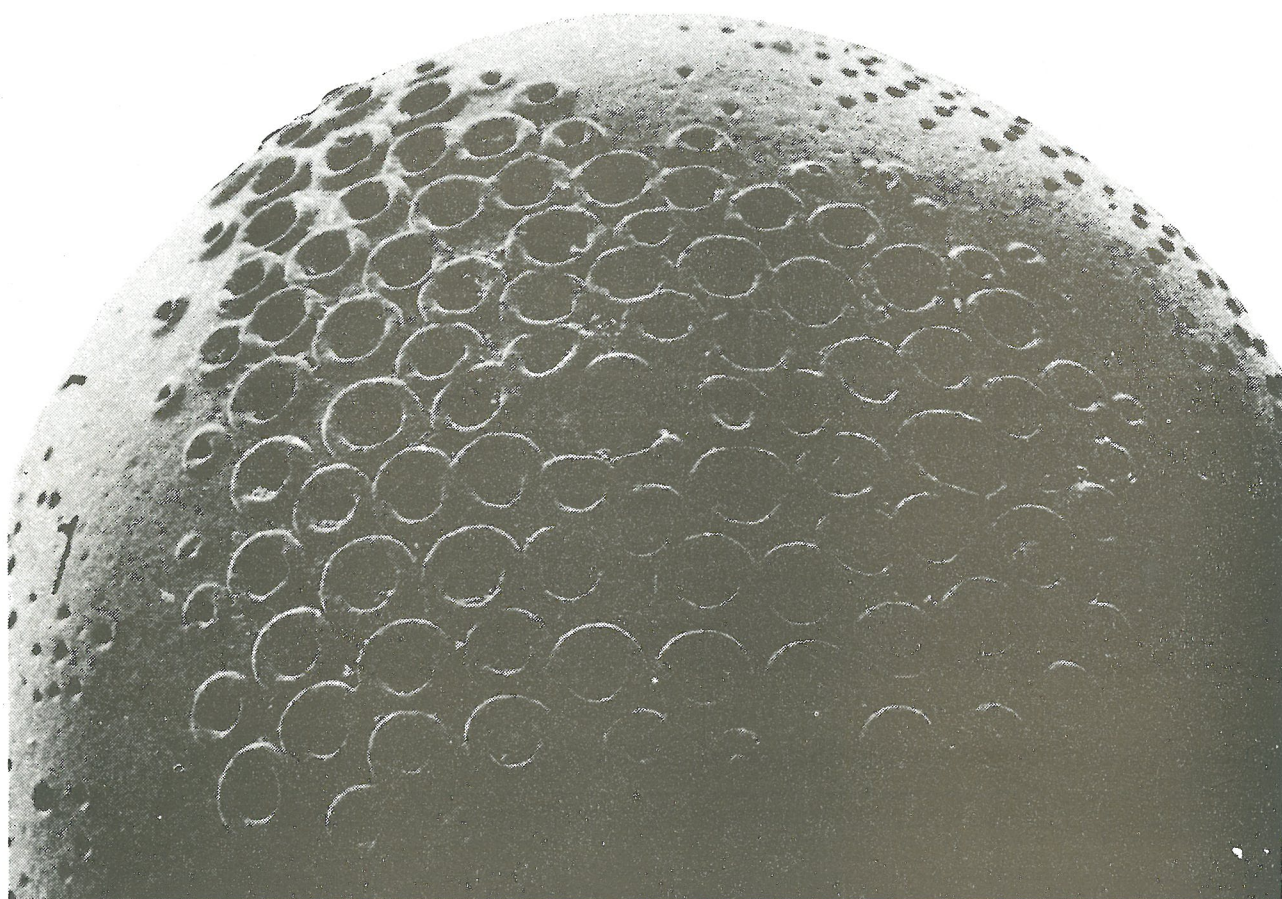


**DISTRIBUTION PATTERNS AND TAXONOMY  
OF BENTHIC FORAMINIFERA IN THE  
LIZARD ISLAND REEF COMPLEX,  
NORTHERN GREAT BARRIER REEF, AUSTRALIA**



4-2

**ANNEXES**

**UNIVERSITE DE LIEGE - C.A.P.S. - LABORATOIRE DE BIOSEDIMENTOLOGIE**

**THESE DE DOCTORAT  
EN SCIENCES GEOLOGIQUES ET MINERALOGIQUES, 1987**

**Jan BACCAERT**

A N N E X 2

Procentual cumulative diagrams


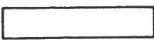



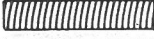

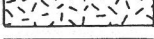





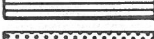
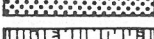


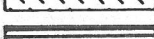


LEGEND


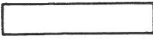


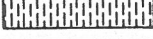

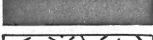
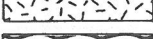




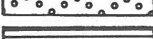

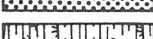
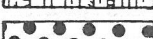
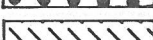


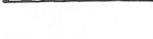
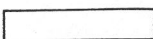

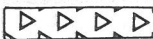




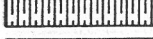
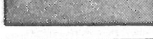

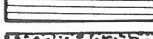
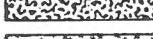
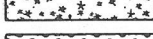




See loose page included below. On this legend page the foraminiferal taxa are arranged in the same order, from bottom to top, as they occur in the diagrams. This legend page may be taken out and can be directly compared with the diagrams.

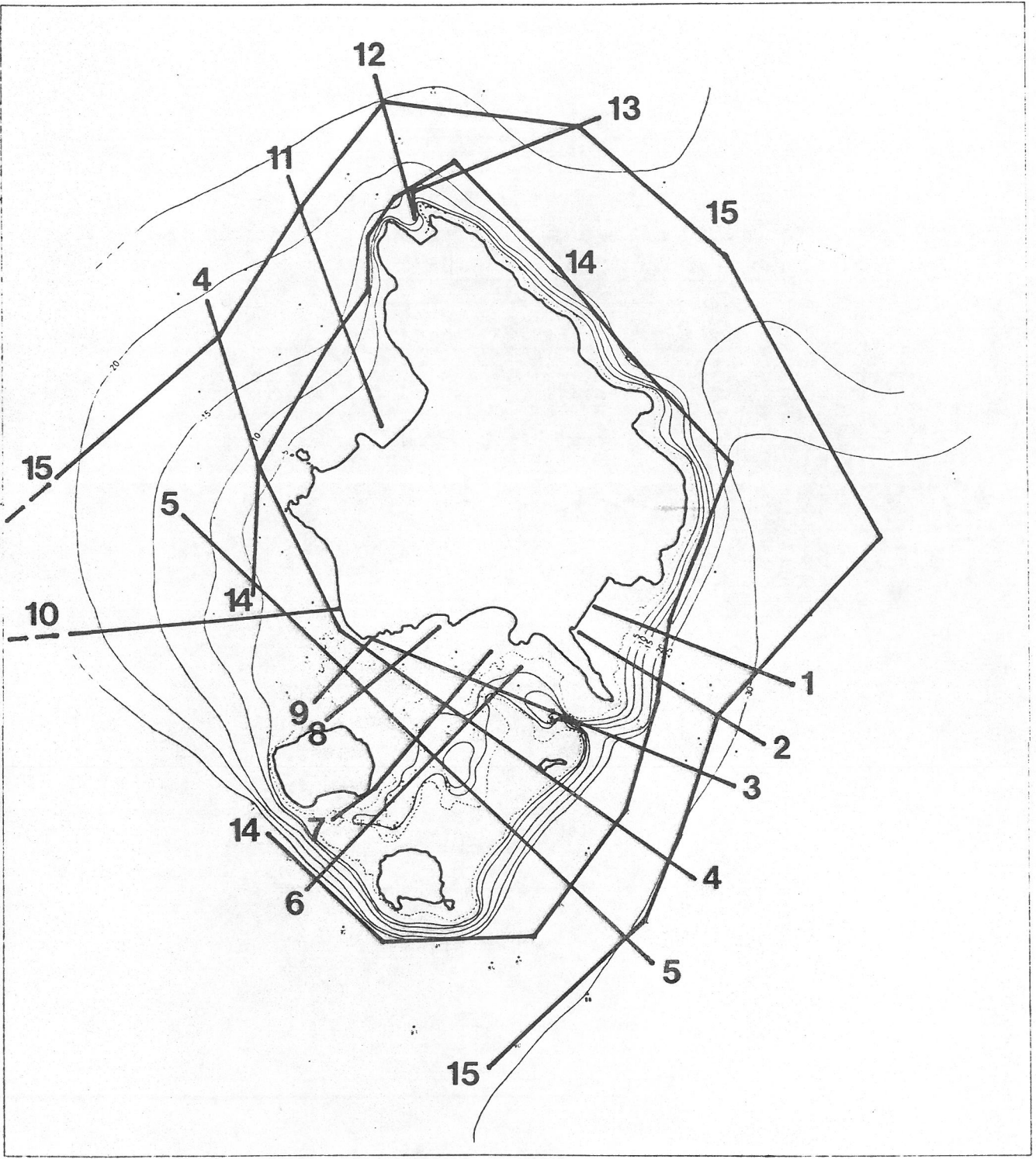
The "fragmentation curves", showing the procentual cumulative percentage variances of the groups identified forams (DET FOR), identified FRAGMENTS and unidentified smaller fragments (INDET), are displayed below the respective cumulative diagrams of foraminiferal taxa.

In one case (traverse 5), a third diagram showing granulometry variances is to be found below the fragmentation curve.

A map with the localisation of traverses can be found on next page.

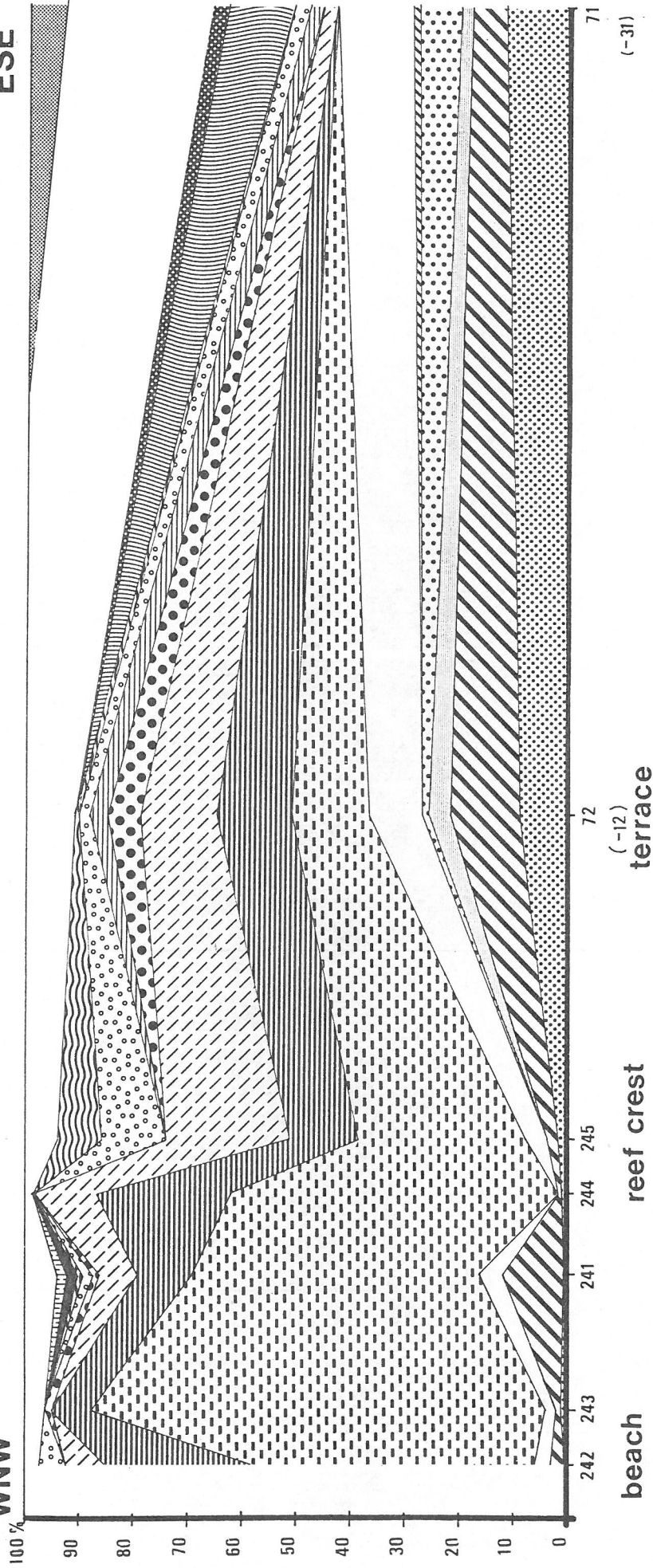
	(PLANCTON)	
	OTHER	
	OPERCULINA	
	CIBICIDES	
	SPIRILLINA	
	REUSSELLA	
	ROSALINA	
	ROSALINA BRADYI	
	GLABRATHELLA	
ROTALINA	BOLIVINA GR.	
	EPONIDES	
	DISCORBIDAE	
	CYMBALOPORETTA	
	AMMONIA	
	NONION GR.	
	HAYNESINA	
	ELPHIDIUM	
	AMPHISTEGINA	
	BACULOGYPSINA	
	CALCARINA (+PARRELLINA)	

	(PLANCTON)	
	OTHER	
	OPERCULINA	
	CIBICIDES	
	SPIRILLINA	
	REUSSELLA	
	ROSALINA	
	ROSALINA BRADYI	
	GLABRATILLA	
RODALINA	BOLIVINA GR.	
	EPONIDES	
	DISCORBIDAE	
	CYMBALOPORETTA	
	AMMONIA	
	NONION GR.	
	HAYNESINA	
	ELPHIDIUM	
	AMPHISTEGINA	
	BACULOGYPSINA	
	CALCARINA (+PARRELLINA)	
	OTHER	
	ALVEOLINELLA	
	MASSILINA	
	PLANISPIRINELLA EXIGUA	
	HAUERINA	
	HAUERINA - PACIFICA	
MILIOLINA	TRILOCULINA	
	MILIOLIDAE	
	TROPICALIS	
	GRANULOCOSTATA	
	QUINQUECARINATA	
	MONTYI	
	POEYANA CARINATA	
	OBLONGA GR.	
	NEOSTRIATULA	
	SORITIDAE	
TEXTULARIINA		



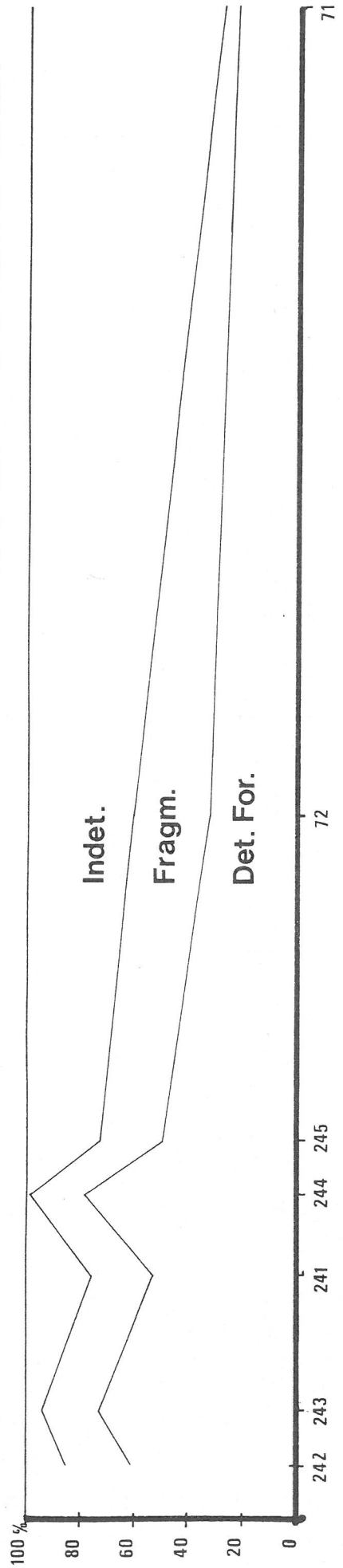
Traverse 1  
WNW

ESE



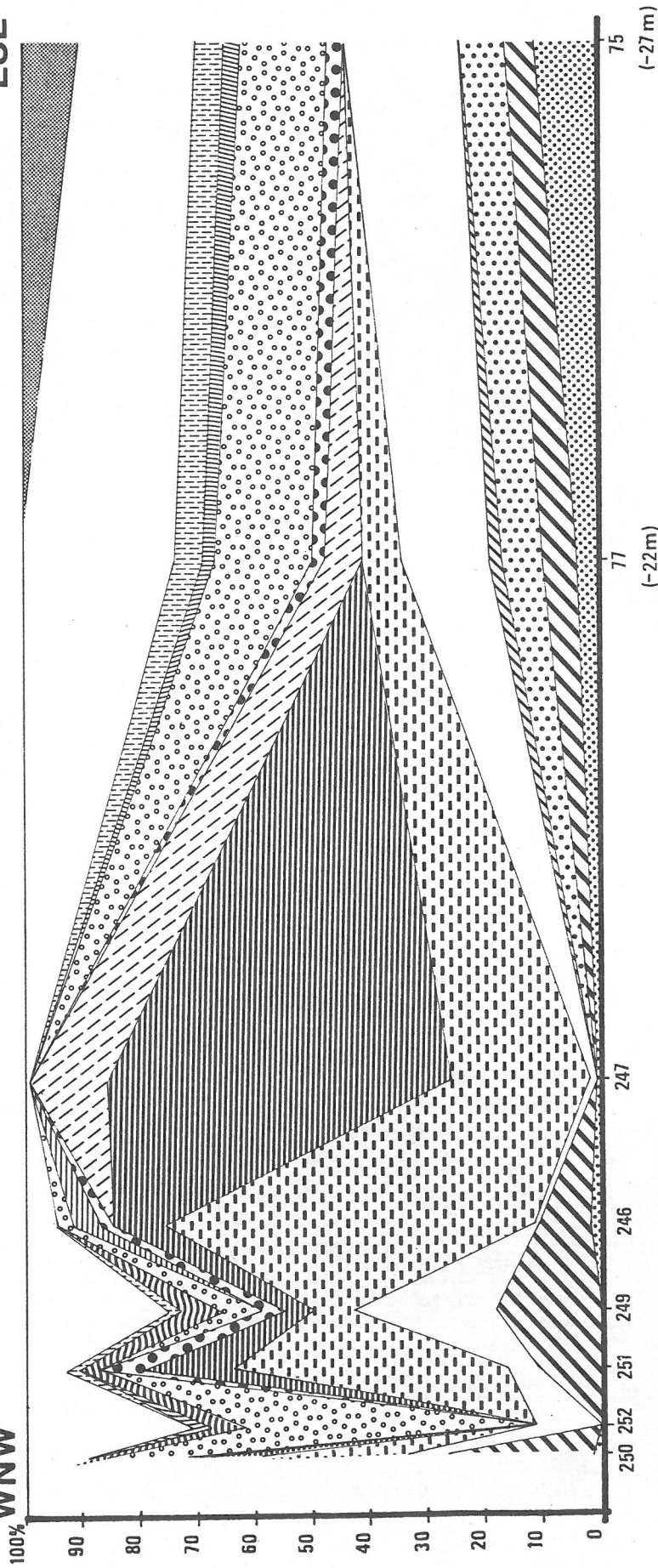
COCONUT FRINGING REEF FLAT

EASTERN PERIREEFAL AREA



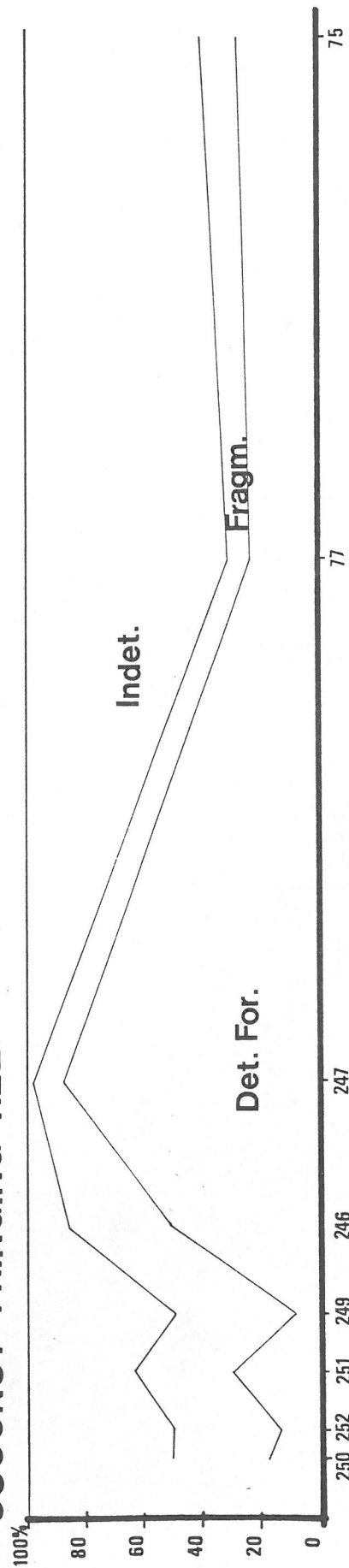
Traverse 2  
WNW

ESE

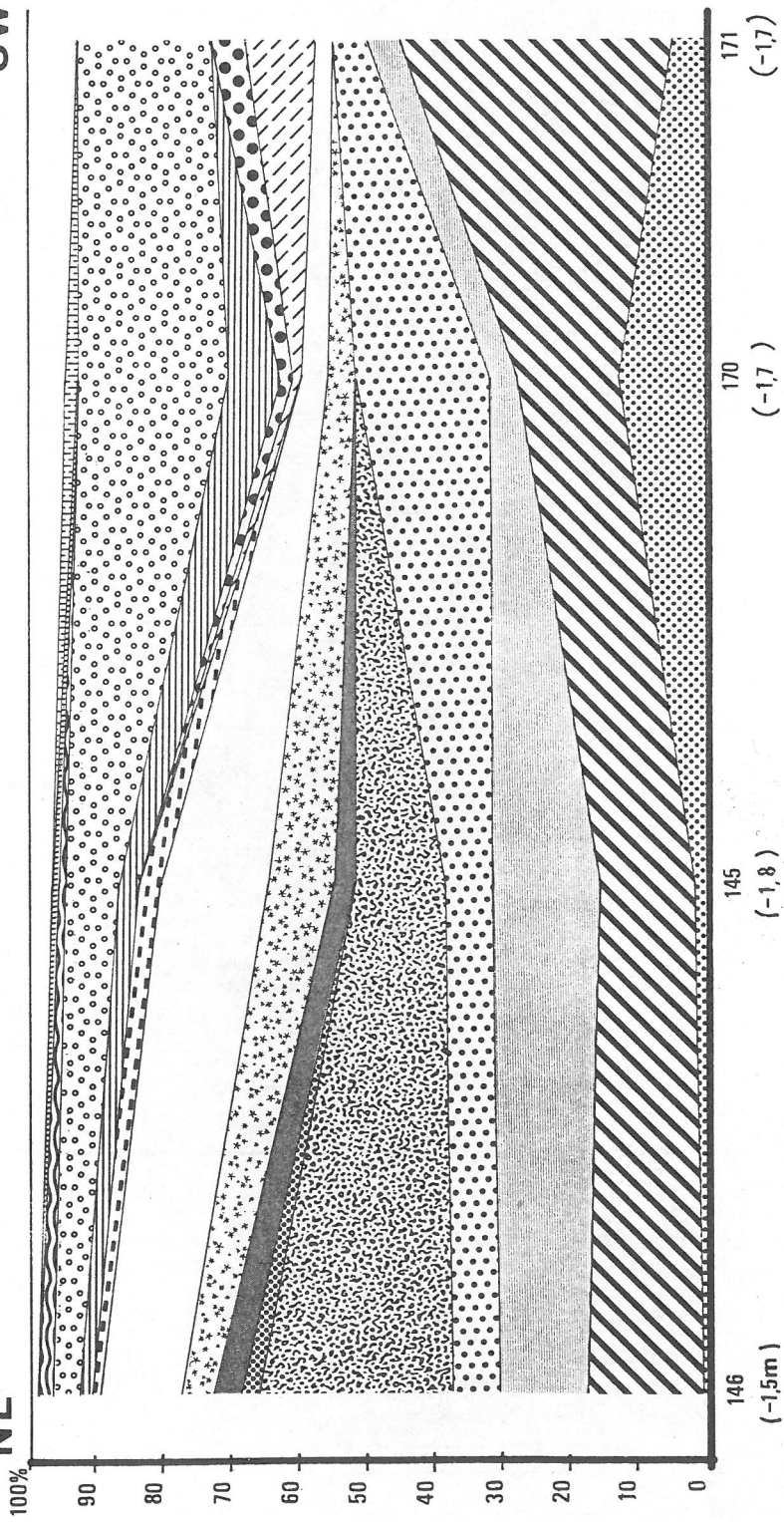


beach reef crest

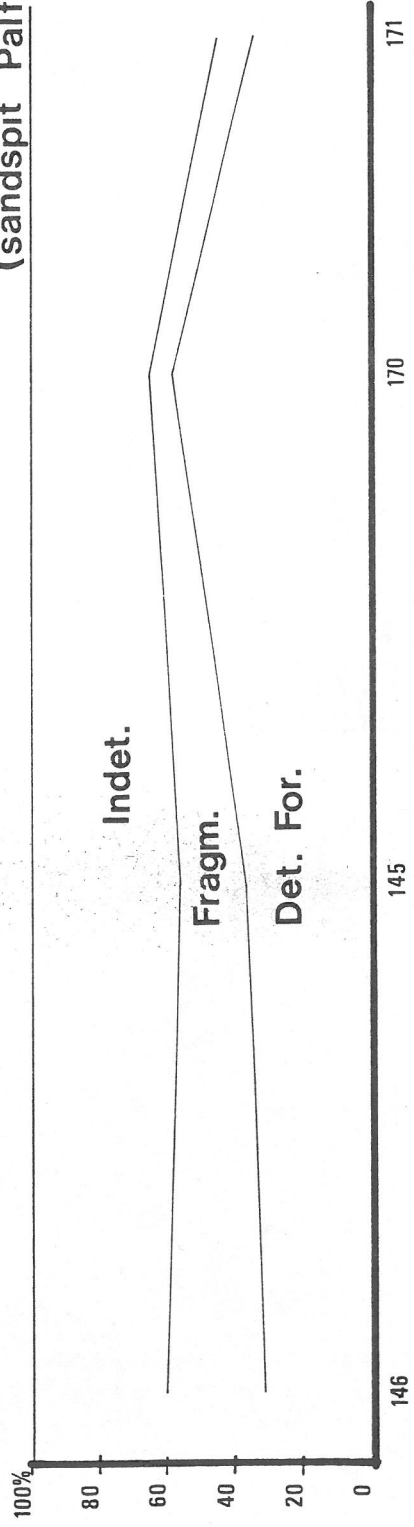
COCONUT FRINGING REEF FLAT EASTERN PERIREEFAL AREA



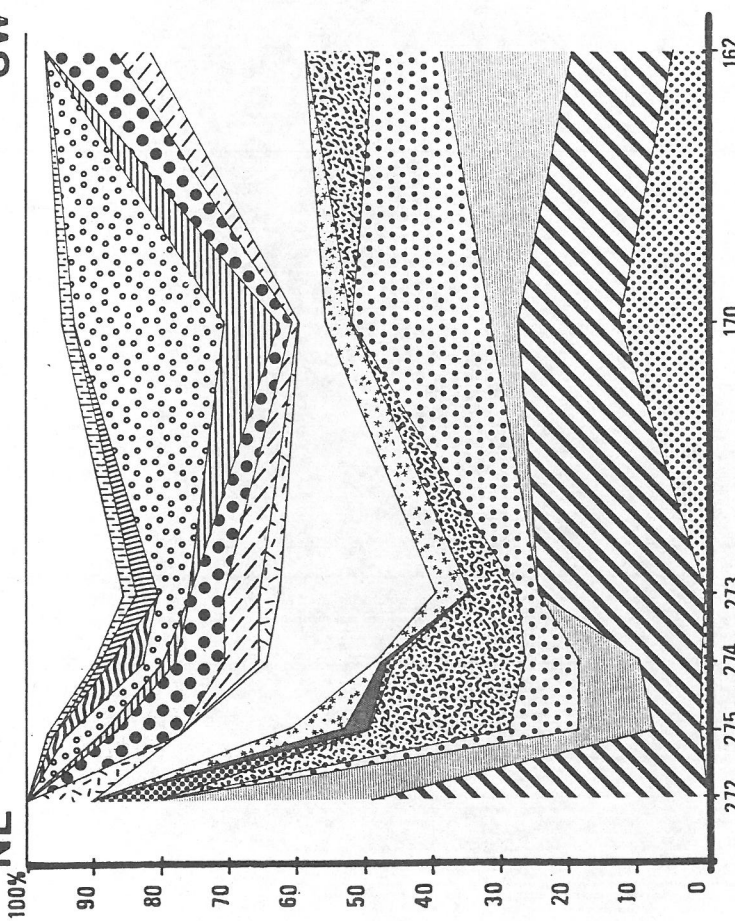
Traverse 8  
NE SW



SANDY SHOAL (Passage S) INTERNAL PLATFORM near (sandspit Palfrey)



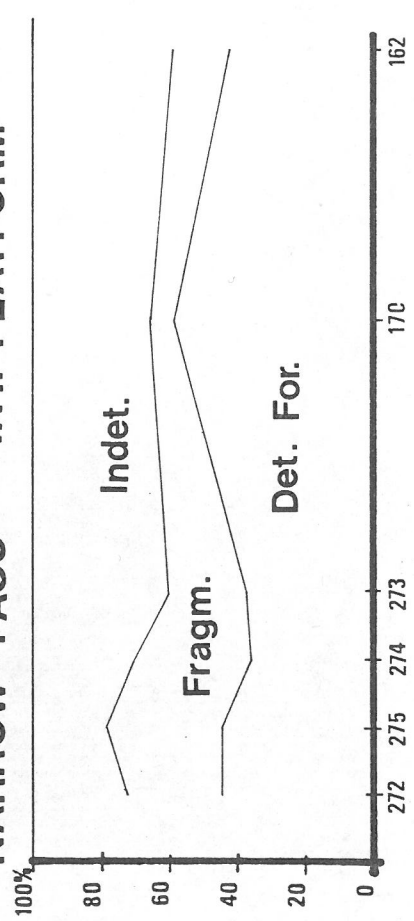
Traverse 9  
NE SW



(N of sandspit Palfrey)

(-3m) (-2.5) (-1.2) (-1.7) (-2.2)

(beach) NARROW PASS INT. PLATFORM



Indet.

