inclining vertical burrows of 4-6 mm and up to 50 cm in depth. These commonly become backfilled. A halo of oxidized sediment surrounds these burrow. See Howard and Frey 1975 for more details on burrow morphology. (See Sta. drawing 85g).

Heteromastus filiformis - small infaunal subsurface deposit feeding capitellid polychaete. It builds small (<.5 mm diameter 30 cm deep) multibranched feeding burrows with a vertical defecation tube so it is another "conveyor belt" species. A more complete description of its sediment reworking can be found in Cadée (1979). (See Station Drawing 80i).

Loimia medusa - tentaculate deposit feeding terebellid polychaete. It builds a mud reinforced U shaped tube. They are often back-filled. It produce fecal mounds producing a micro-topography. (See Sta. drawing 87p).

Mediomastus ambiseta - small infaunal subsurface deposit feeding capitellid polychaete. Like Heteromastus it is a "conveyor belt" species but is confined to the top 5 cm. (See Sta. drawing 95o).

Nereis succinea - infaunal omnivore. It builds a complex burrow (up to 6 mm in diameter) with several openings to the surface as well as blind feeding branches. Fairly common to 15 cm in depth occasionally large adults to 50 cm. By ventilating its burrow it produces a halo of oxidized sediment in the anaerobic zone. This organism was designated to the most important species in the bioturbation of a New Hampshire estuary (Winston and Anderson 1971).

Paraprionospio pinnata - infaunal surface deposit feeding spionid polychaete. It forms a temporary burrow of .5 mm in diameter and down to 15 cm in depth although usually does not exceed 7 cm in depth. The burrow is very meandering with a mostly vertical component. This is our most common small burrow. (See Radiograph 84).

Appendix F (continued)

Polychaeta (continued)

Pectinaria gouldii - shallow infaunal deposit feeding polychaete (size range 2-68 mm). It produces a well constructed tube of sand grains, resembling an ice cream cone. It buries until the tip of its tube is at the sediment-water interface, feeding at the bottom and defecating on the surface ("conveyor belt" species). A lot of work on the biology and sediment reworking by this animal has been done (Gordon 1966, Rhoads 1967, Whitlatch 1974). Juveniles were extremely abundant in almost all of our cores in the spring of 1979. (See Sta. drawing 81o).

Polydora ligni - a small suspension feeding spionid polychaete which builds silty U-shaped tubes. Galstoff (1964) reports its presence in Delaware Bay was responsible for the burial of oyster beds due to increase sedimentation rate caused by the suspension feeding biodeposition activities of this spionid polychaete.

Pseudoeurythoe ambigua - deep infaunal sub-surface deposit feeding polychaete. No burrow associated with this organism, a random burrower. It is one of the few organisms which occurs below 10 cm in muddy sediments without a direct connection to the surface. Its' respiratory physiology would be an interesting study.

Sabellaria vulgaris - suspension feeding polychaete which builds a very hard sand tube often intertwining with other Sabellaria vulgaris tubes to form "mini reefs". Assorted epifauna which could not survive the soft bottom are associated with the Sabellaria structures (hydroids, Anadara, Molgula caprellids, etc.).

Scoloplos sp. - a sub-surface deposit feeding orbinid which has no permanent structures associated to it. Its' random burrowing in search for food produces the homogeneous bioturbate texture seen in many of our muddy sand and sand cores.

Spiochaetopterus oculatus - a suspension feeding polychaete which builds long, thin, straight tubes of clear chitin. Only abandoned tubes transported from other areas (Zostera beds) were found.

Spiophanes bombyx - tentaculate surface deposit feeding polychaete which builds a loosely constructed sand tube approximately 4 cm long and 2-3 mm wide. (See Sta. Drawing 90aa)

Appendix F (continued)

Polychaeta (continued)

Streblospio benedicti - small surface deposit feeding spionid which produces flimsy mucous tubes which project a few mm. from the surface. Frey (1970) tells how these organisms may be used as current vanes. (See Sta. drawing 86e).

Oligochaeta

Oligochaete sp. - small subsurface deposit feeding annelid. Another "conveyor belt" species.

Amphipoda

Ampelisca abdita - tube dwelling surface deposit feeder. It has been found to form tense tube mats ($\sim 68,000/\text{m}^2$) which stabilizes surface and may increase the sedimentation of fine material (Harrison and Lynch 1970). (See radiograph of Sta. 78 and station drawings of 30, 76 and 78).

Decapoda

Callinassa atlantica - a deposit feeding shrimp. It builds large (2 cm diameter) burrows with complex branching and several openings to the surface. Both Shinn (1968) and Howard & Frey (1975) describe the burrows in greater detail. (See Sta. drawing 98).

Echinodermata

Micropholis atra - a deposit feeding ophiuroid found 5-12 cm deep. Usually 2 to 3 arms extend down anchoring the animal while the remaining arms reach the surface for feeding. A cavity surrounds the animal which it ventilates causing a halo of oxygenated sediments around it. (See Sta. drawing 105).

Thyone briareus - large deposit feeding holothurians. Moyers (1977) discusses the effect on sediment properties produced by the bioturbation of a deposit feeding sea cucumber. (See Sta. drawing 94).