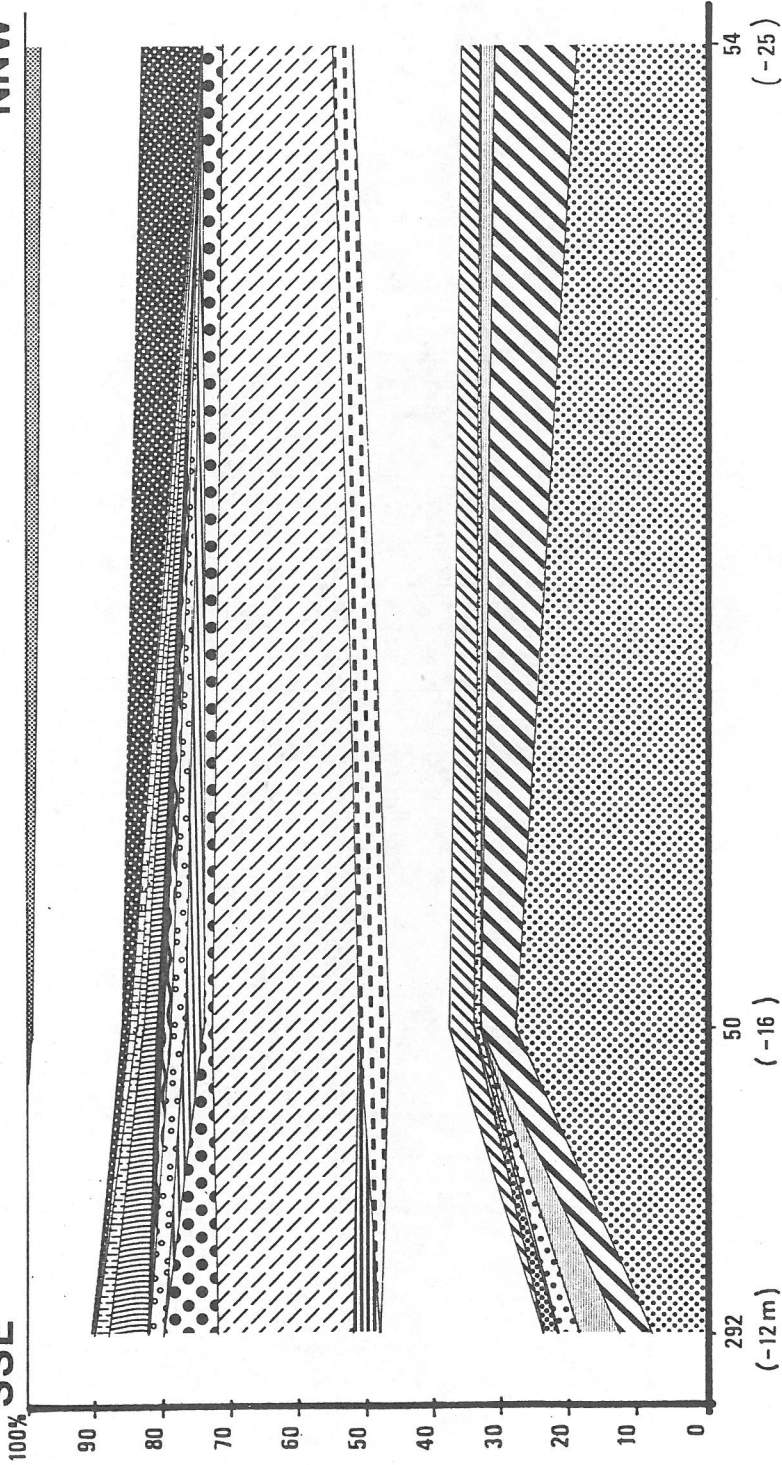
Fragm.

Det. For.

Traverse 12

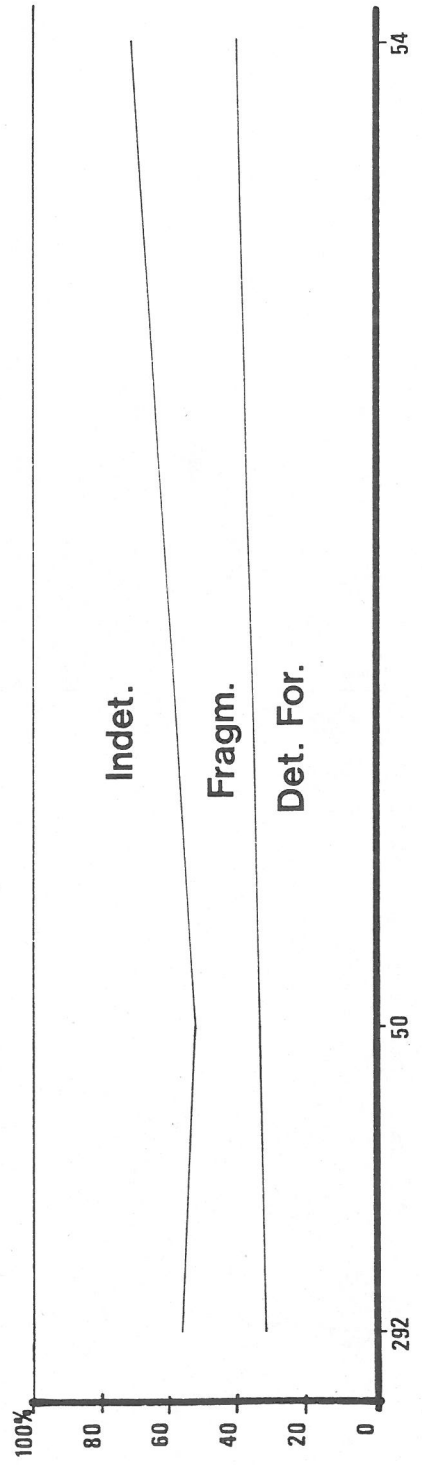
SSE

NNW



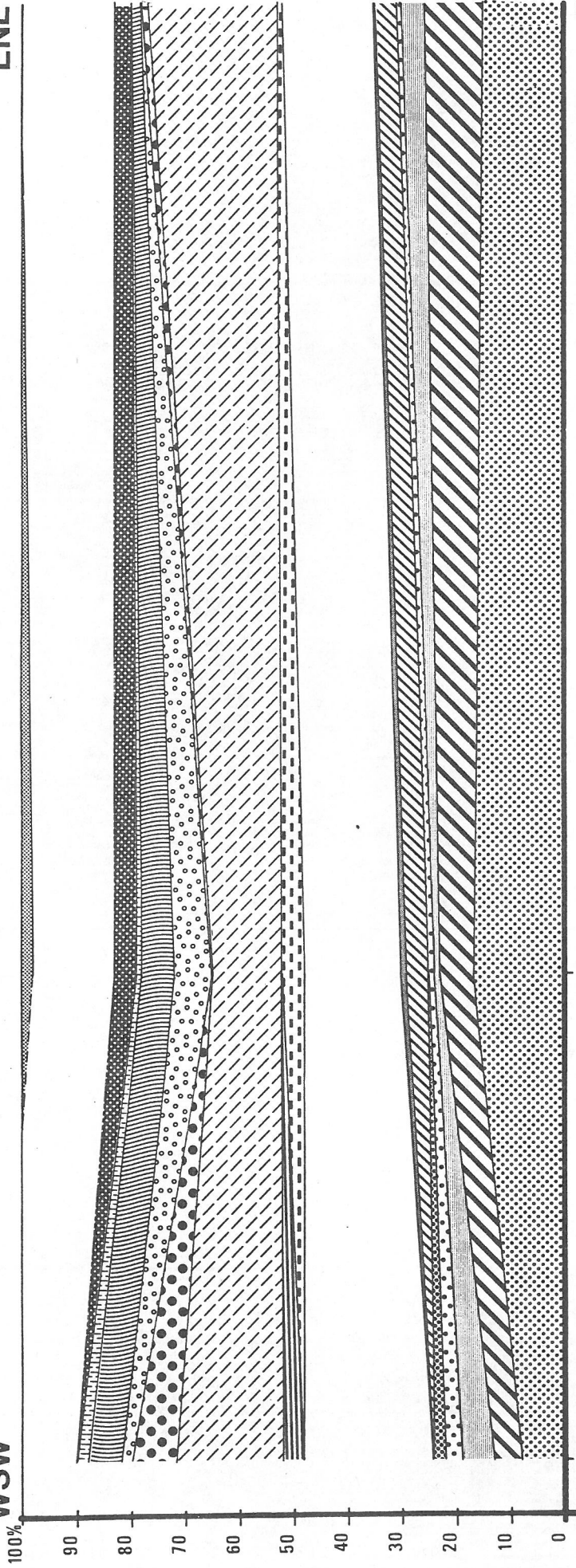
NORTH POINT

NORTHERN PERIREEFAL AREA



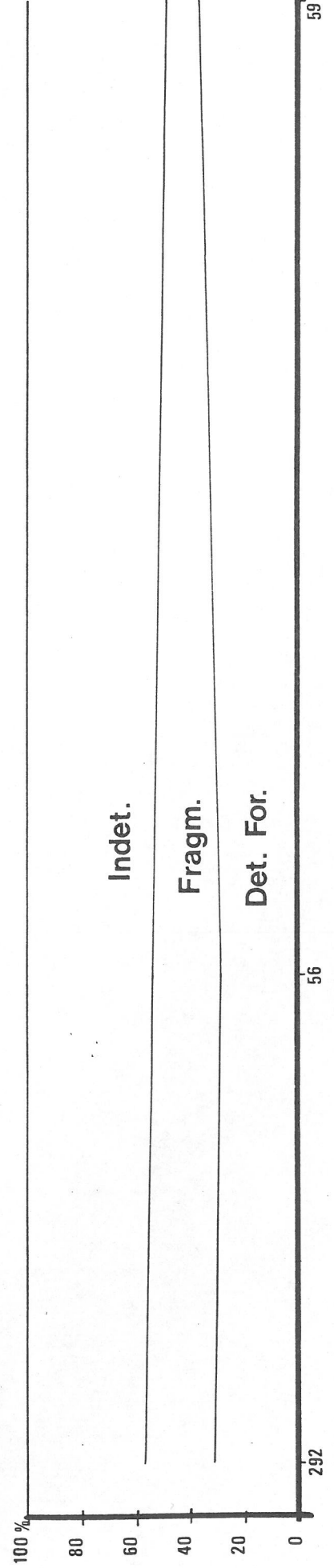
Traverse 13  
WSW

ENE

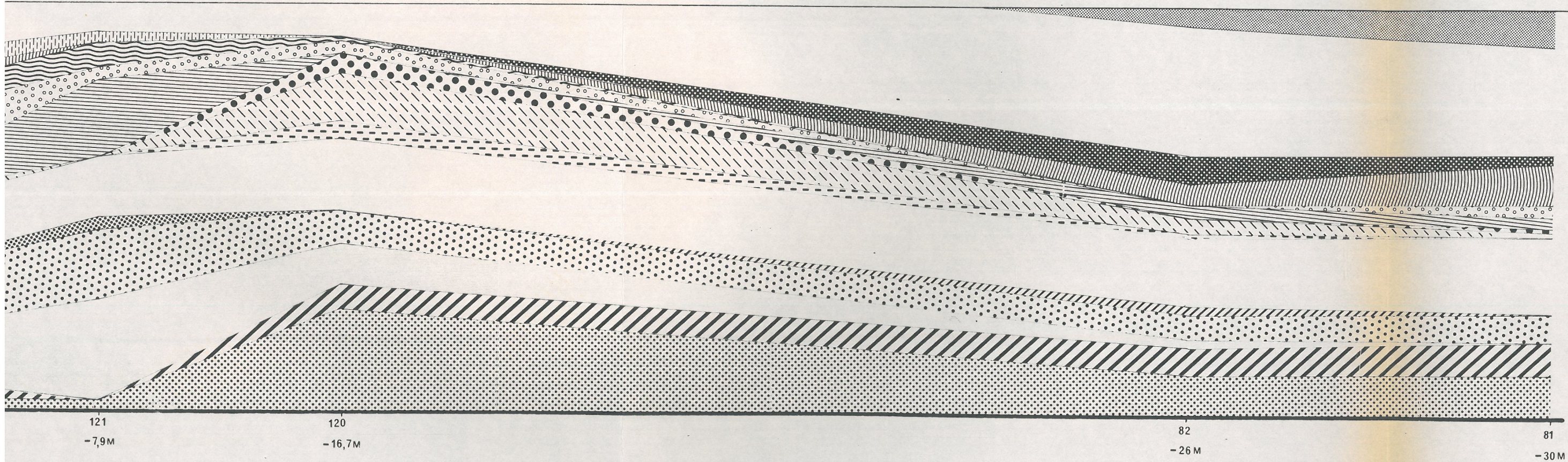


NORTH POINT

(NORTH) EASTERN PERIREEFAL AREA



ESE



121  
-7.9M

120  
-16.7M

82  
-26M

81  
-30M

LAGOON - L. ENTRANCE

EASTERN PERIREEFAL AREA

Indet.

Fragm.

Det. For.

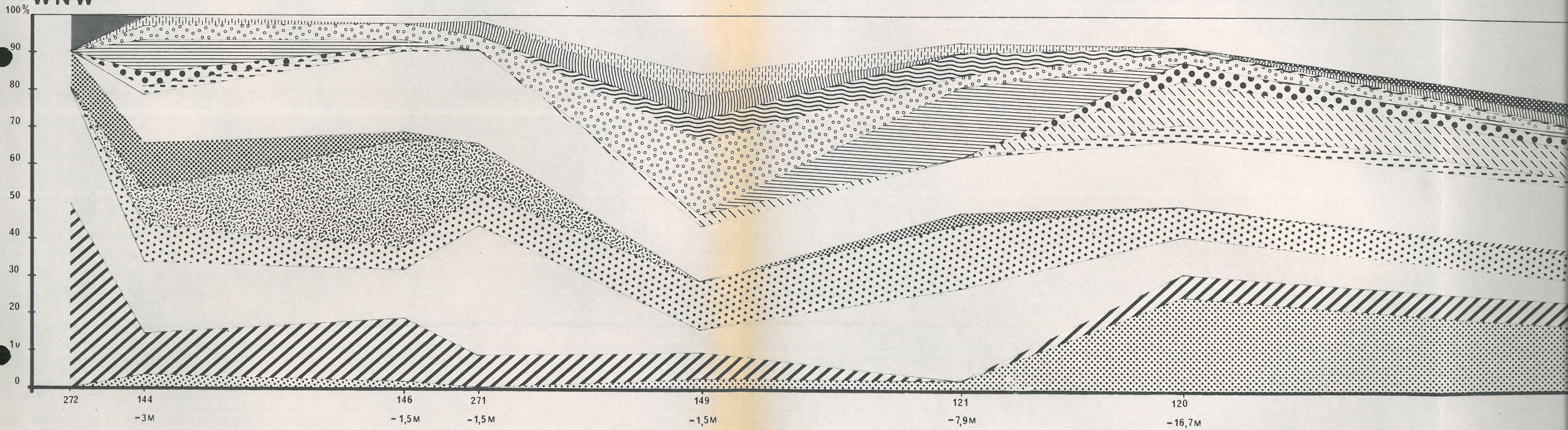
121

120

82

81

Traverse 3  
WNW



BEACH

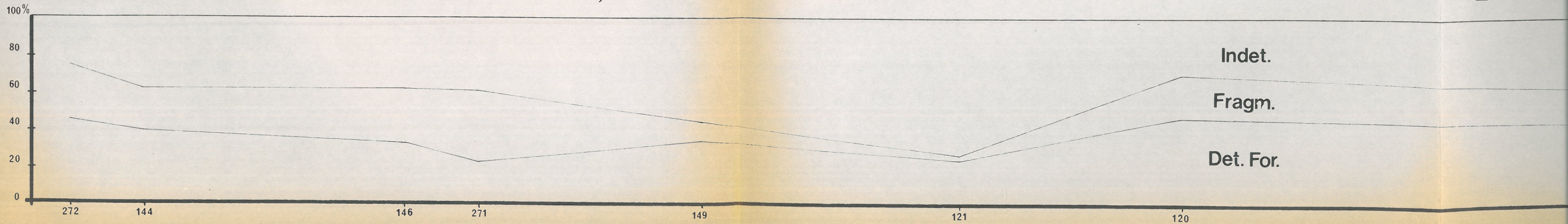
SANDY

SHOAL

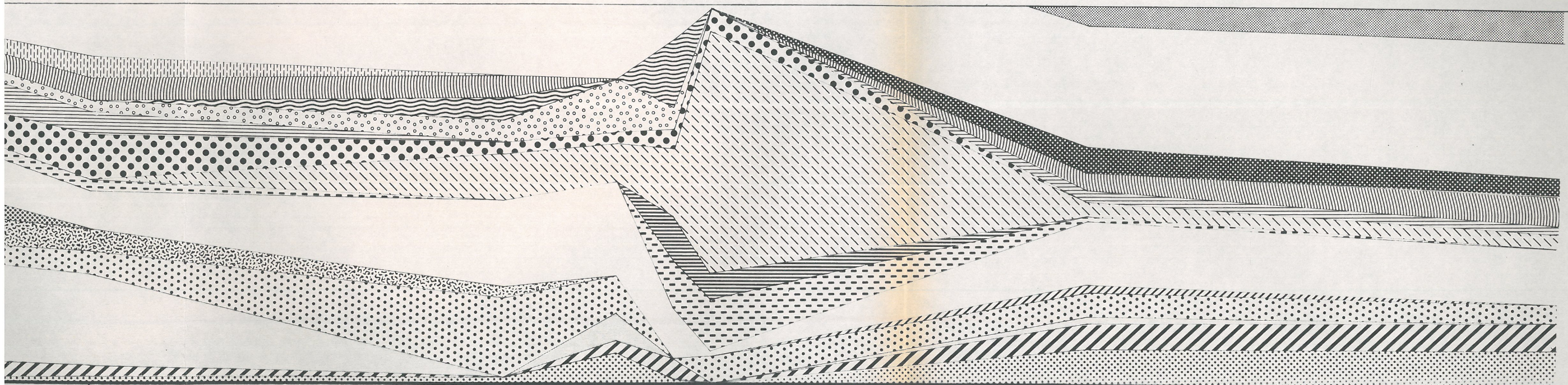
→ id, recolonised front

LAGOON - L. ENTRANCE

EASTER



SE



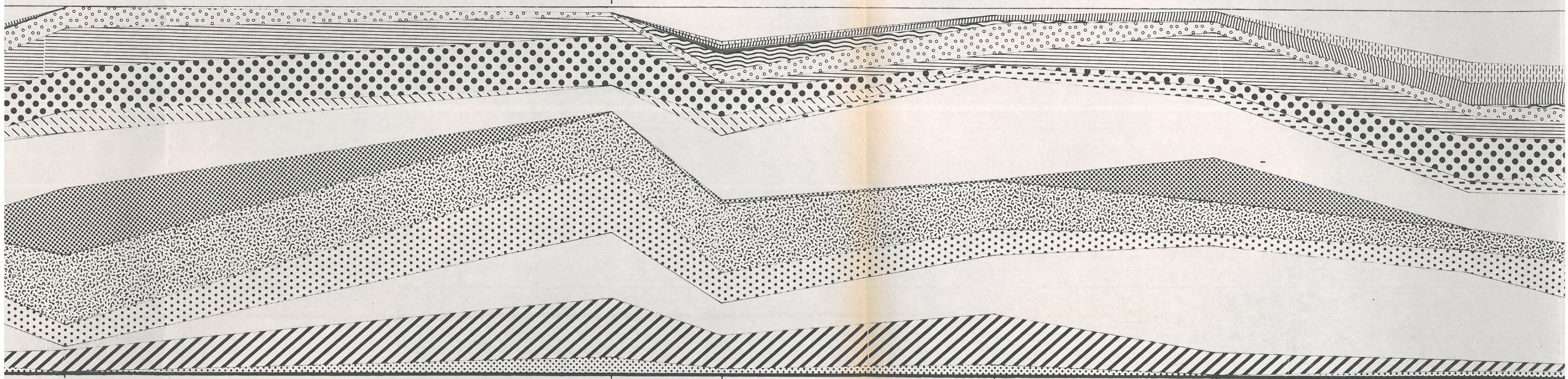
122 -6,4 M 253 -1M 254 int. 255 int. 256 int. 82 -26M 84 -31M

BACKREEF - WINDWARD BARRIER EASTERN PERIREEFAL AREA

N

122 253 254 255 256 82 84

SSE | NW



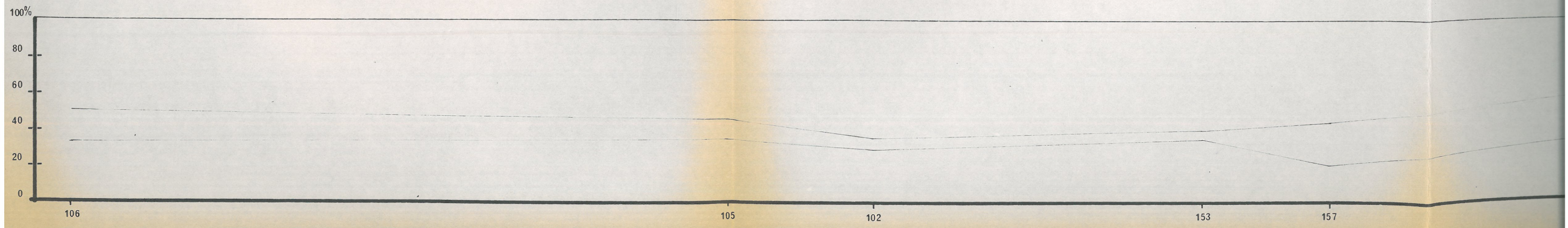
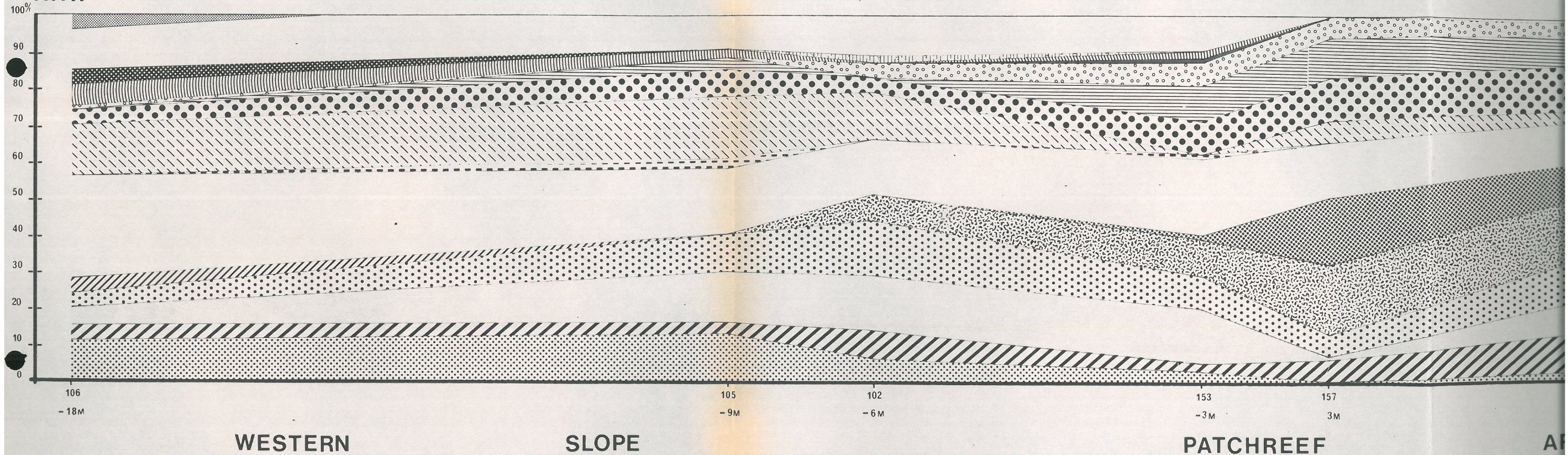
157 3M 277 -2M 274 -2,5M 145 -1,8M 151 -3,7M 122 -6,4M

REEF AREA NARROW PASSAGE PASSAGE S of SANDY SHOAL LAGOON

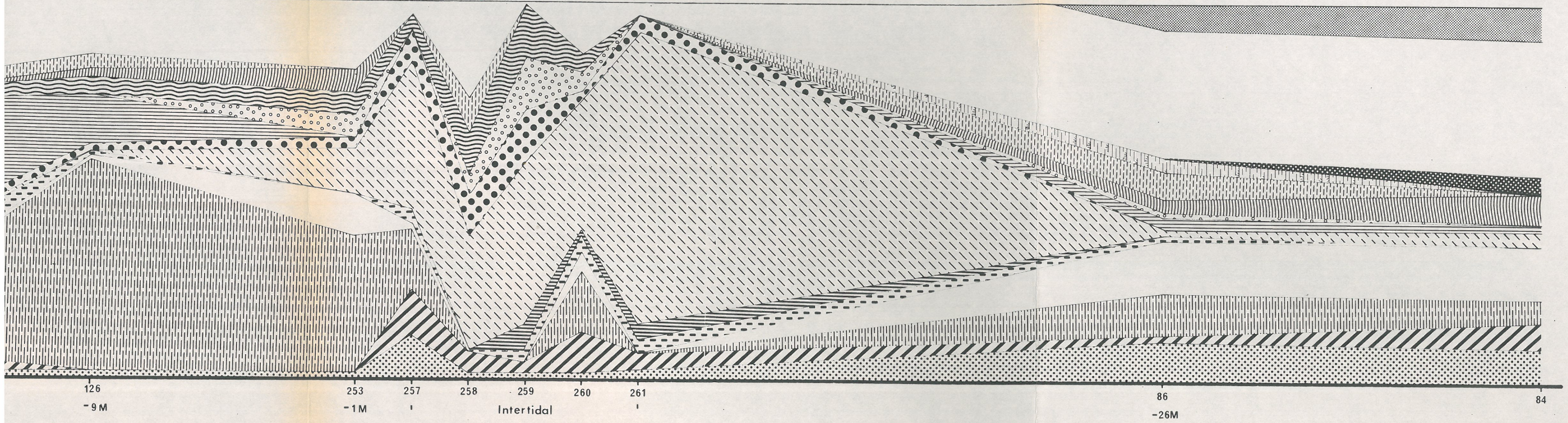
Indet.  
Fragm.  
Det. For.

157 277 274 145 151 122

Traverse 4  
NNW



SE



126 -9M      253 -1M      Intertidal      257      258      259      260      261      86 -26M      84

**WINDWARD BARRIER**

**EASTERN PERIREEFAL AREA**

Indet.  
Fragm.  
Det. For.

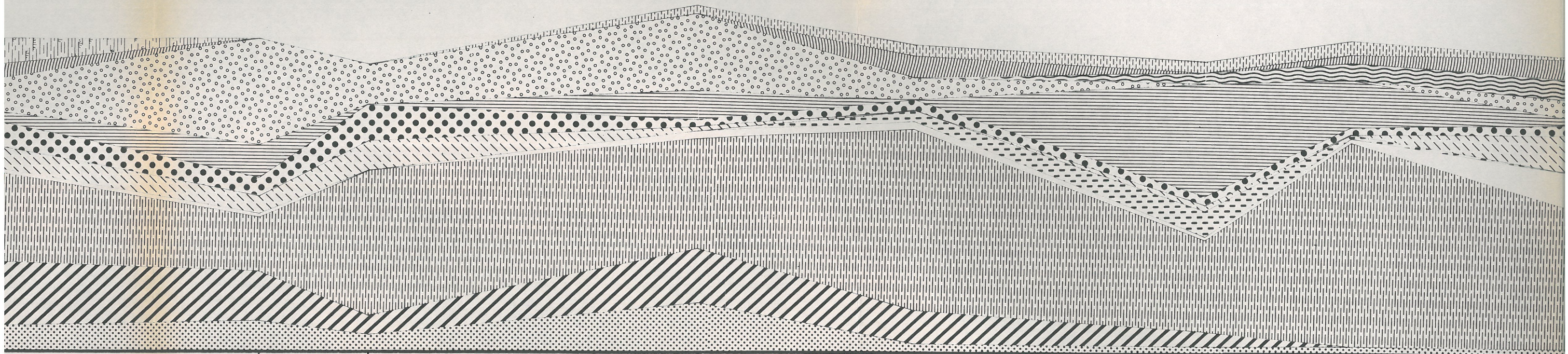
253      257      258      259      260      261      86      84

1000-500µm  
500-125µm

>1000µm

<125µm

L9 (126)      WZ187 (257)      LIZ185 (61)      L25      86      81 (84)

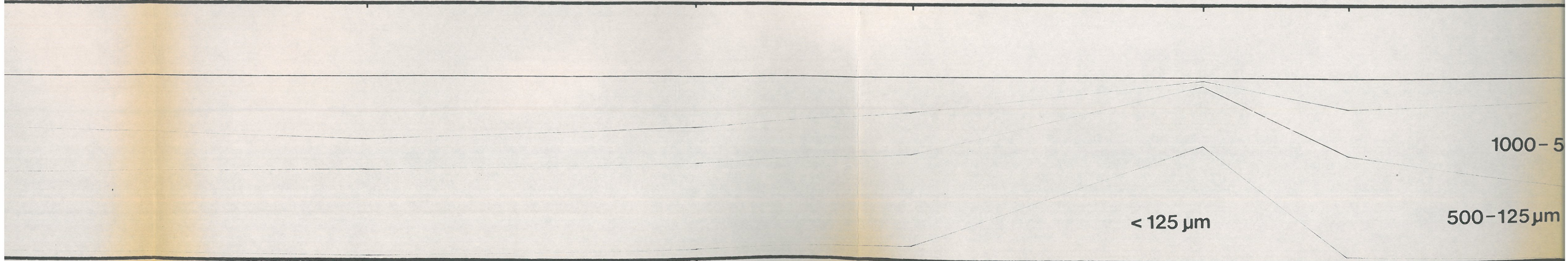
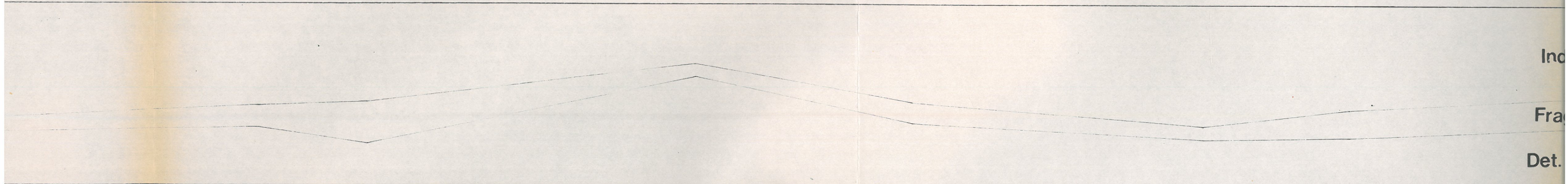


160	161	170	139	124	126
-2,5M	-3,5M	-1,7M	-2,1M	-8,2M	-9M

PATCHREEF AREA

INTERNAL PLATFORM

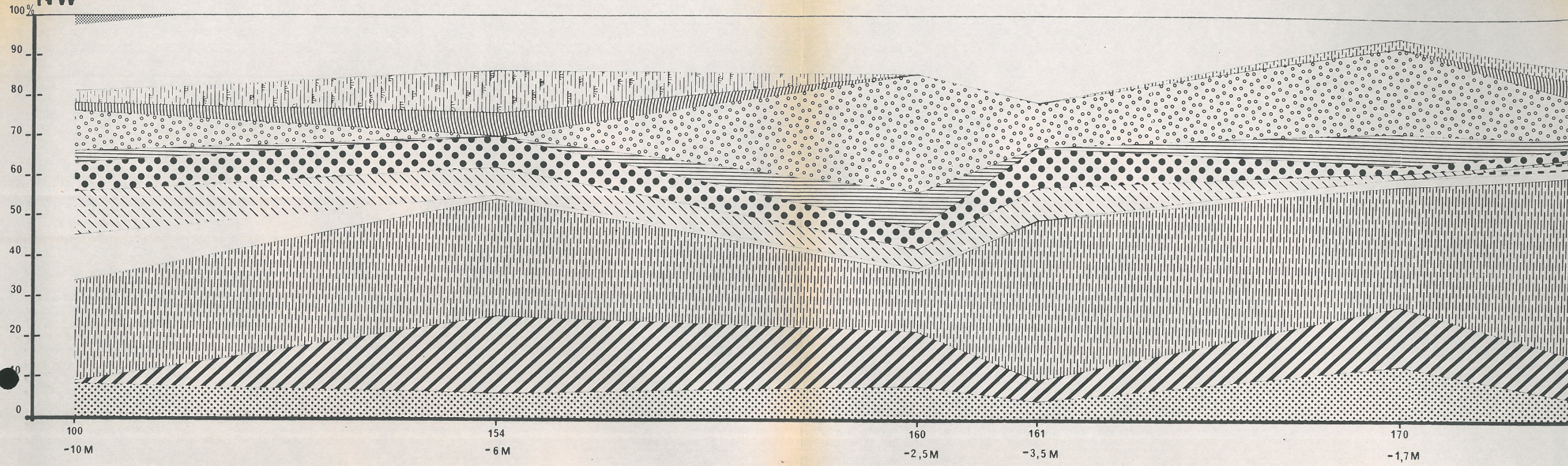
LAGOON



L16	L19	L14	L7	L9
(161)	(170)	(139)	(124)	(126)

Traverse 5

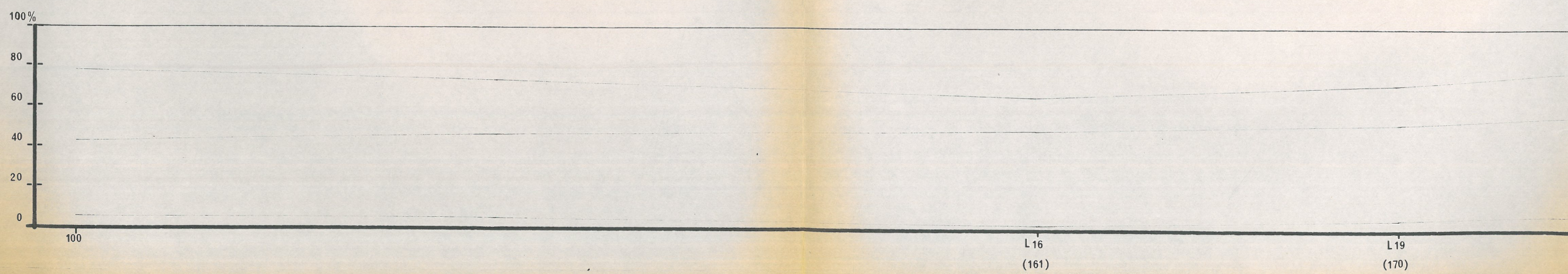
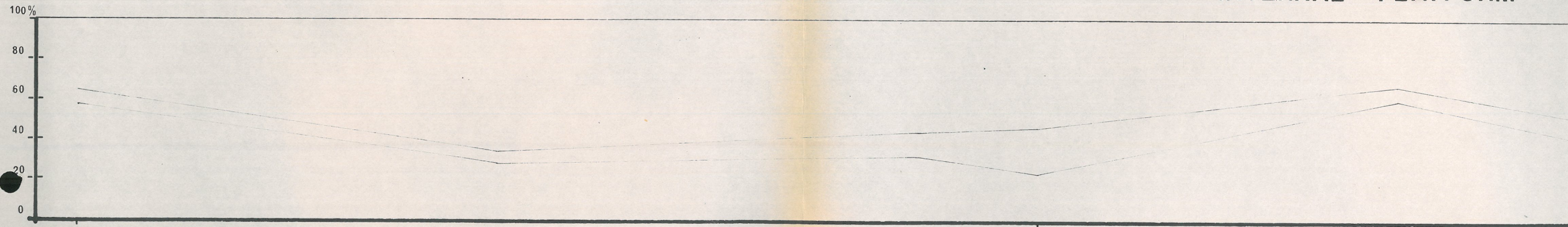
NW



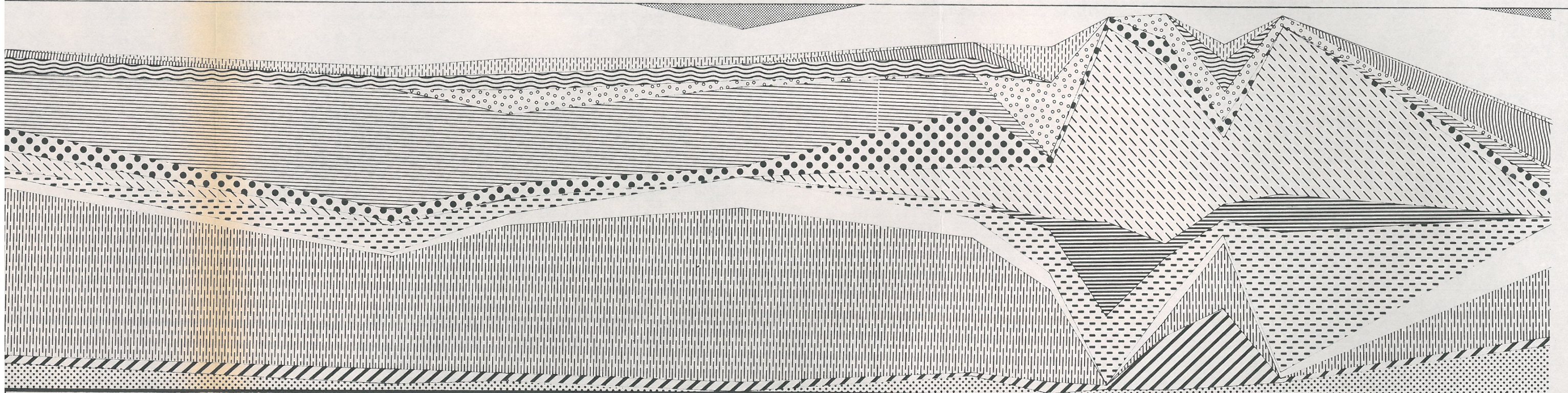
WESTERN SLOPE

PATCHREEF AREA

INTERNAL PLATFORM



SW



23 124 136 134 129 262 263 264 265 266 94

G O O N

SOUTHERN BARRIER SOUTHERN (SW) PERIREEFAL AREA



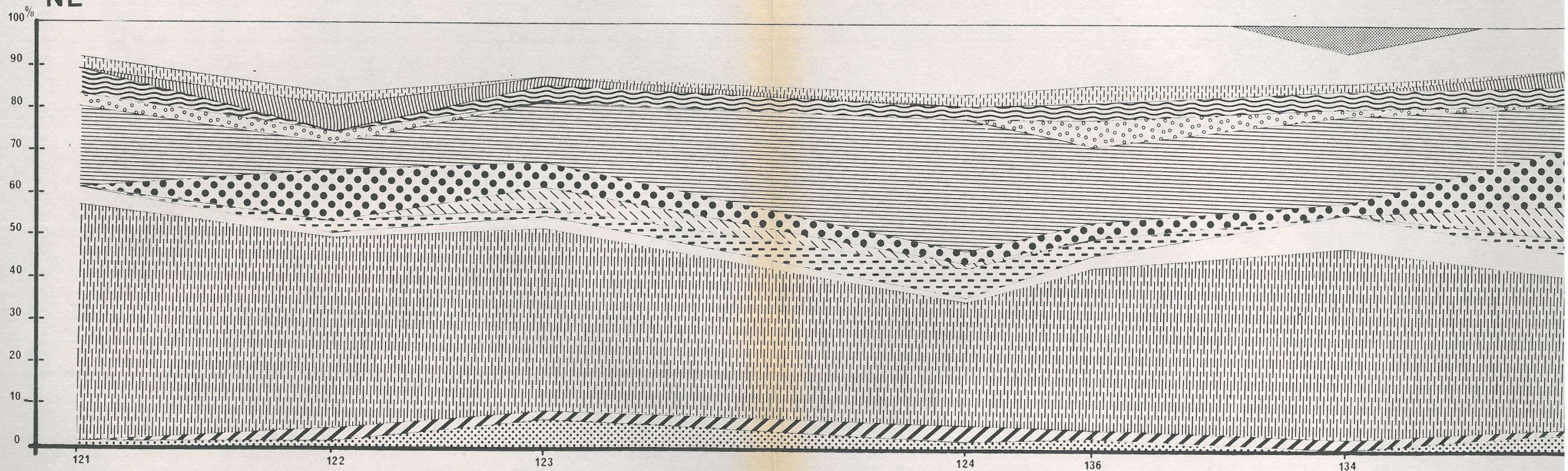
Indet.

Fragm.

Det. For.

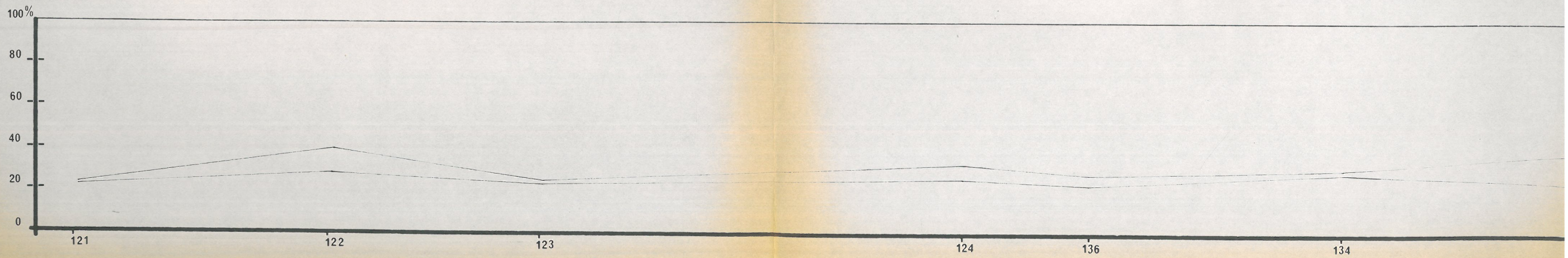
23 124 136 134 129 262 263 264 265 266 94

Traverse 6  
NE



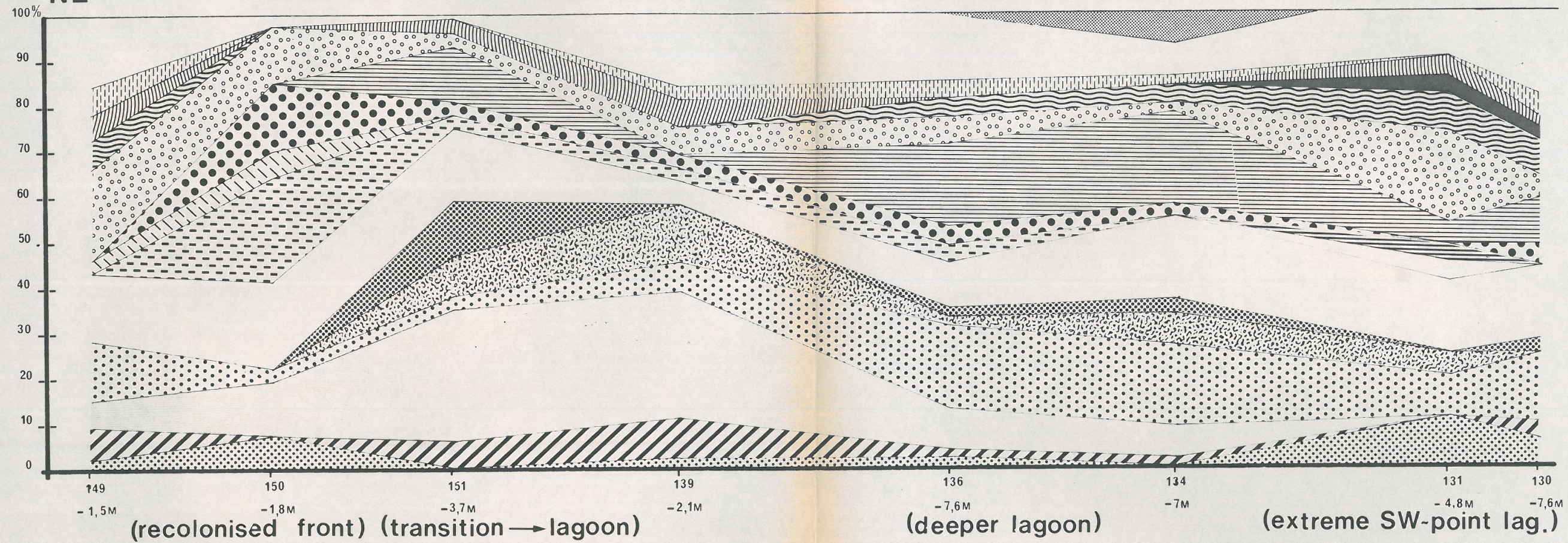
L A G O O N

SOU



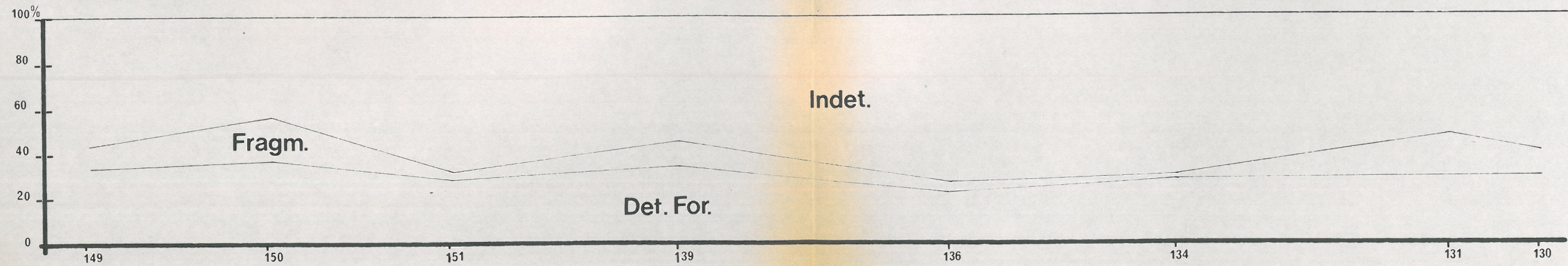
Traverse 7  
NE

SW

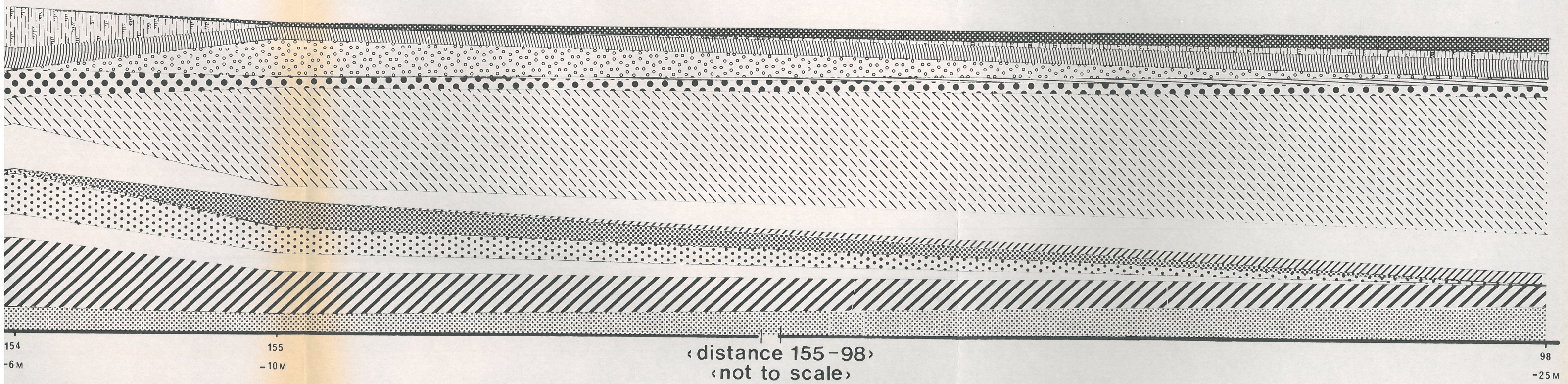


SANDY SHOAL

L A G O O N



W



< distance 155-98 >  
< not to scale >

WESTERN PERIREEFAL AREA

Indet.

Fragm.

Det. For.

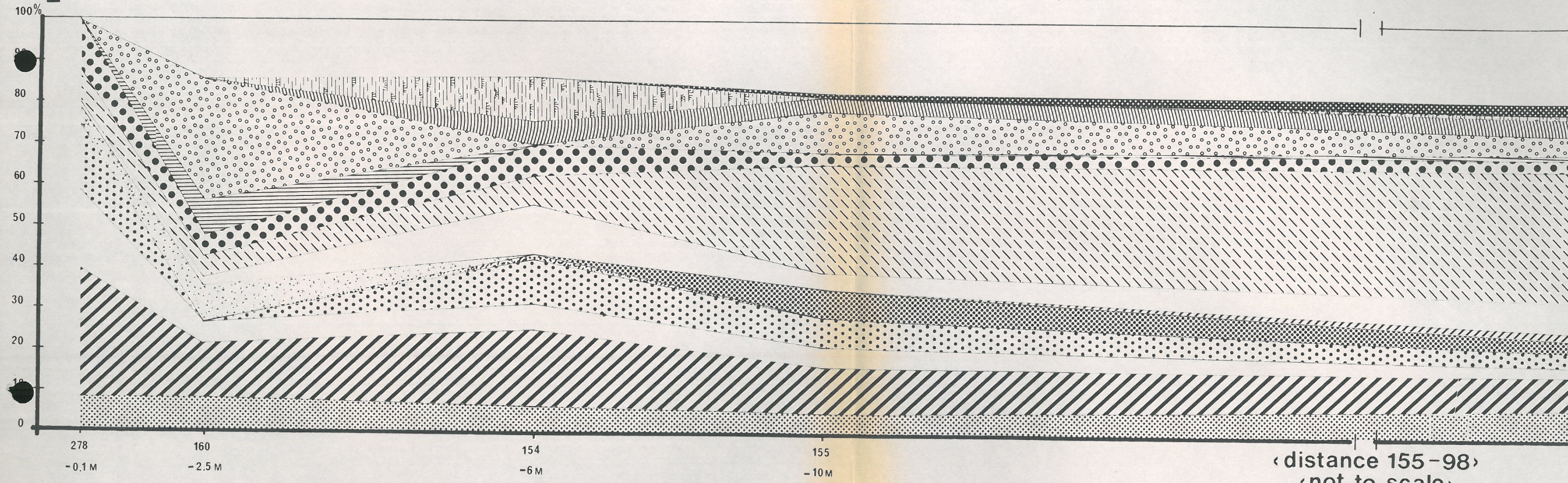
154

155

98

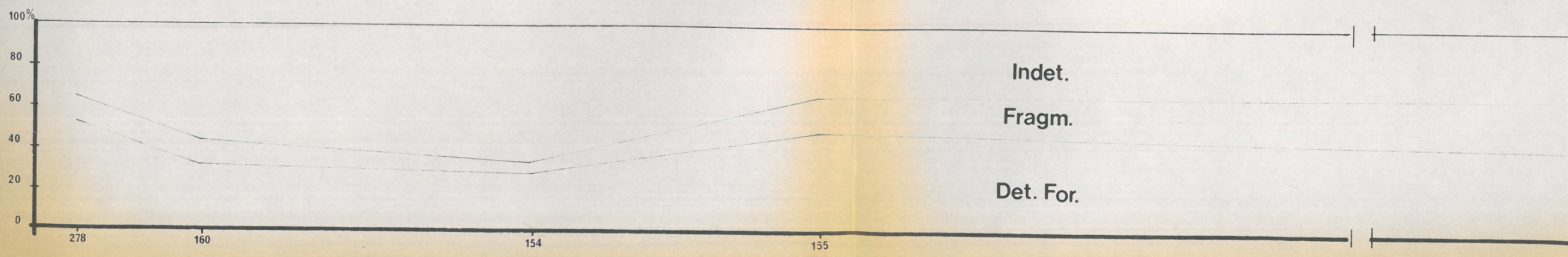
Traverse 10

E

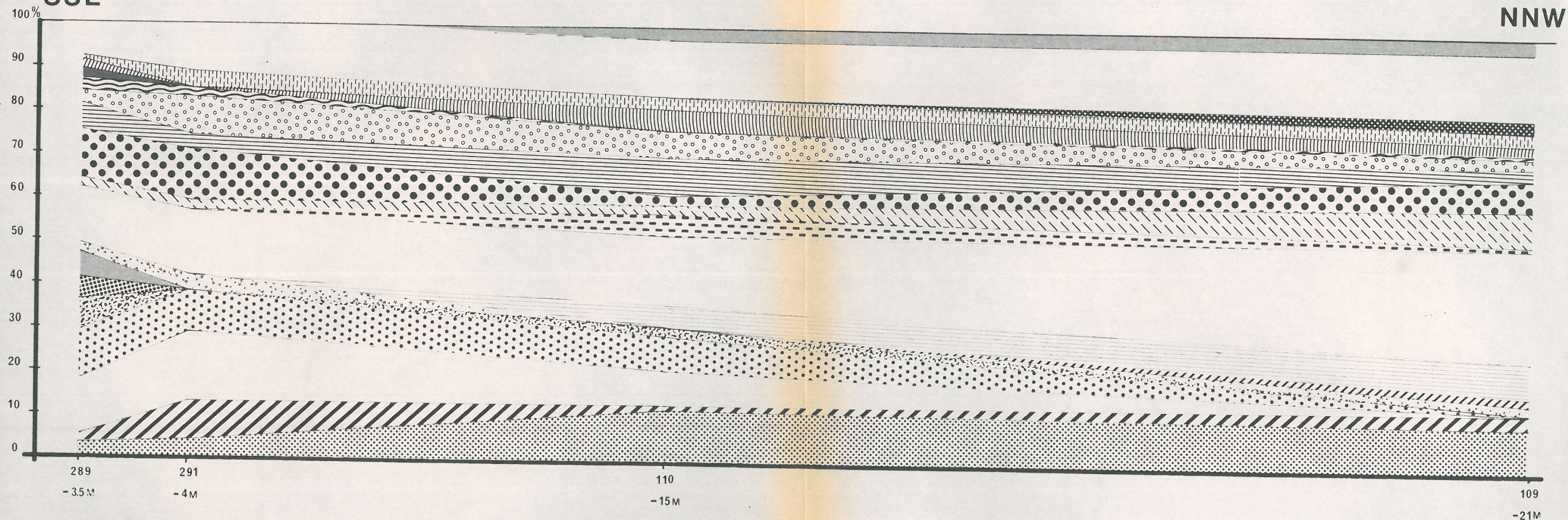


PATCHREEF AREA

WESTE



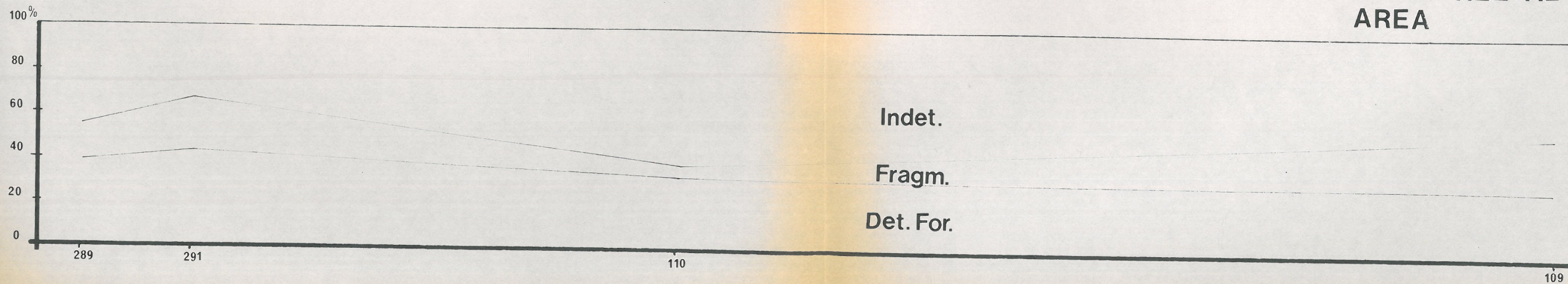
Traverse 11  
SSE



WATSON'S BAY

WESTERN SLOPE

WESTERN PERIREEFAL  
AREA



Indet.

Fragm.

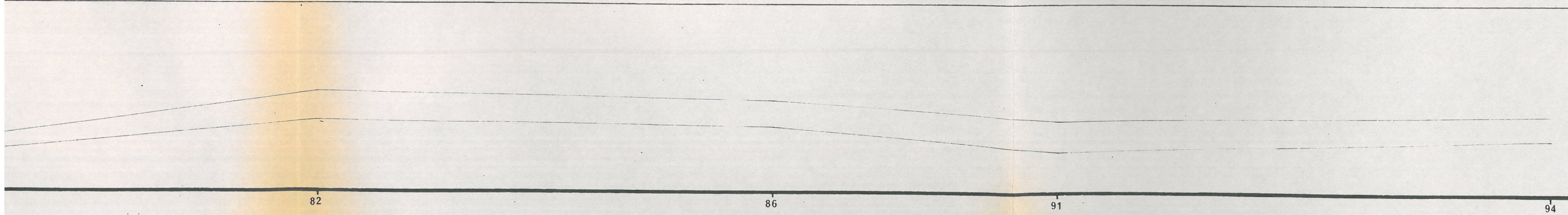
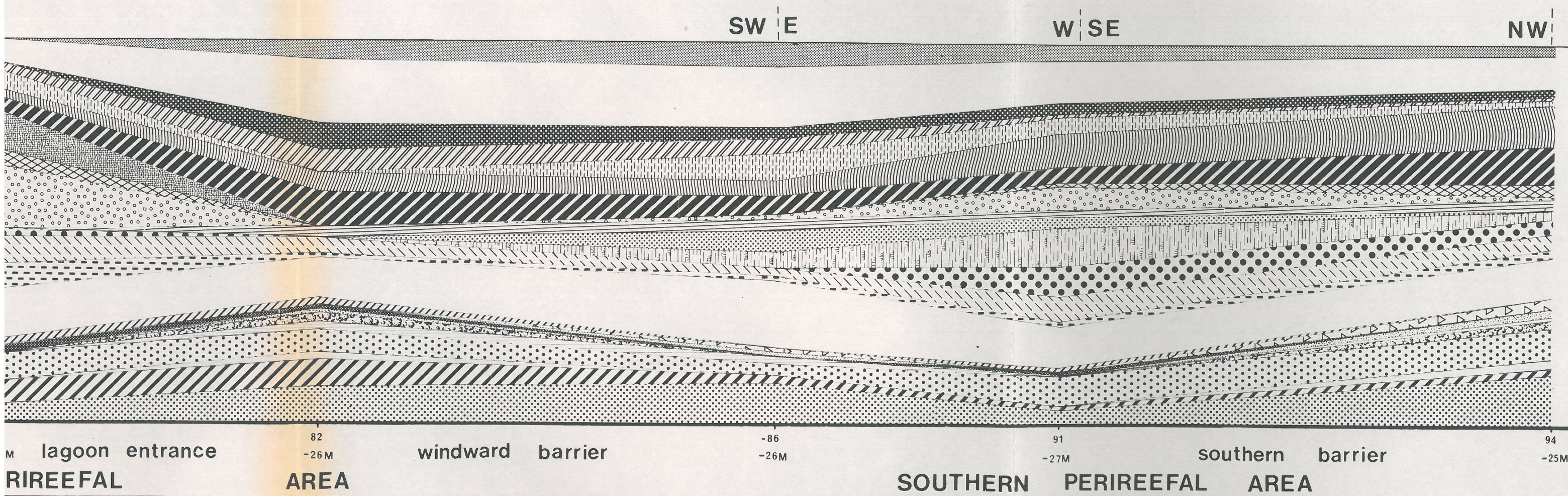
Det. For.

NNW

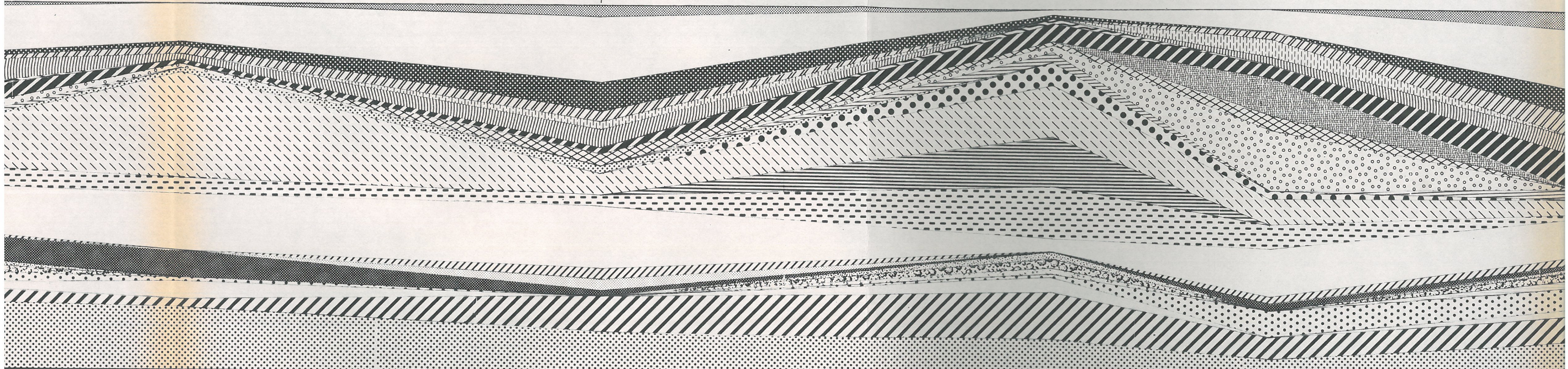
109

-21M

109



SE | NE



62  
-21M

crystal beach  
AREA

65  
-32M

72  
-12M coconut reef flat  
EASTERN

77  
-22M lagoon entrance  
PERIREEFAL

PERIREEFAL

AI

Indet.

Fragm.

Det. For.

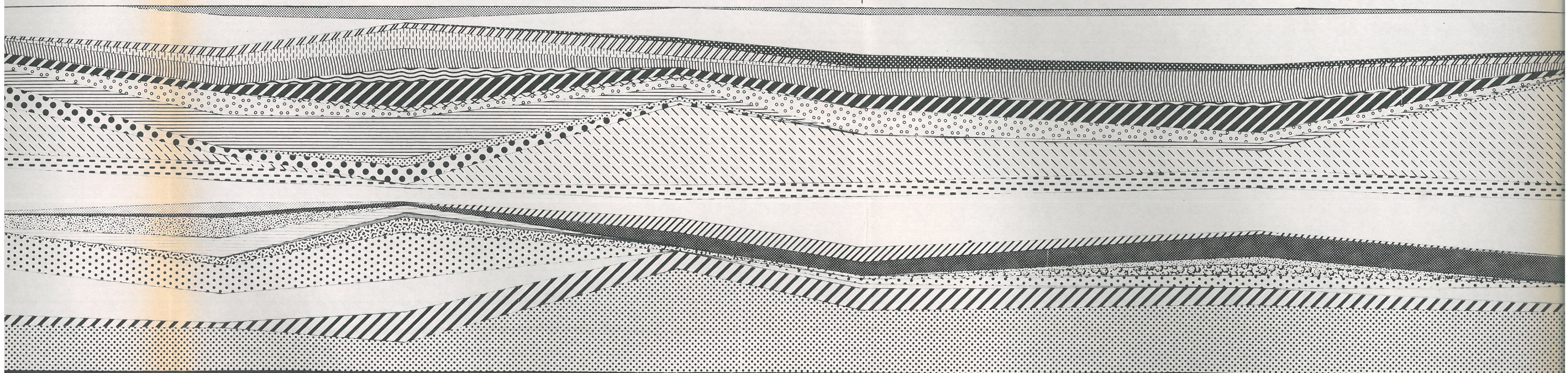
62

65

72

77

NE | NW



110  
-15M

108  
-11M

50  
-16M

56  
-22M

60  
-21M

LEEWARD SLOPE

NORTHERN PERIREEFAL AREA

EASTERN

PERIREEF

110

108

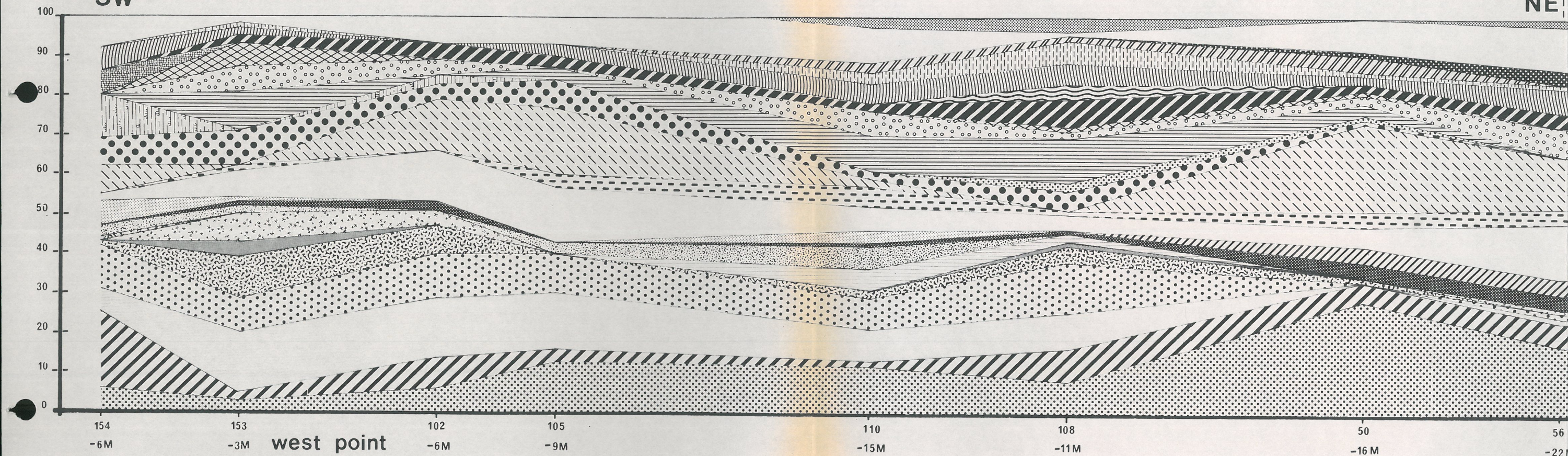
50

56

60

Traverse 14  
SW

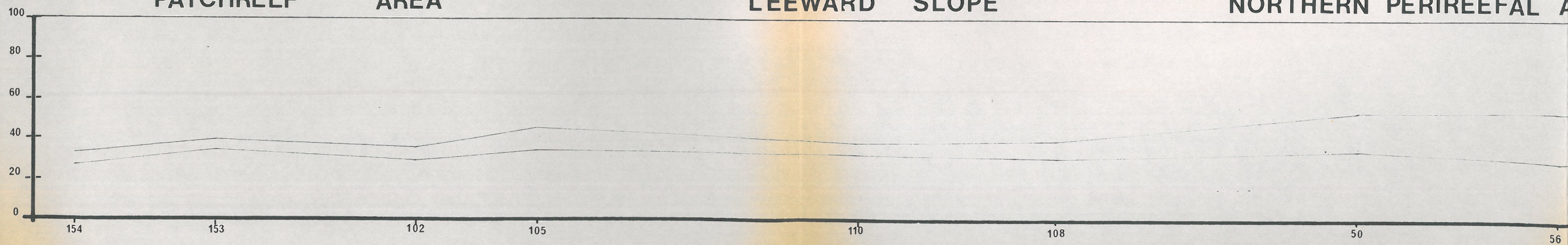
NE



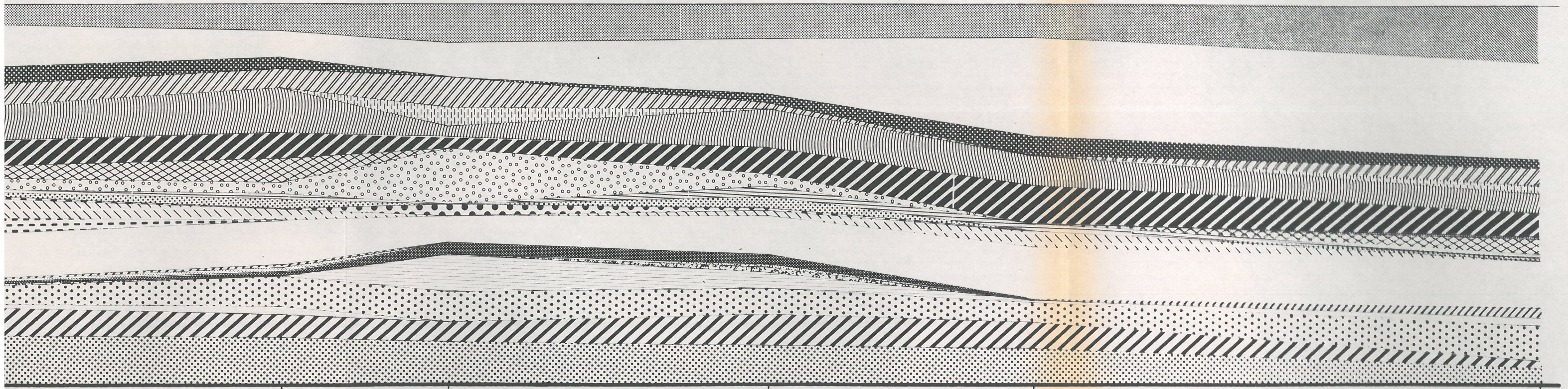
PATCHREEF AREA

LEEWARD SLOPE

NORTHERN PERIREEFAL AREA



SW



71

75

81

84

90

-31M

-27

-30M

-31M

-29M

AREA

OFF COCONUT FRINGING REEF

OFF WINDWARD BARRIER

71

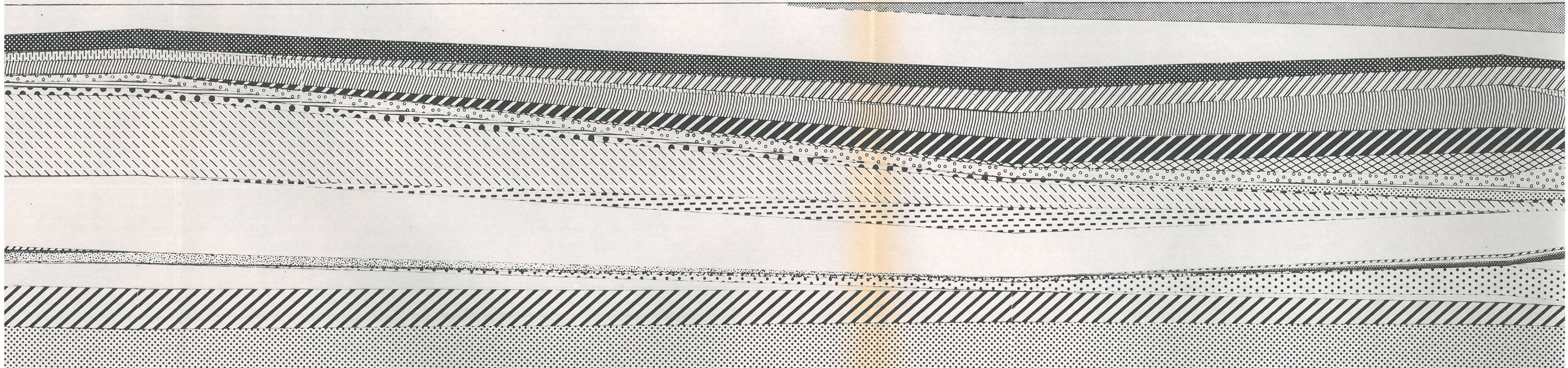
75

81

84

90

SE | NE



63  
-21M  
LEEWARD OF  
SANDBANK REEF

EASTERN

PERIREE FAL

67  
-31M

AREA

71  
-31M  
OFF COCONUT

Indet.

Fragm.

Det. For.

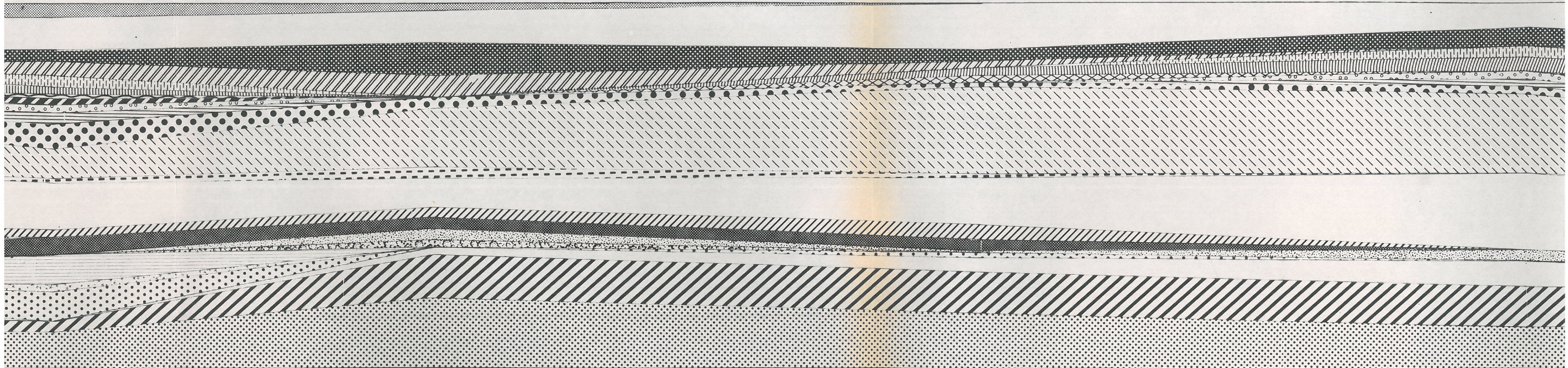
63

67

71

NE | WNW

ESE | NW



109  
-21M

54  
-25M  
OFF  
NORTH POINT

NORTHERN PERIREEFAL AREA

59  
-26M

63  
-21M  
LEEWARD  
SANDBANK R

Indet.

Fragm.

Det. For.

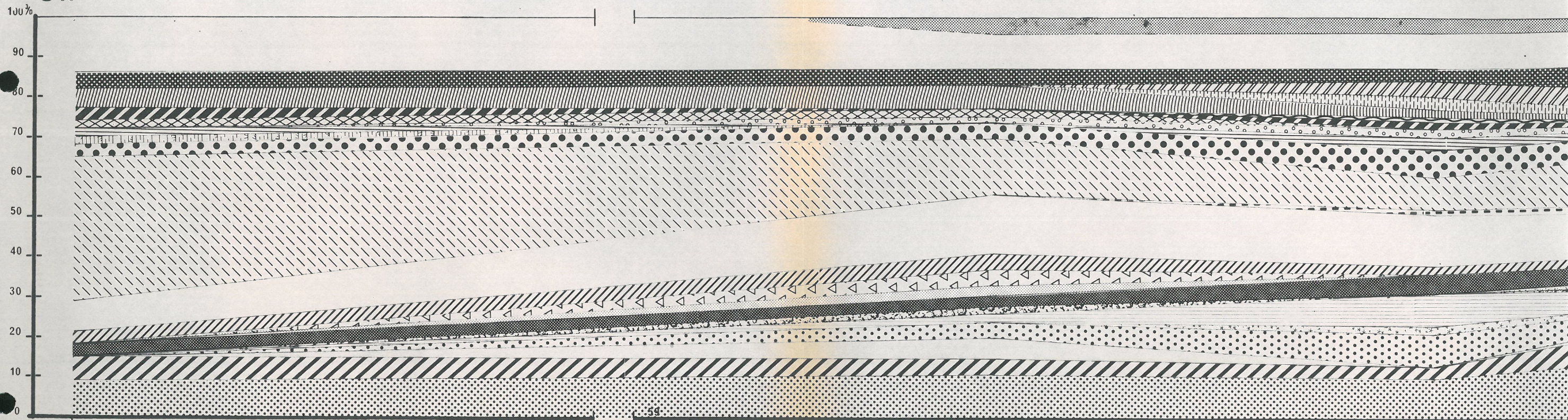
109

54

59

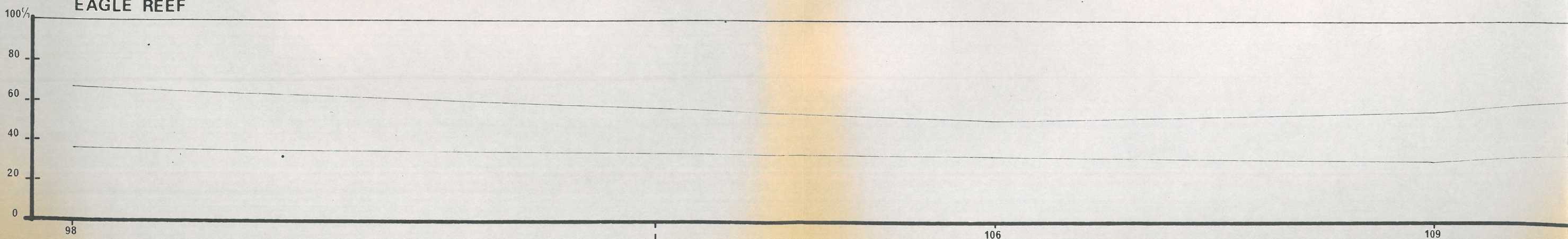
63

Traverse 15  
SW



distance L 98-L106  
(not to scale)

98 -25M      106 -18M      109 -21M  
HALFWAY LIZARD ID- WESTERN PERIREEFAL AREA  
EAGLE REEF



A N N E X 3

Sample localisation map

LEGEND

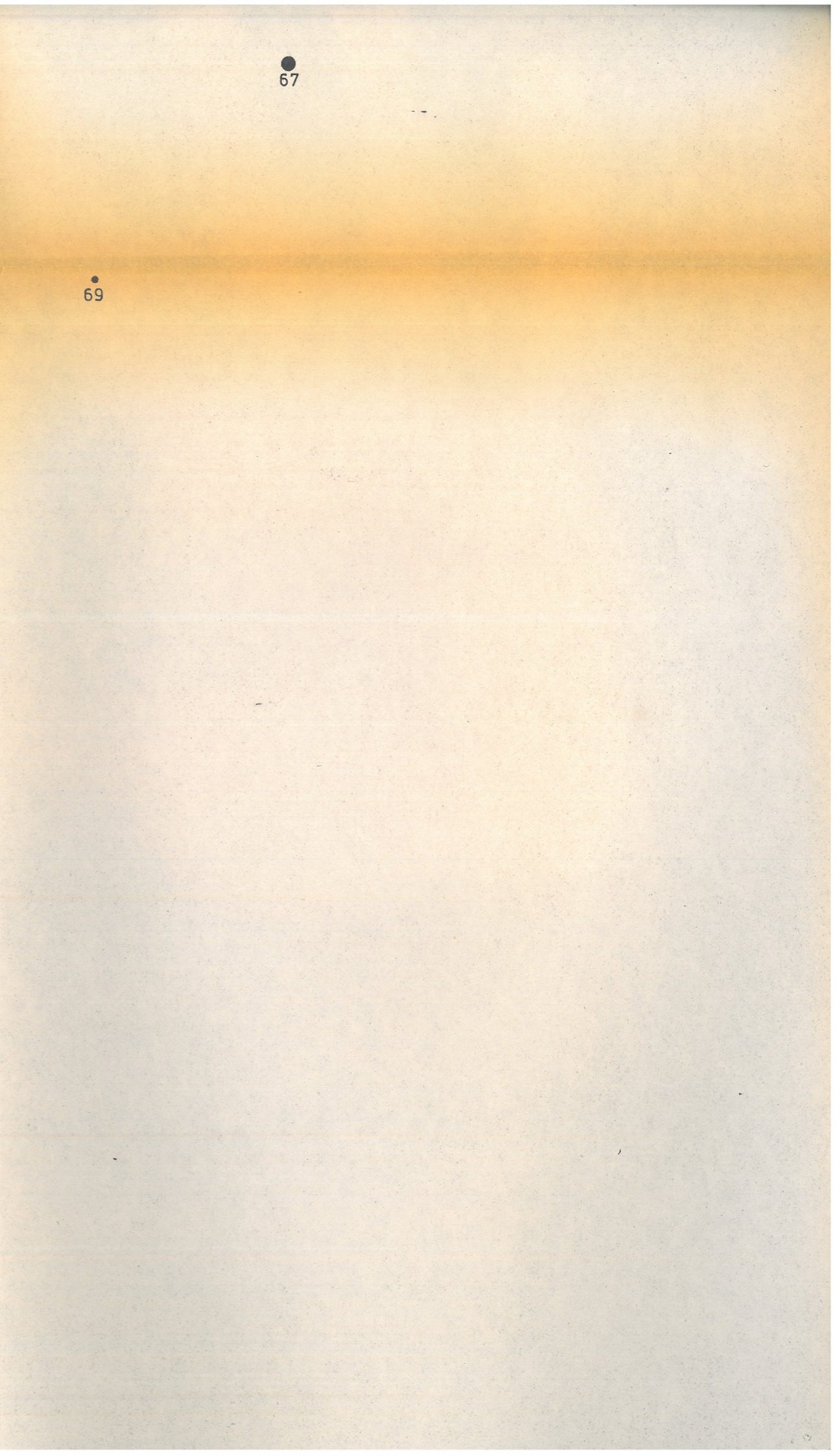
Black dots = grab samples

Open circles = hand-taken samples

Small back points : untreated grab samples.







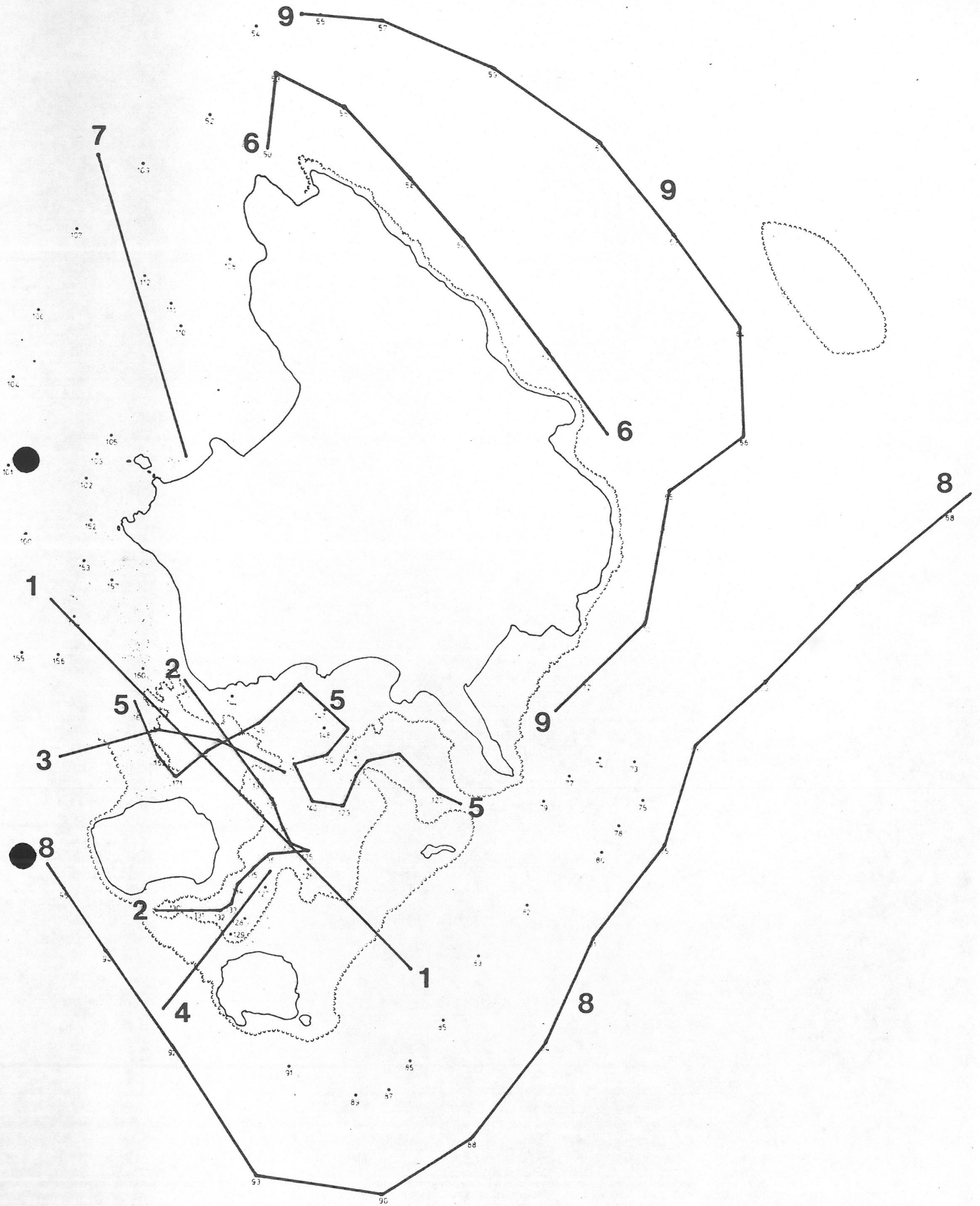


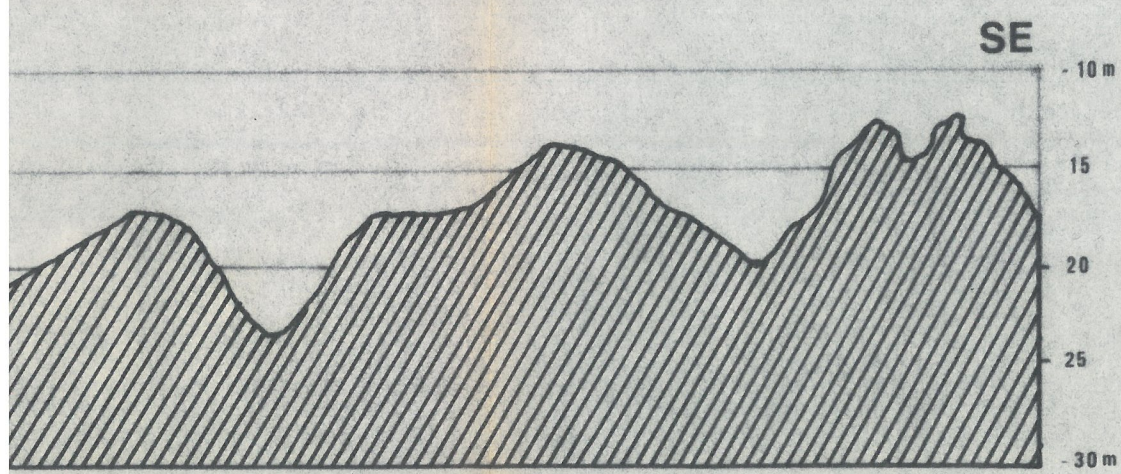
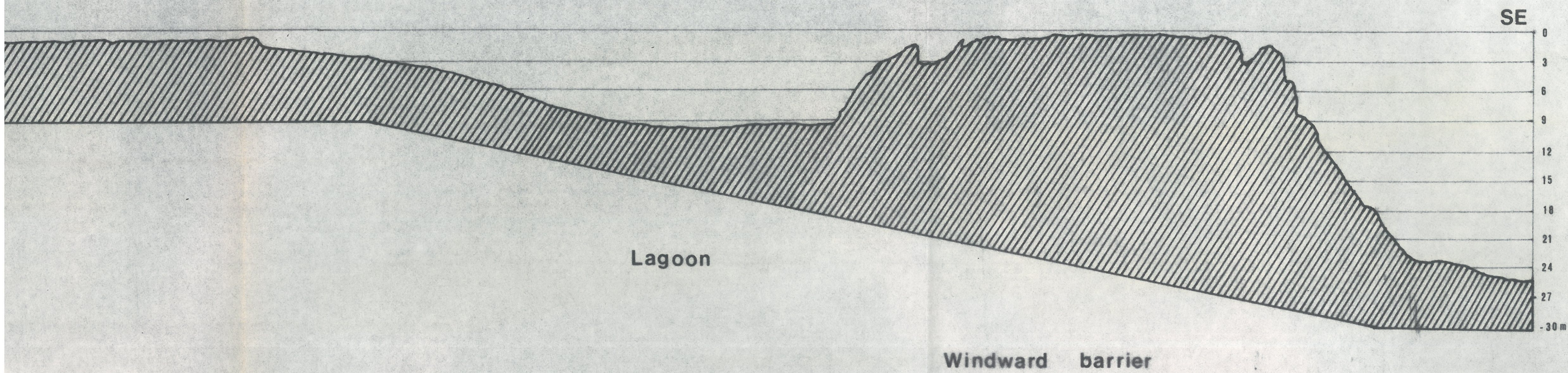
A N N E X 4

Echosounding tracks

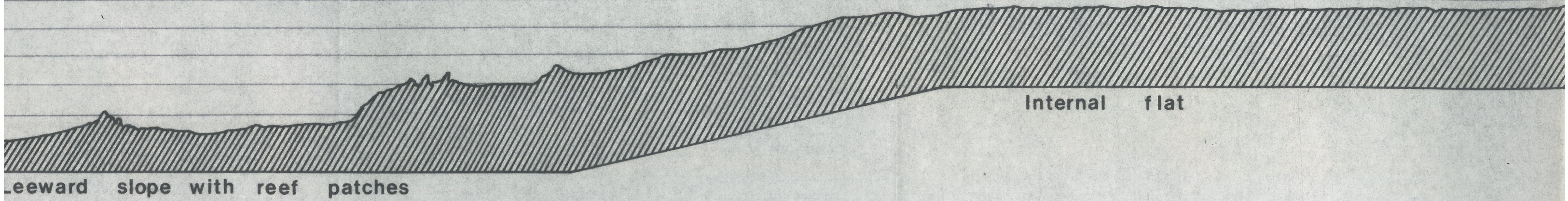
## LEGEND

The echosounding tracks have been redrawn from the original Bendix graphs. The latter are not reproduced here as they show numerous scale switches. A localisation map is to be found on next page. Depths are indicated in meters.

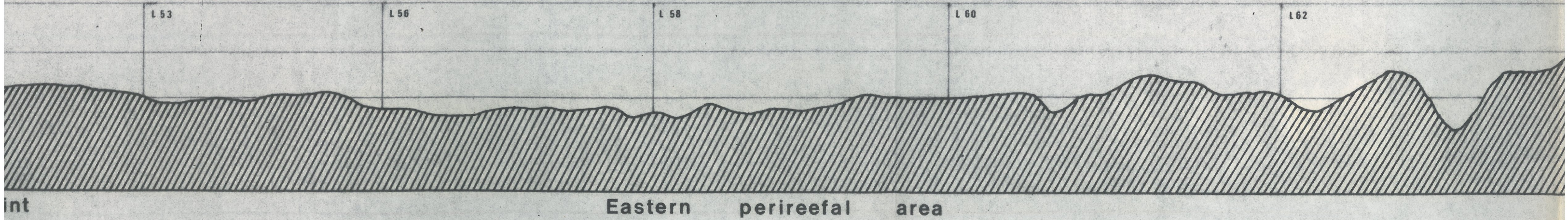


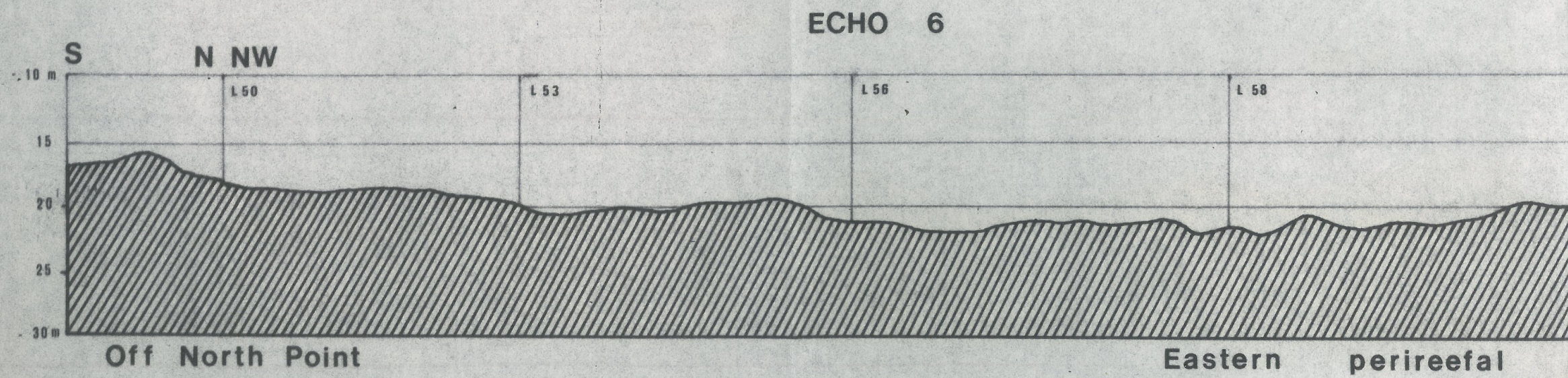
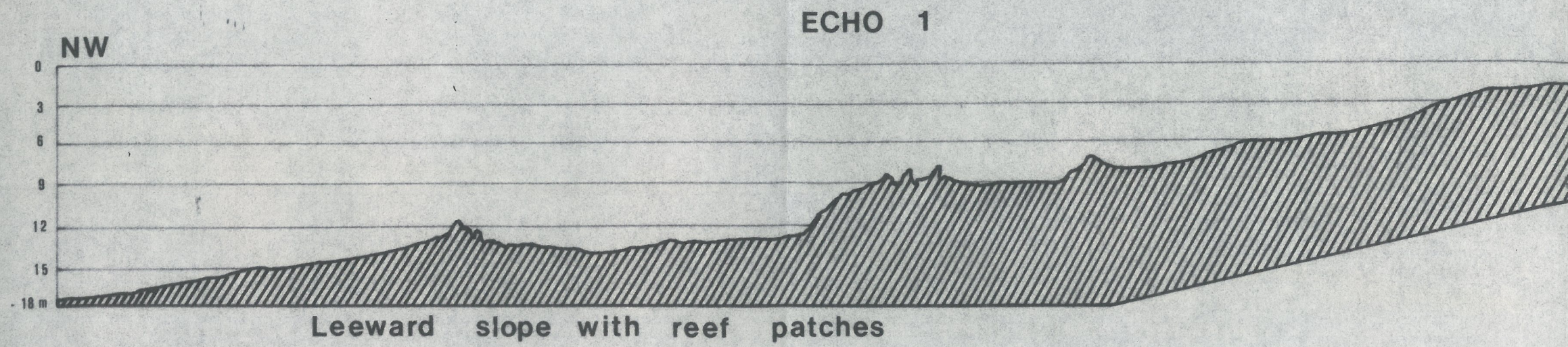


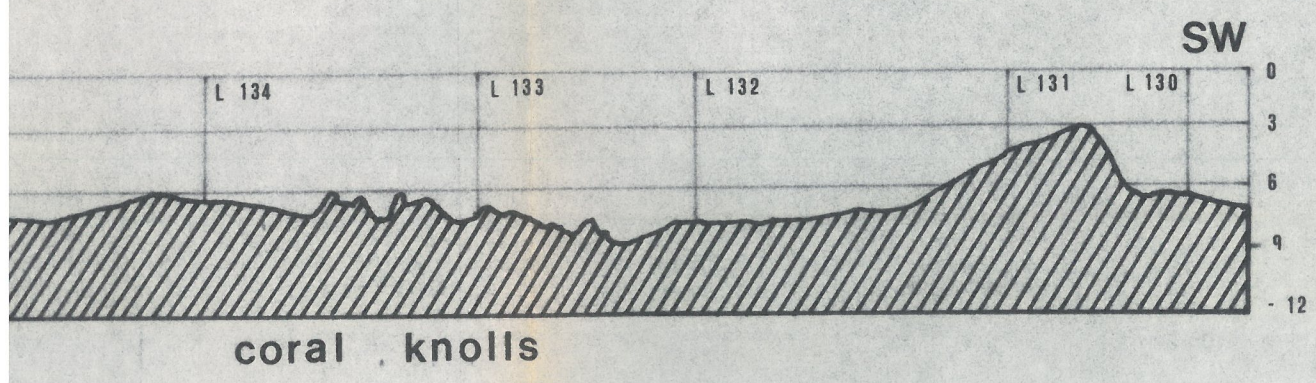
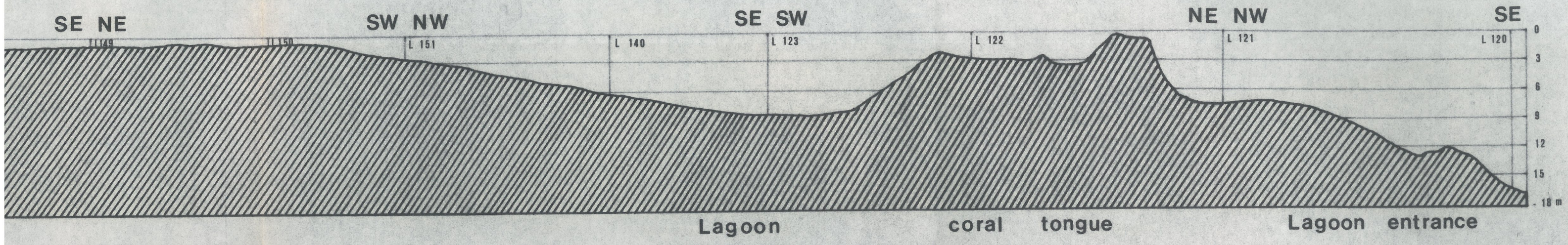
ECHO 1

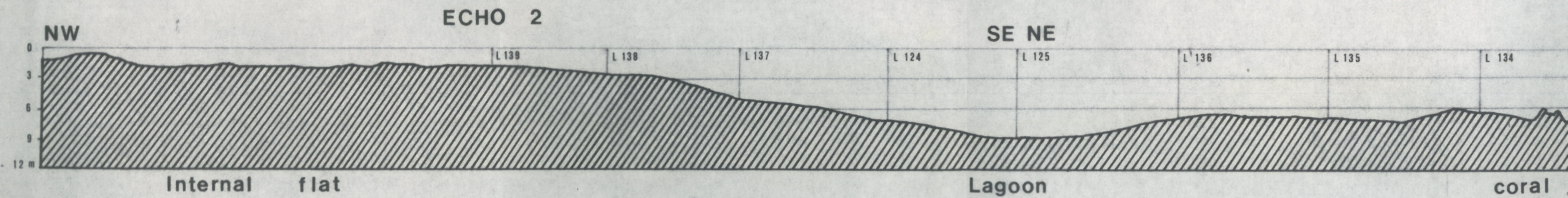
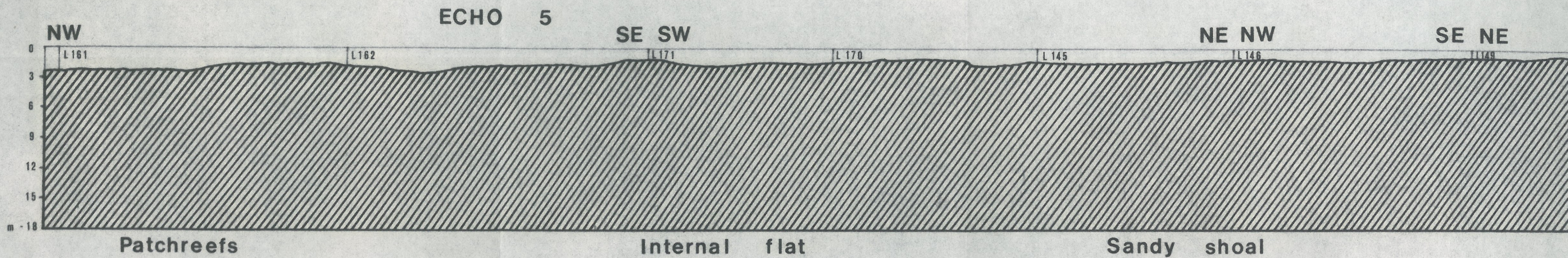


ECHO 6



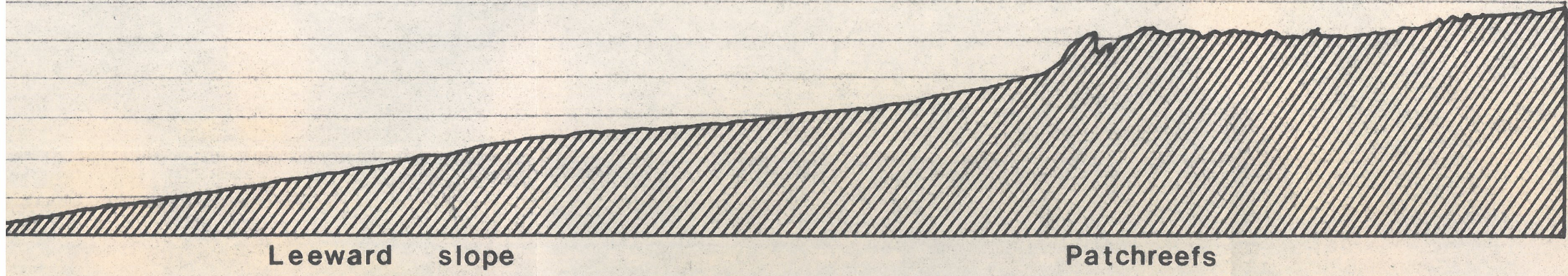






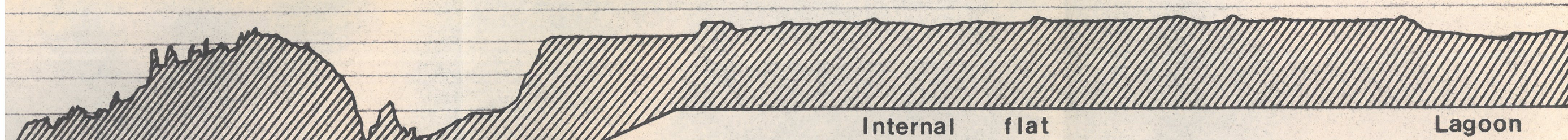
ECHO 7

SSE



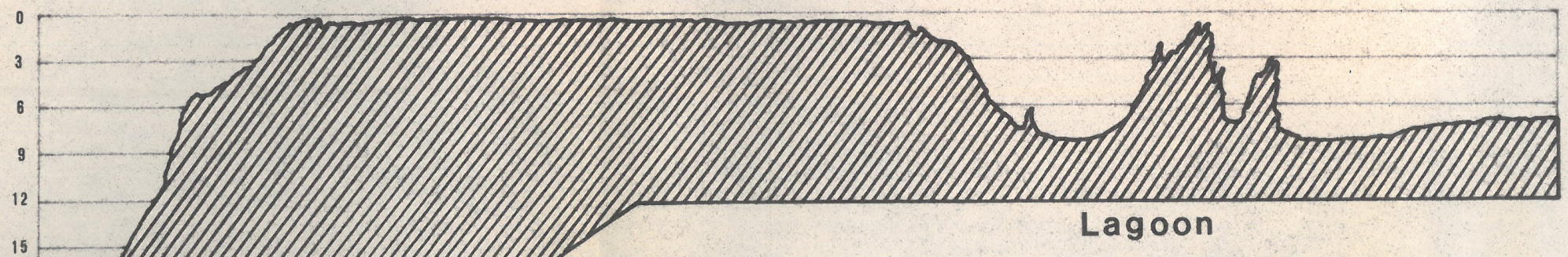
ECHO 3

E



Patchreefs

NE

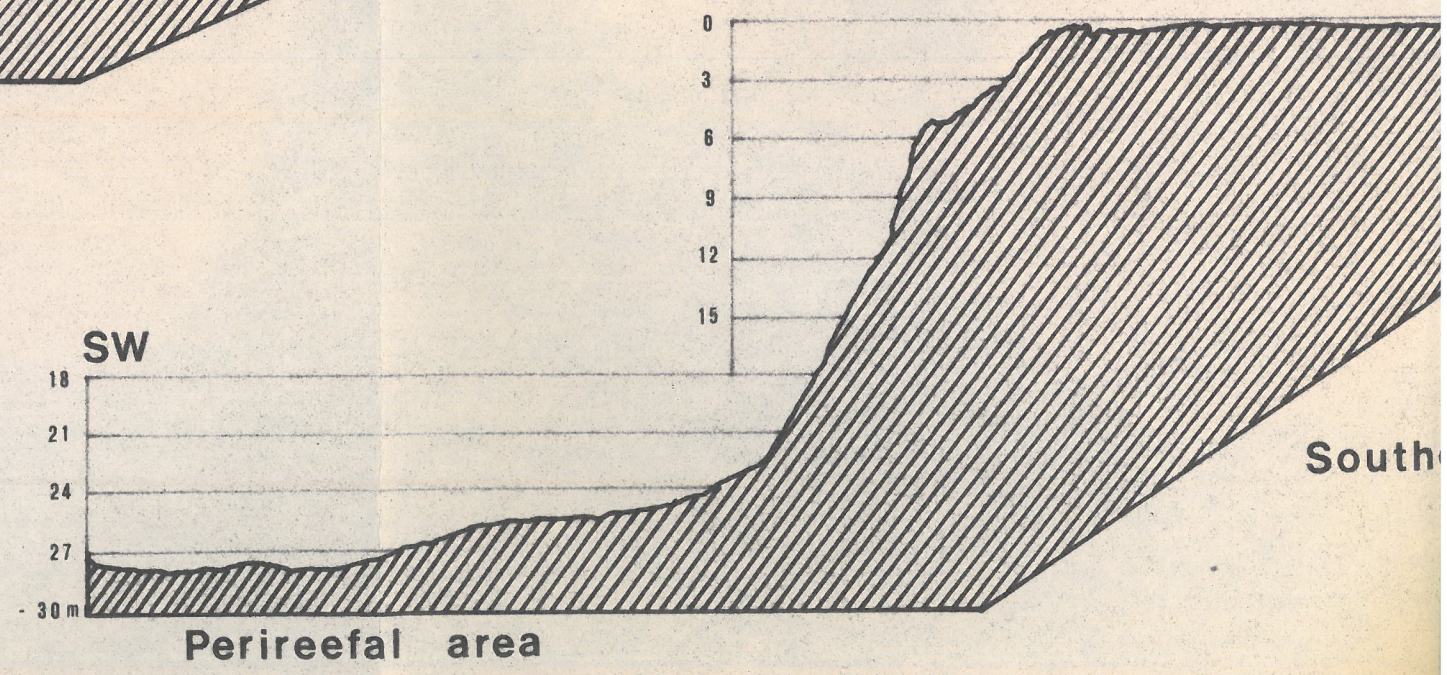
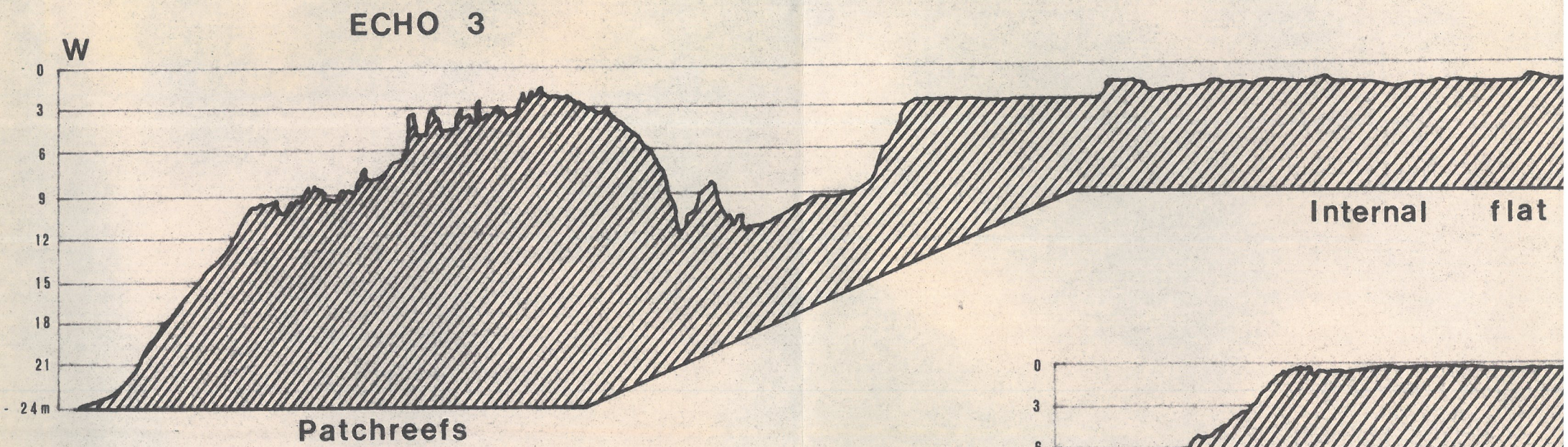
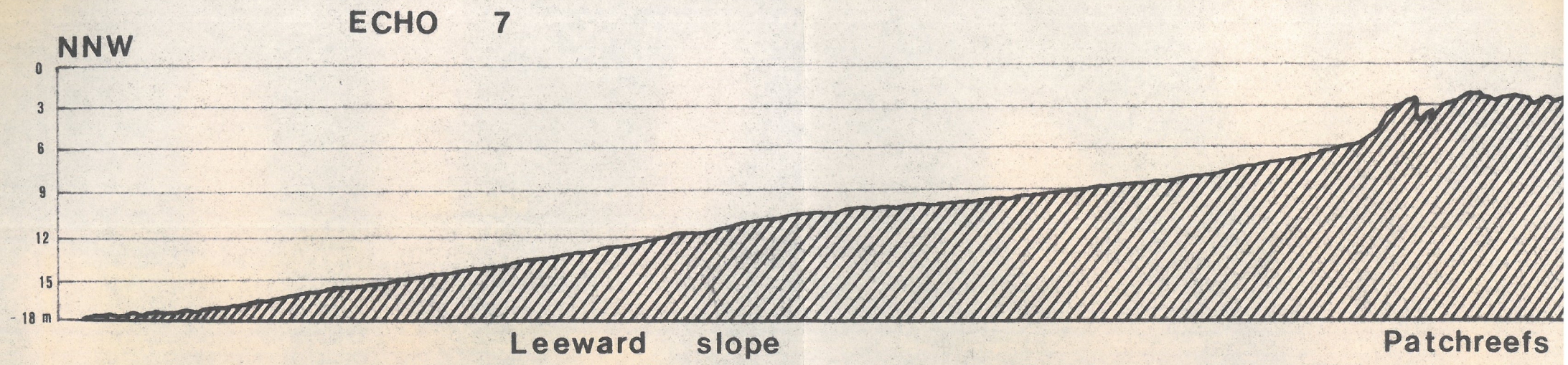


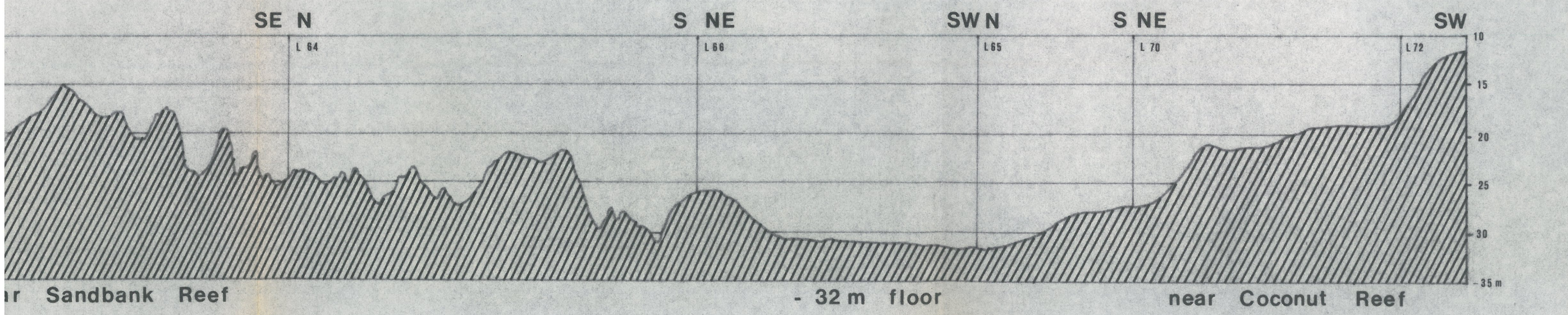
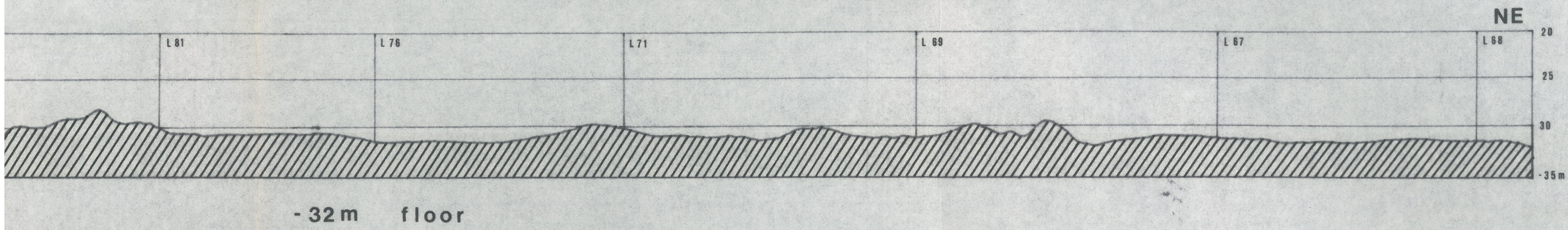
SW

18  
21  
24  
27  
30 m

ECHO 4

Perireefal area





ECHO 8

PERIREEFAL AREA

SE W

E SW

L 94

L 92

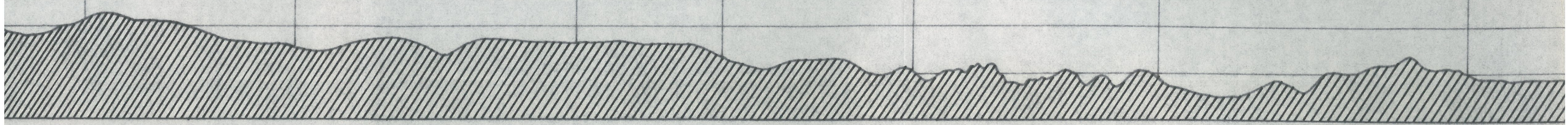
L 93

L 90

L 88

L 84

L 81



- 27 m floor

ECHO 9

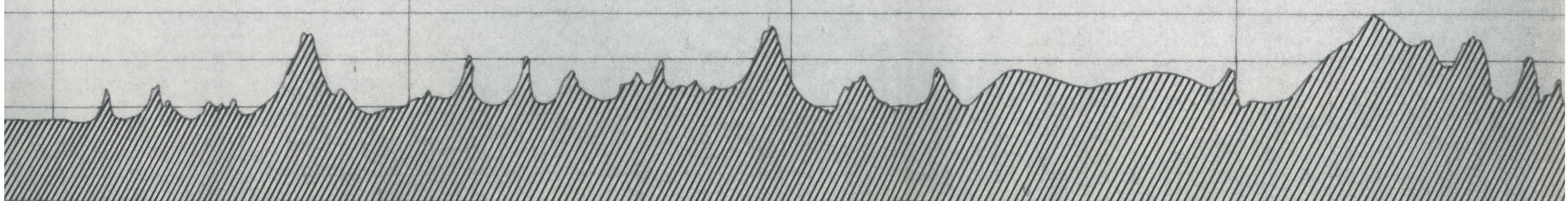
PERIREEFAL AREA

L 57

L 59

L 61

L 63

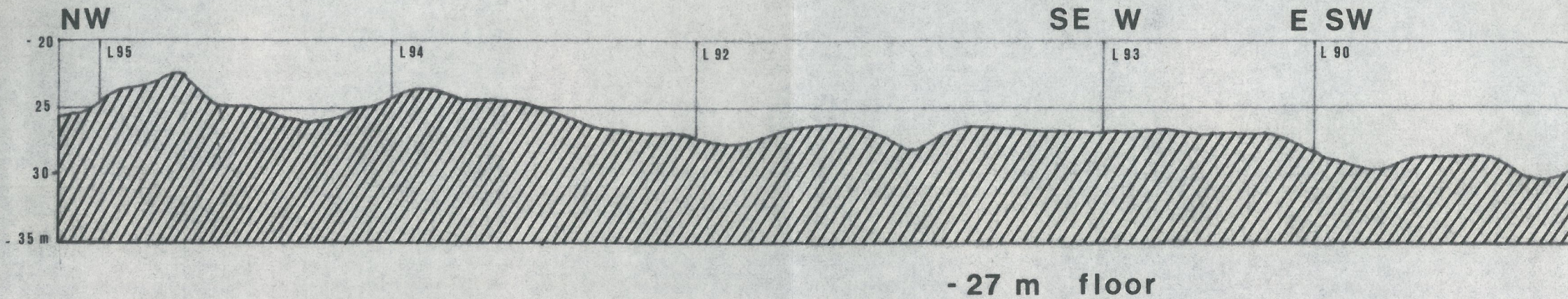


- 27 m floor

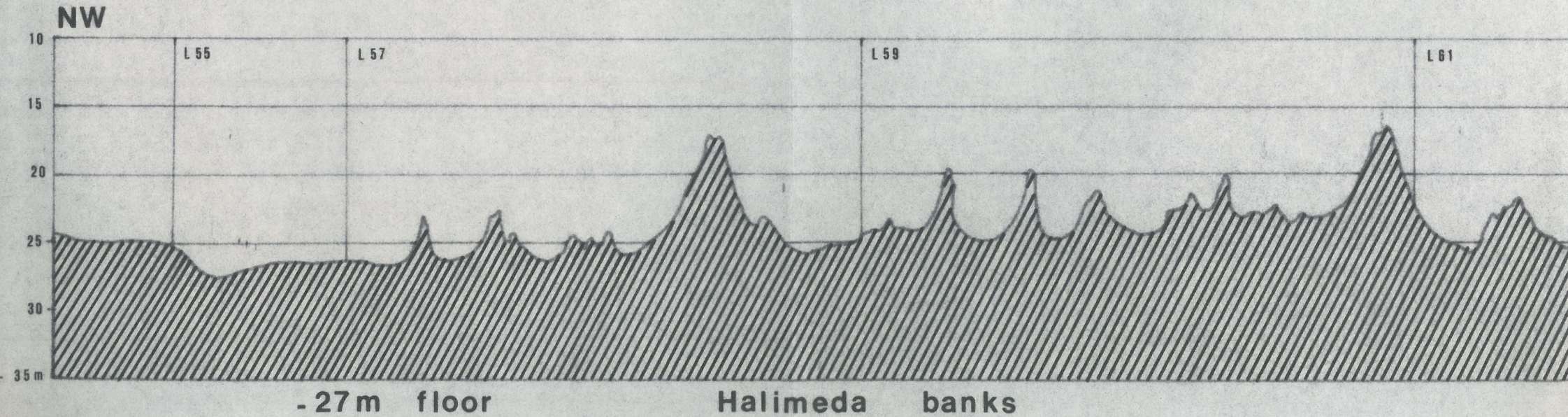
Halimeda banks

near Sandbank Reef

ECHO 8



ECHO 9



A N N E X 5

Synoptic diagram

## LEGEND

This synoptic diagram groups all frequency data of foraminiferal taxa per sample. All samples are grouped per environment, and all environments (separated by a thick, black horizontal line) are grouped per average depth (reef flats and intertidal environments on top, Perireefal Area below). Individual sample depths can be found in Annex 1.

- In the utmost left column the environment names are indicated.
- Second and third column from the left hand side give sample number and subsample indication.
- Foraminiferal taxa are named on top of the diagram, in systematical sequence from left to right (Textulariina - Miliolina - Rotaliina).
- For each taxon, the frequency data in bio- and thanatocoenose can be read per sample in the square obtained by the intersection of the vertical taxon column with the horizontal sample column.

A diagonal line separates this square in an upper left triangle where biocoenose data occur, and a lower right triangle where thanatocoenose data occur.

### Biocoenose data (semi-quantitative) (upper left triangle)

Symbols :

- rare : small black point
- common : open circle
- abundant : circular black dot.

### Thanatocoenose data (quantitative) (lower right triangle)

Data are expressed in percentage classes. Exact percentages of taxa per sample are to be found in Annex 1.

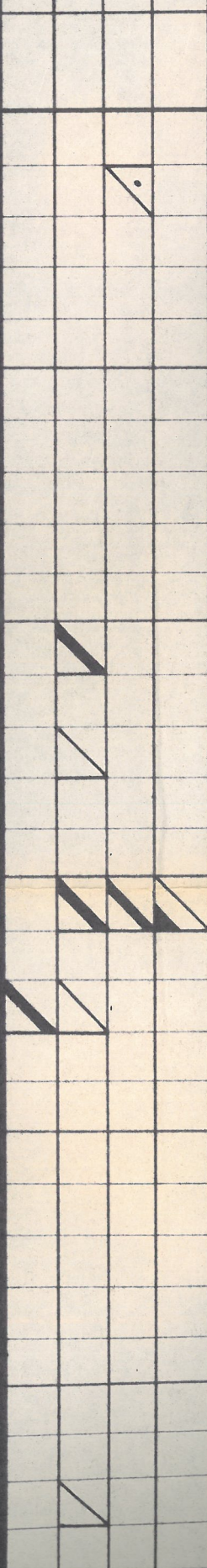
Symbols :

- less than 1% : open triangle
- 1 to 5% : blackened lower right corner of triangle
- 5 to 9% : thickened black hypotenusa of triangle
- 10% and more : complete black triangle.



**INTERNAL PLATFORM**

161  
162  
170  
171



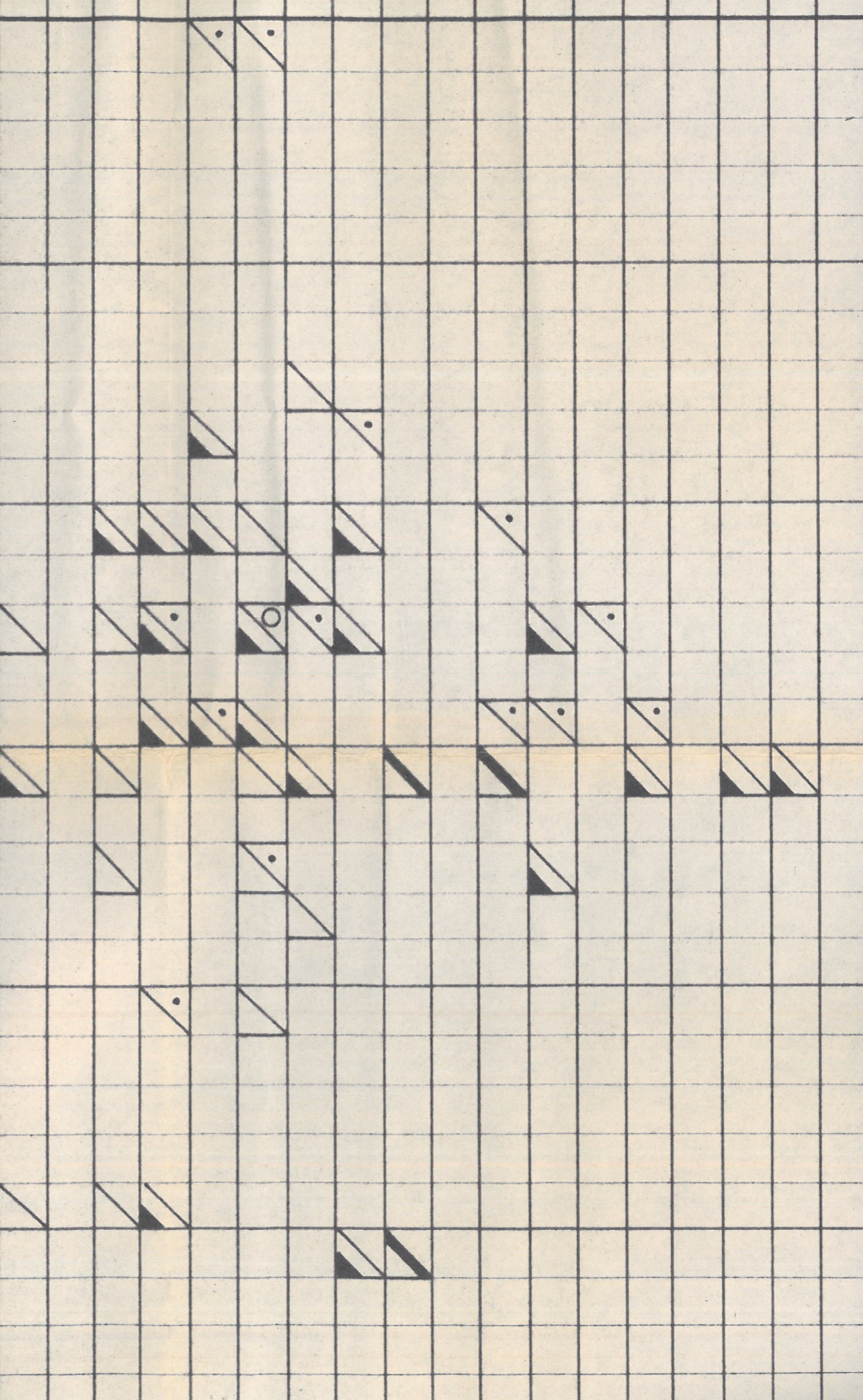
**SANDY SHOAL**

144  
145  
146  
149  
150  
271 a+b  
272



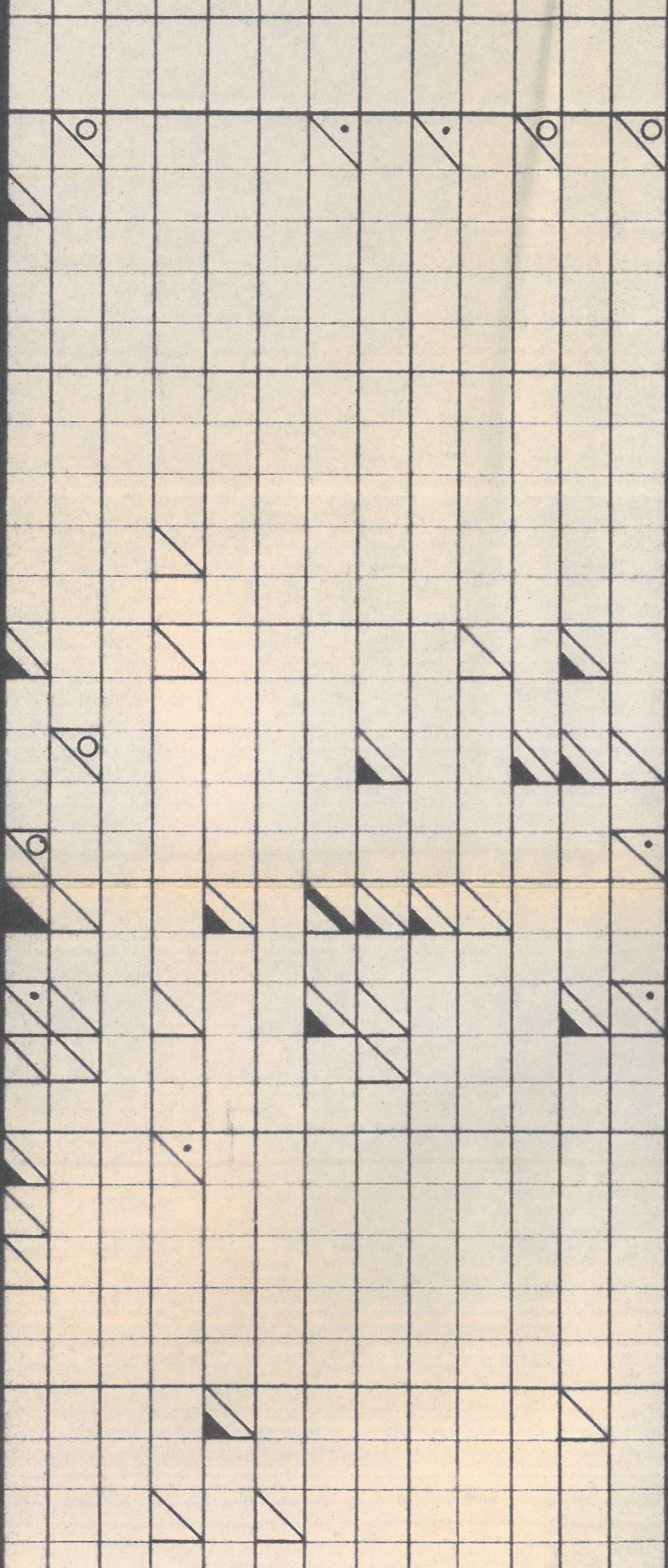
**PATCHREEFS**

273  
274  
275  
276 a+b  
277  
278 a  
278 d  
160  
157  
154  
153  
155  
100  
102  
105  
289 a+b  
290  
291

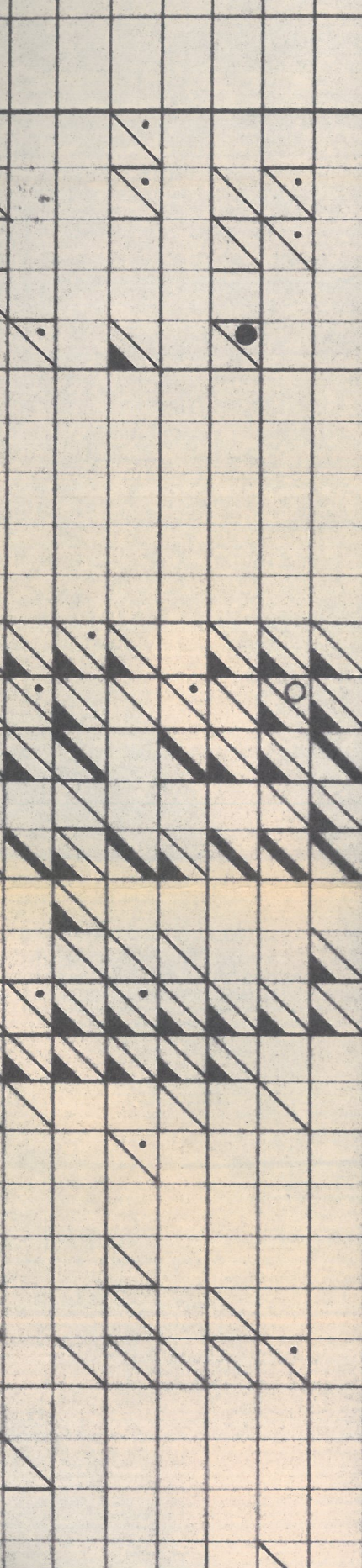


**LAGOON**

122  
123  
124  
126  
129  
130  
131  
134  
136  
139  
151  
121  
120



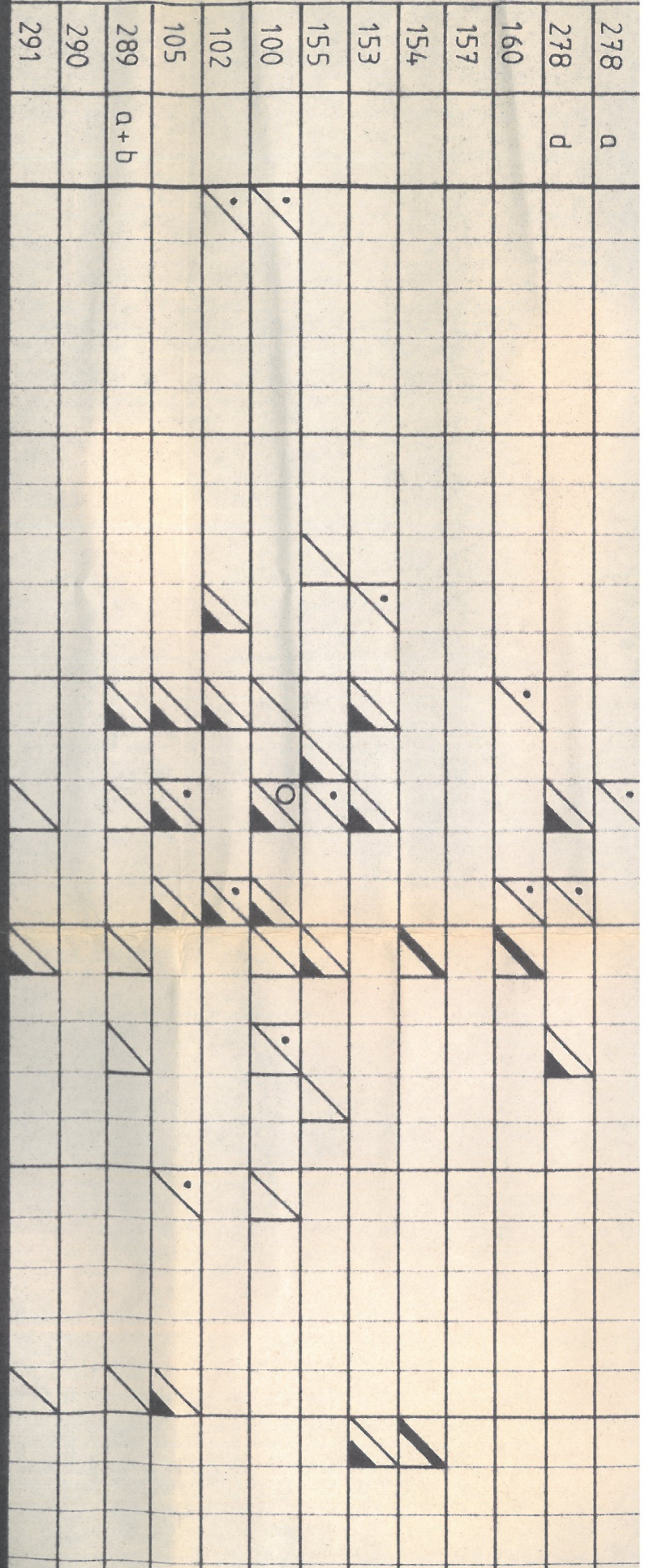
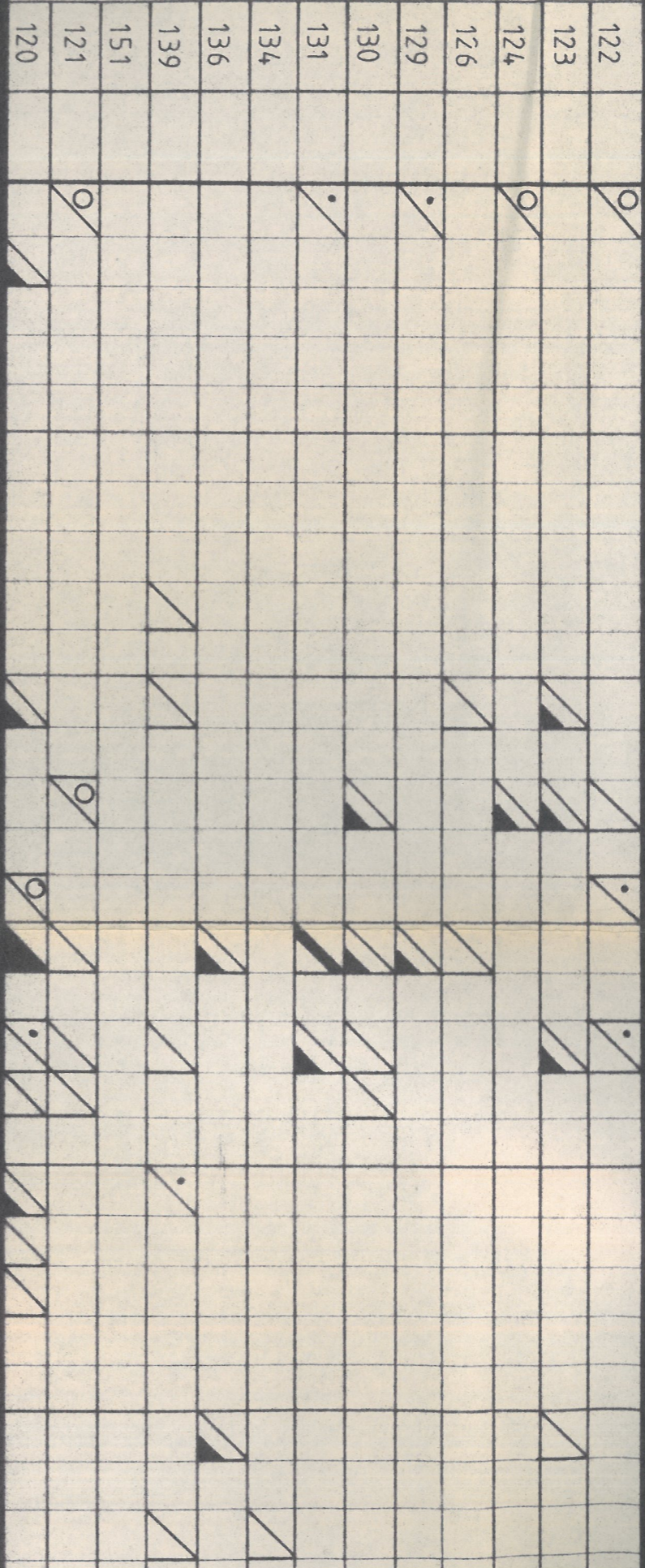
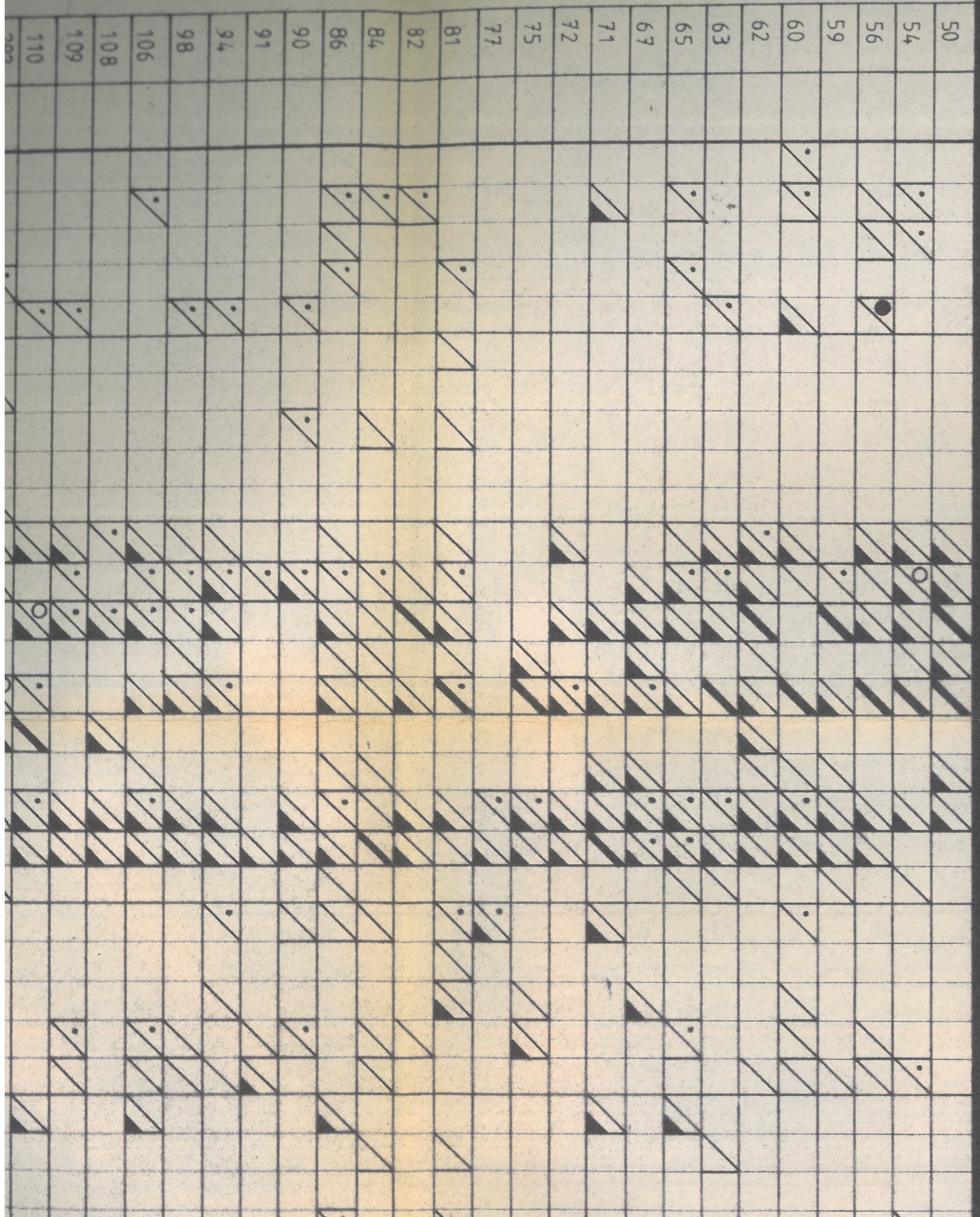
50  
54  
56  
59  
60  
62  
63



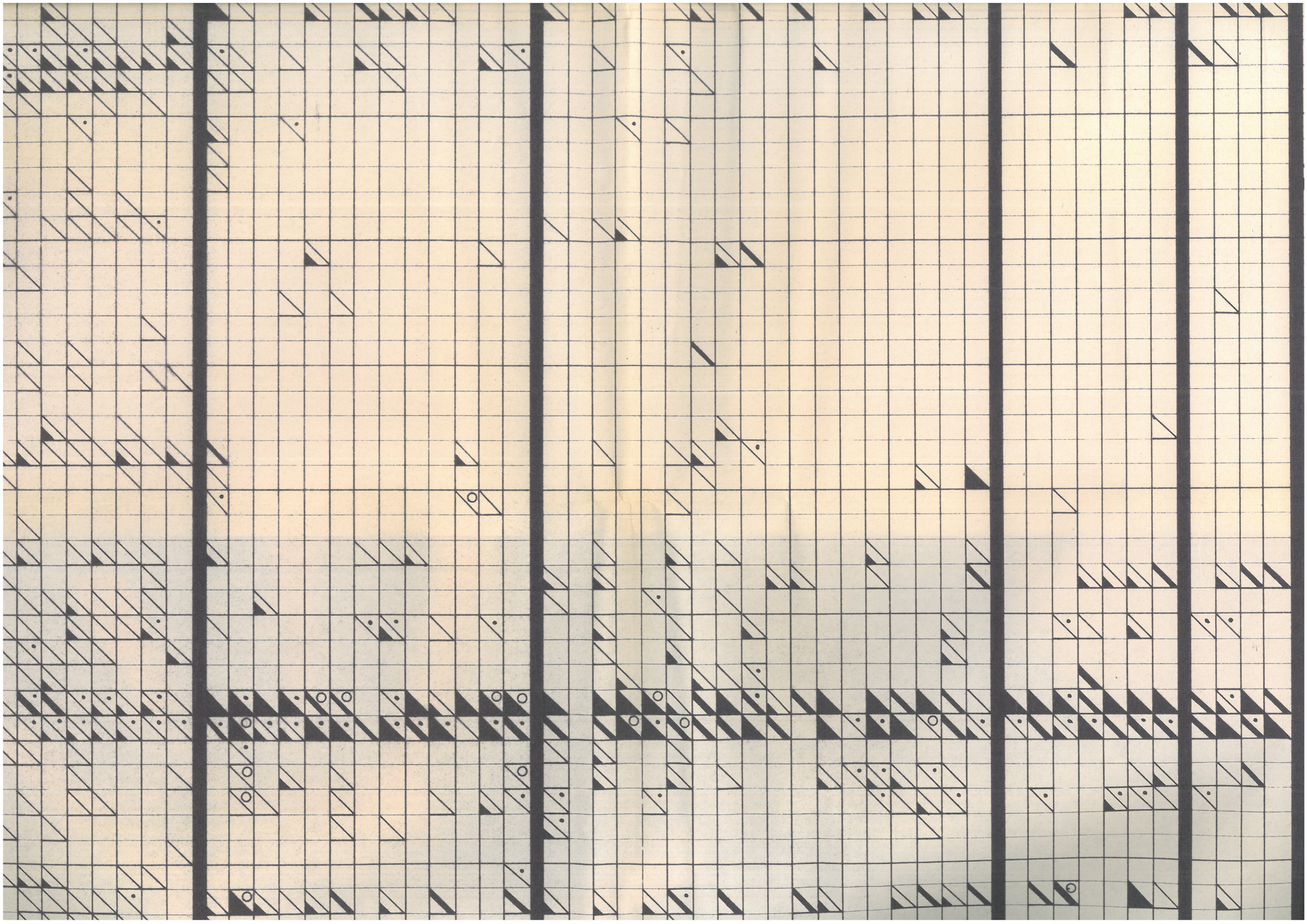
PERIREEFAL AREA

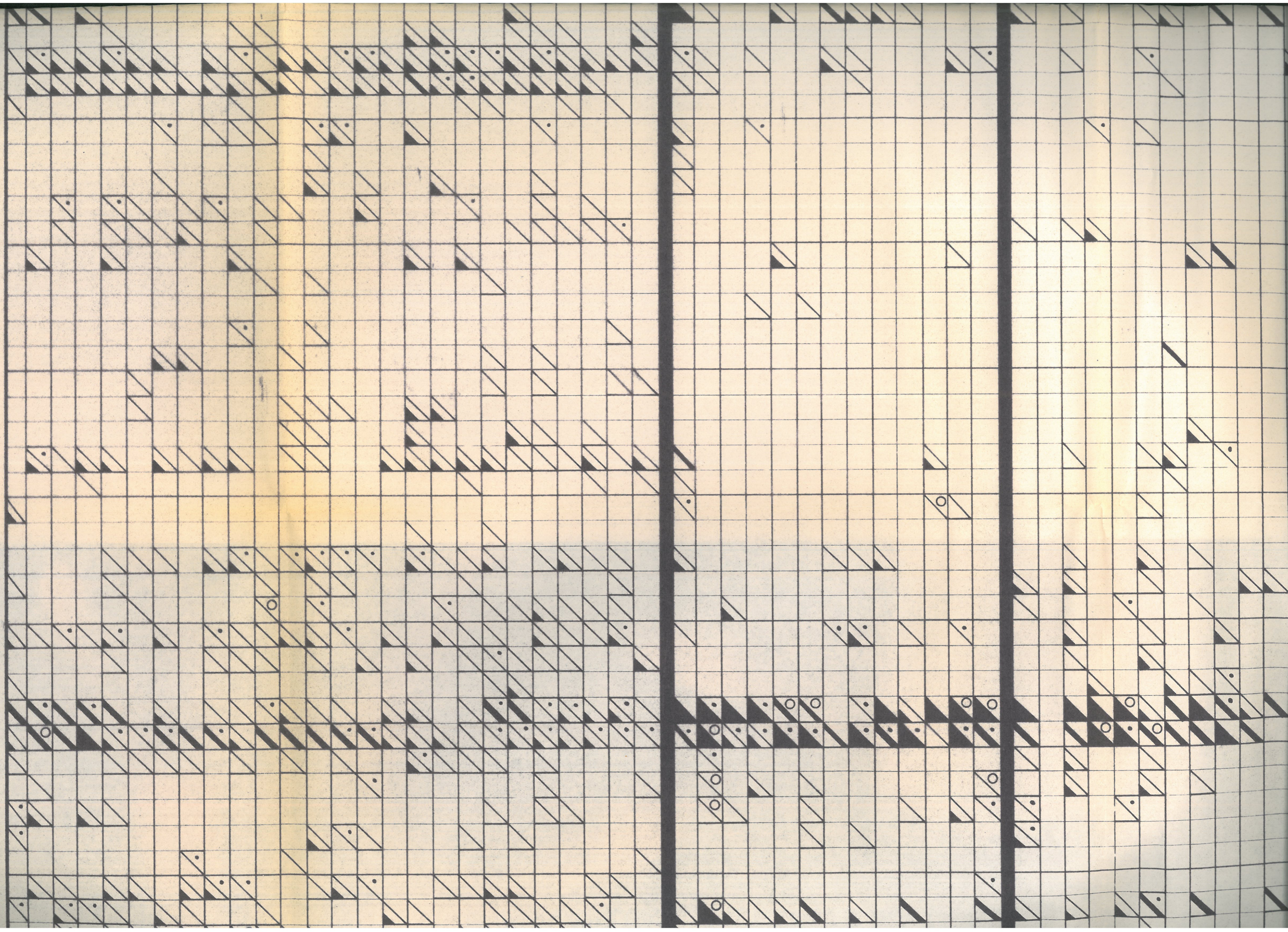
LAGOON

PATCHREEFS

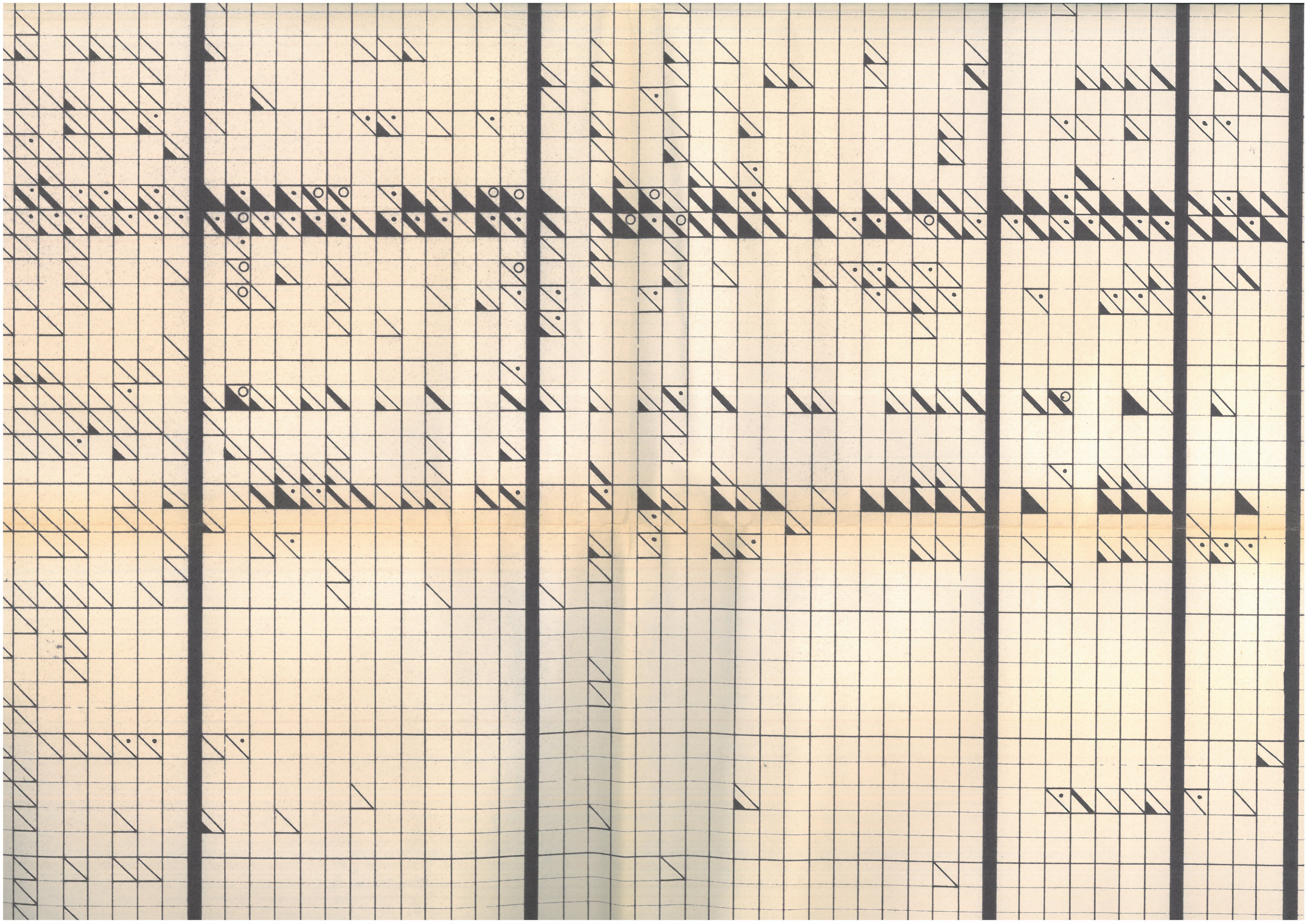


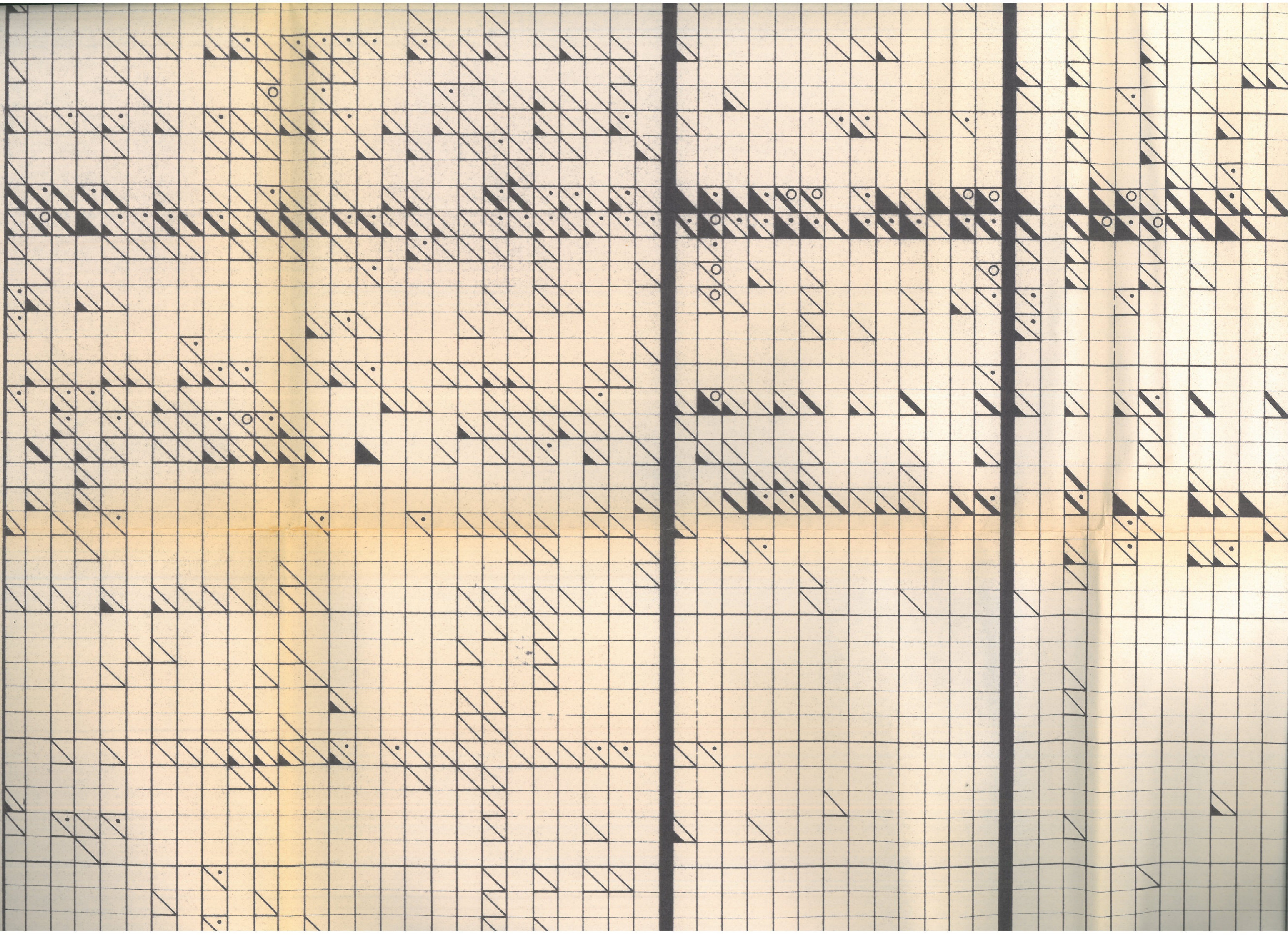
TEXTULARIA PORRECTA  
TEXTULARIA PSEUDOGRAMEN  
T. PSEUDOGRAMEN KERIMBAENSIS  
TEXTULARIA SEMIALATA  
TROCHAMMINA SQUAMATA  
ROTALIAMMINA CHITINOSA  
GAUDRYINA RUGULOSA  
CLAVULINA MULTICAMERATA  
CLAVULINA PACIFICA  
PLANISPIRINELLA EXIGUA  
EDENTOSTOMINA CULTRATA  
EDENTOSTOMINA DURRANDII  
EDENTOSTOMINA RUPERTIANA  
WIESNERELLA AURICULATA  
NUBECULINA DIVARICATA ADVENA  
NODOBACULARIELLA JAPONICA  
VERTEBRALINA STRIATA  
QUINQUELOCULINA ANGUINA ARENATA  
Q. BIDENTATA SUBAGGLUTINATA  
QUINQUELOCULINA BIDENTATA S.S.  
QUINQUELOCULINA BERTHELOTIANA  
QUINQUELOCULINA CRASSICARINATA  
QUINQUELOCULINA CURTA  
QUINQUELOCULINA PISTORQUAEATA  
QUINQUELOCULINA GRANULOCOSTATA  
QUINQUELOCULINA LAMARCKIANA S.S.  
Q. LAMARCKIANA QUEENSLANDICA  
QUINQUELOCULINA NEOSTRIATULA  
QUINQUELOCULINA OBLONGA S.S.  
Q. OBLONGA INCISA  
Q. OBLONGA SEGERSI  
Q. OBLONGA TRANSVERSE STRIATA  
Q. OBLONGA EBURNEA  
Q. OBLONGA LIZARDI  
QUINQUELOCULINA PITTENSIS  
Q. POYANA CARINATA  
QUINQUELOCULINA PSEUDORETICULATA

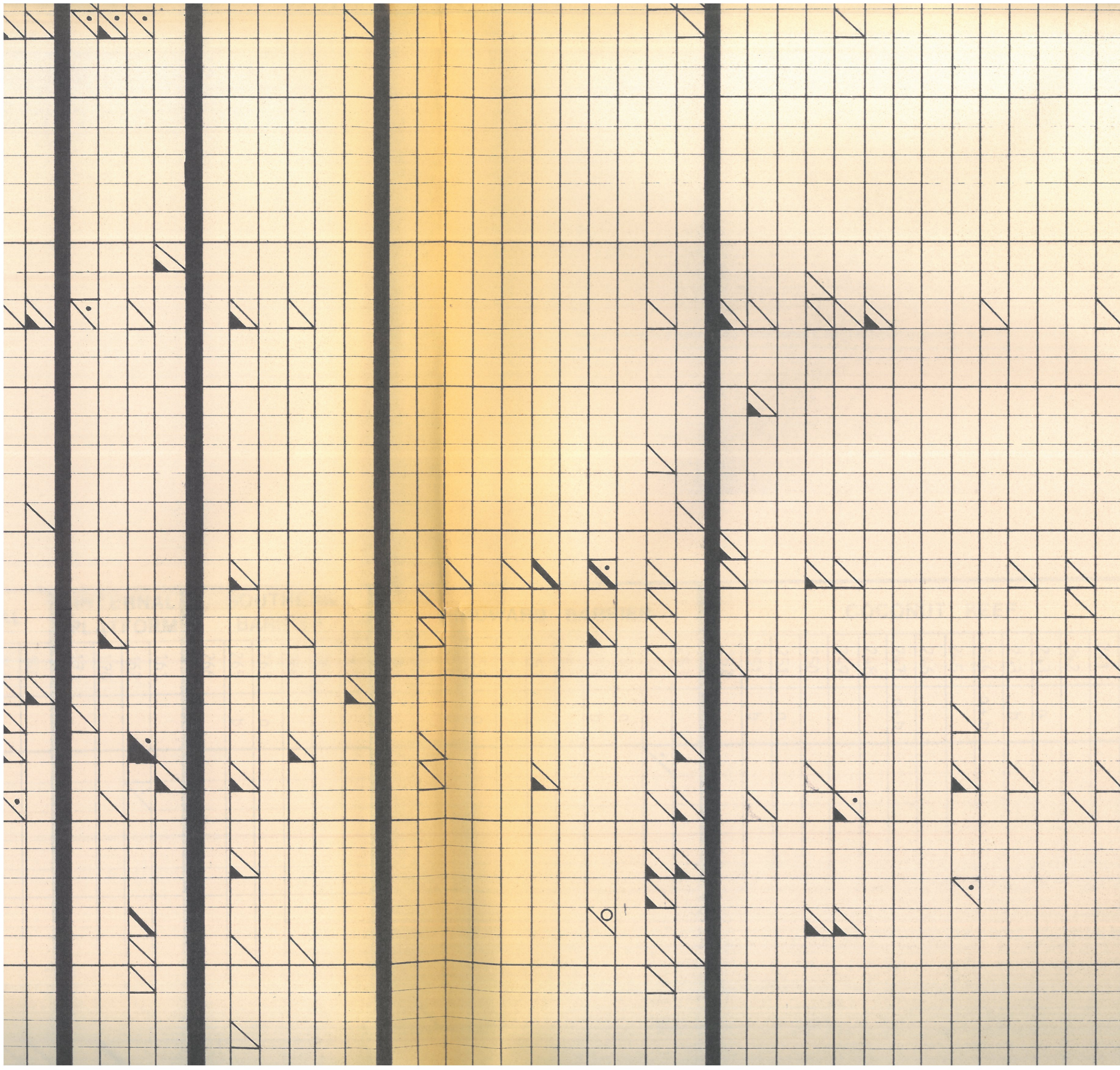




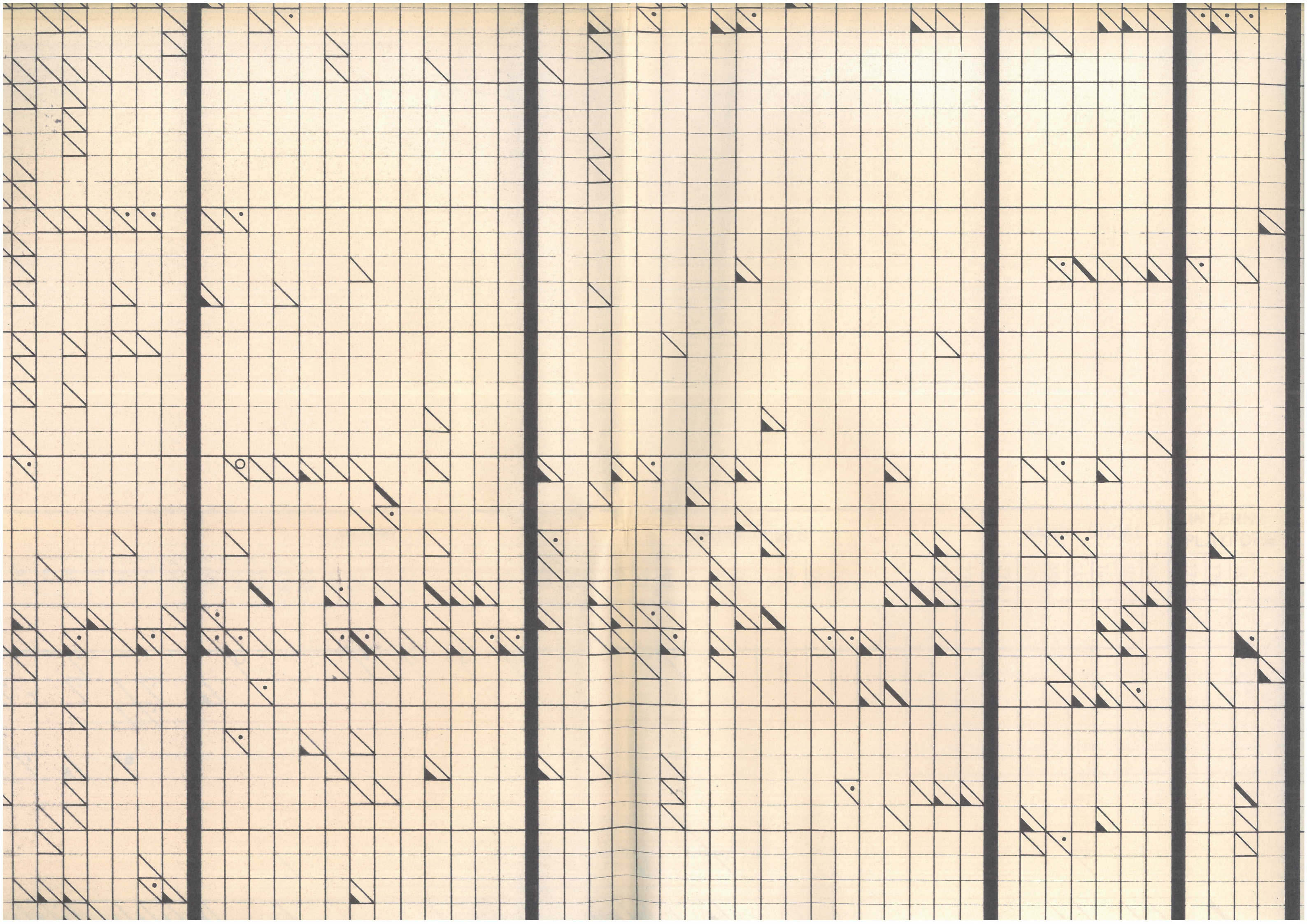
QUINQUELOCULINA BIDENTATA S.S.
QUINQUELOCULINA BERTHELOTIANA
QUINQUELOCULINA CRASSICARINATA
QUINQUELOCULINA CURTA
QUINQUELOCULINA PISTORQUAEATA
QUINQUELOCULINA GRANULOCOSTATA
QUINQUELOCULINA LAMARCKIANA S.S.
Q. LAMARCKIANA QUEENSLANDICA
QUINQUELOCULINA NEOSTRIATULA
QUINQUELOCULINA OBLONGA S.S.
Q. OBLONGA INCISA
Q. OBLONGA SEGERSI
Q. OBLONGA TRANSVERSE STRIATA
Q. OBLONGA EBURNEA
Q. OBLONGA LIZARDI
QUINQUELOCULINA PITTENSIS
Q. POEYANA CARINATA
QUINQUELOCULINA PSEUDORETICULATA
QUINQUELOCULINA QUINQUECARINATA
QUINQUELOCULINA TROPICALIS
QUINQUELOCULINA MONTYI
MASSILINA CORRUGATA
MASSILINA INAEQUALIS
MASSILINA SUBRUGOSA
PSEUDOMASSILINA AUSTRALIS S.S.
P. AUSTRALIS RETICULATA
P. AUSTRALIS MACILENTA
PYRGO DENTICULA
PYRGO DENTICULA STRIOLATA
PYRGO LUNDGRENII
SPIROLOCULINA COMMUNIS S.S.
S. COMMUNIS ATTENUATA
SPIROLOCULINA CORRUGATA
SPIROLOCULINA FOVEOLATA
SPIROLOCULINA RUGOSA CURVATURA
SPIROLOCULINA SAMOAENSIS
S. SAMOAENSIS APERTA

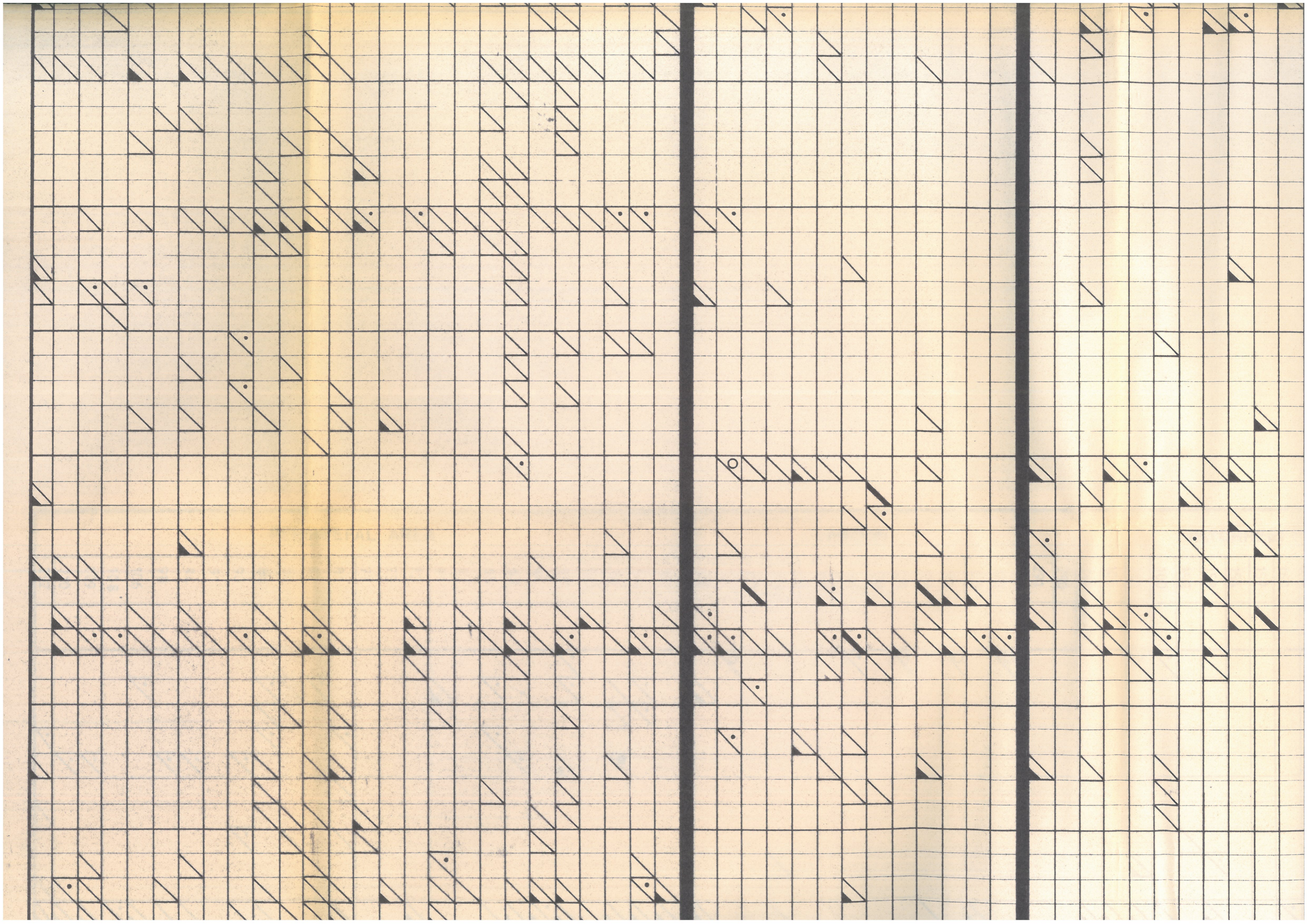




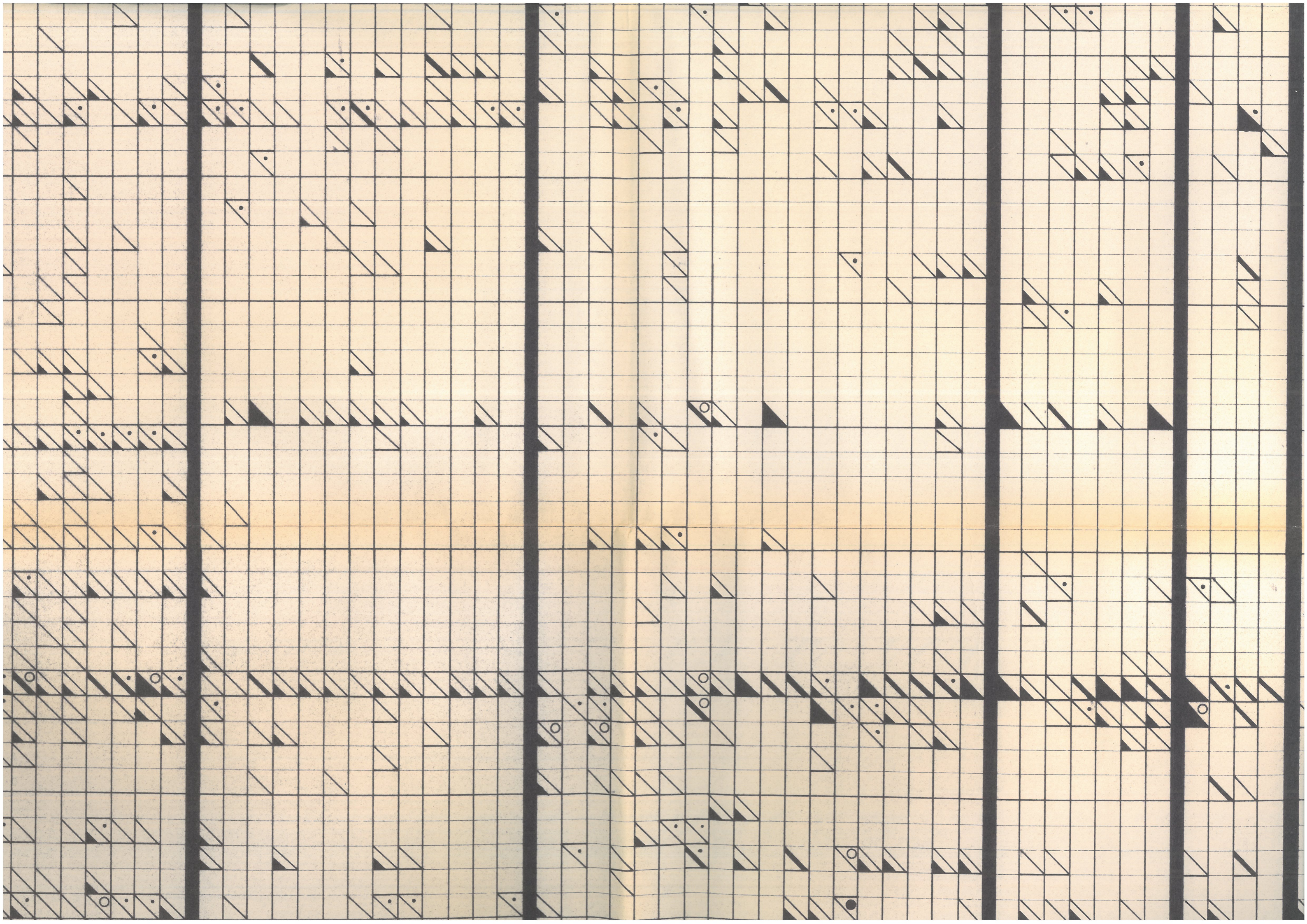


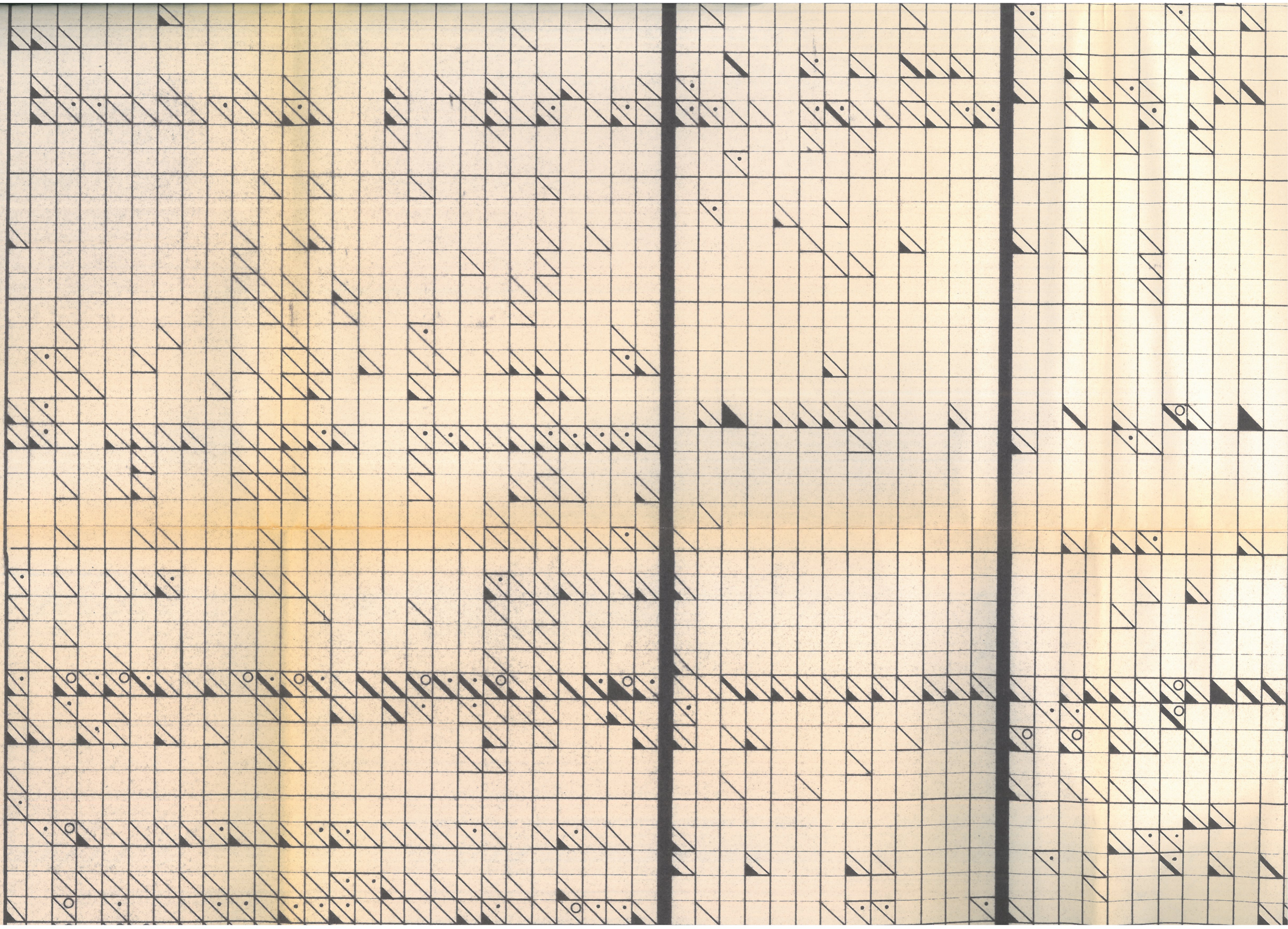
- MASSILINA INAEQUALIS
- MASSILINA SUBRUGOSA
- PSEUDOMASSILINA AUSTRALIS S.S.
- P. AUSTRALIS RETICULATA
- P. AUSTRALIS MACILENTA
- PYRGO DENTICULA
- PYRGO DENTICULA STRIOLATA
- PYRGO LUNDGRENII
- SPIROLOCULINA COMMUNIS S.S.
- S. COMMUNIS ATTENUATA
- SPIROLOCULINA CORRUGATA
- SPIROLOCULINA FOVEOLATA
- SPIROLOCULINA RUGOSA CURVATURA
- SPIROLOCULINA SAMOAENSIS
- S. SAMOAENSIS APERTA
- S. SAMOAENSIS ACESCATA
- SPIROSIGMOILINA PARRI
- TRILOCULINA COSTIFERA
- TRILOCULINA EARLANDI
- TRILOCULINA IRREGULARIS
- TRILOCULINA BICARINATA
- TRILOCULINA LINNEIANA S.S.
- T. LINNEIANA SUBGRANULATA
- TRILOCULINA LITTORALIS
- TRILOCULINA TRIGONULA S.S.
- T. TRIGONULA TRICARINATA
- T. TRIGONULA BERTHELINIANA
- T. TRIGONULA TERQUEMIANA
- MILIOLINELLA ALBATROSSI
- MILIOLINELLA BARAGWANATHI
- MILIOLINELLA AUSTRALIS S.S.
- M. AUSTRALIS CIRCULARIS
- M. AUSTRALIS LABIOSA
- M. AUSTRALIS BRADYI
- AMMOMASSILINA ALVEOLINIFORMIS
- HAUERINA CIRCINATA
- HAUERINA FRAGILISSIMA



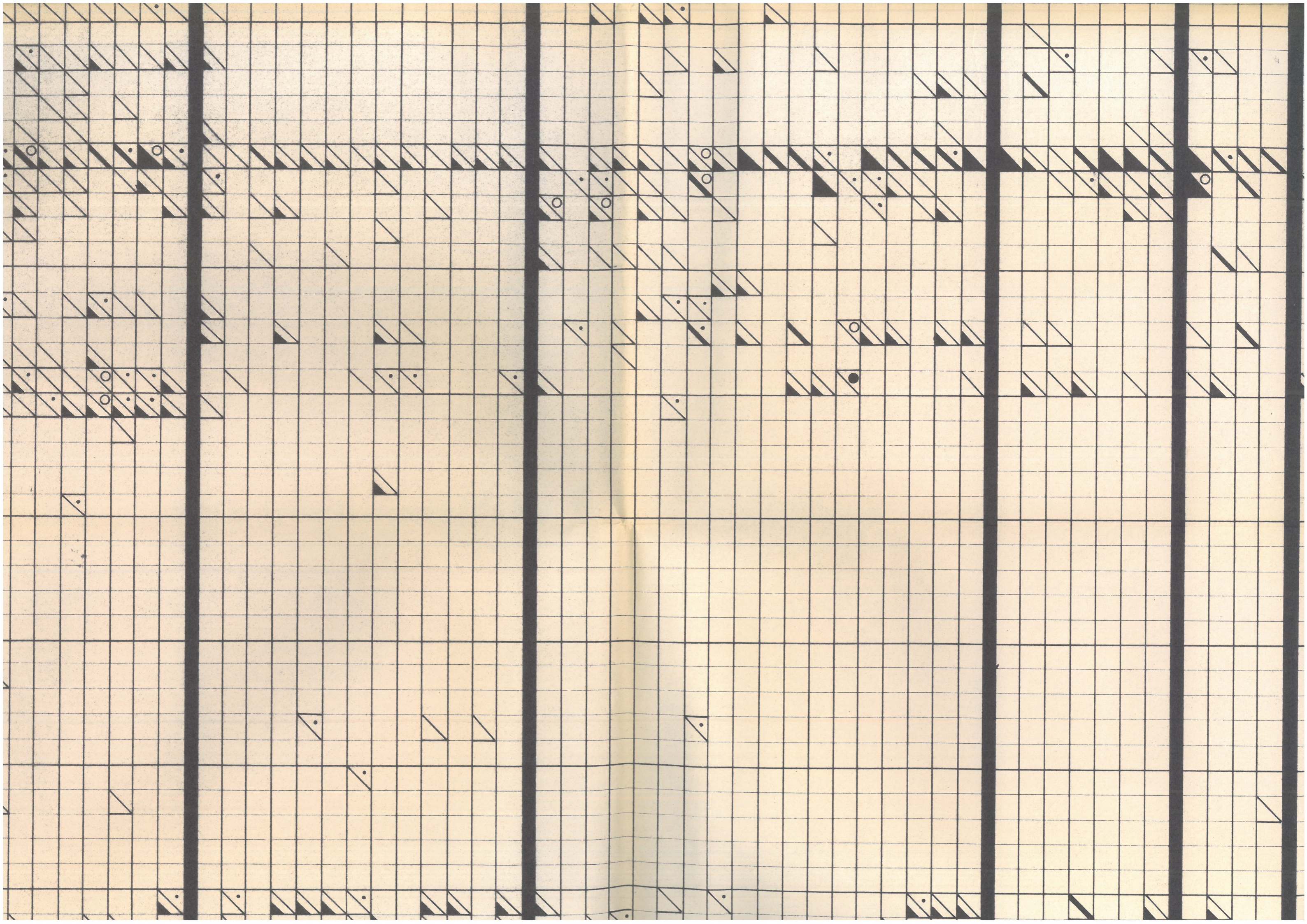


TRILOCULINA LINNEIANA S.S.  
T. LINNEIANA SUBGRANULATA  
TRILOCULINA LITTORALIS  
TRILOCULINA TRIGONULA S.S.  
T. TRIGONULA TRICARINATA  
T. TRIGONULA BERTHÉLINIANA  
T. TRIGONULA TERQUEMIANA  
MILIOLINELLA ALBATROSSI  
MILIOLINELLA BARAGWANATHI  
MILIOLINELLA AUSTRALIS S.S.  
M. AUSTRALIS CIRCULARIS  
M. AUSTRALIS LABIOSA  
M. AUSTRALIS BRADYI  
AMMOMASSILINA ALVEOLINIFORMIS  
HAUERINA CIRCINATA  
HAUERINA FRAGILISSIMA  
HAUERINA PACIFICA  
PSEUDOHUERINA OCCIDENTALIS INVOLUTA  
PSEUDOHUERINA HOWELLI  
PSEUDOHUERINA ORIENTALIS  
HETERILLINA CRIBROSTOMA  
MILIOLA SUBLINEATA  
NEVILLINÀ CORONATA  
SCHLUMBERGERINA ALVEOLINIFORMIS  
ARTICULINA PACIFICA  
ARTICULINA QUEENSLANDICA  
MONALYSIDIUM POLITUM  
PENEROPLIS PERTUSUS S.S.  
P. PERTUSUS PLANATUS  
P. PERTUSUS ACICULARIS  
P. PERTUSUS ARIETINUS  
SORITES DISCOIDEUS  
SORITES ORBITOLITOIDES  
SORITES MARGINALIS  
SORITES ORBICULUS  
AMPHISORUS HEMPRICHII  
MARGINOPODA VERTERBALIS



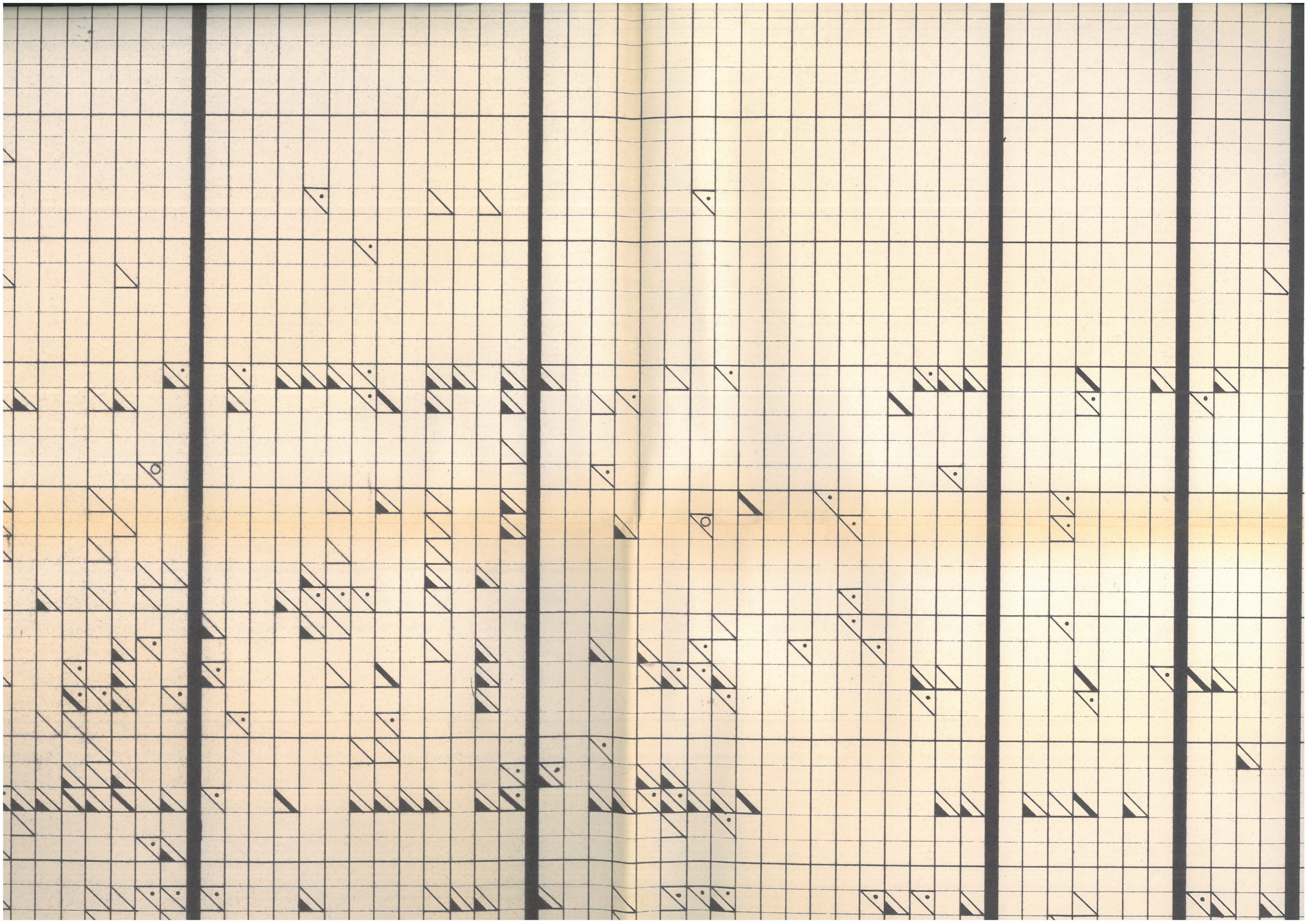


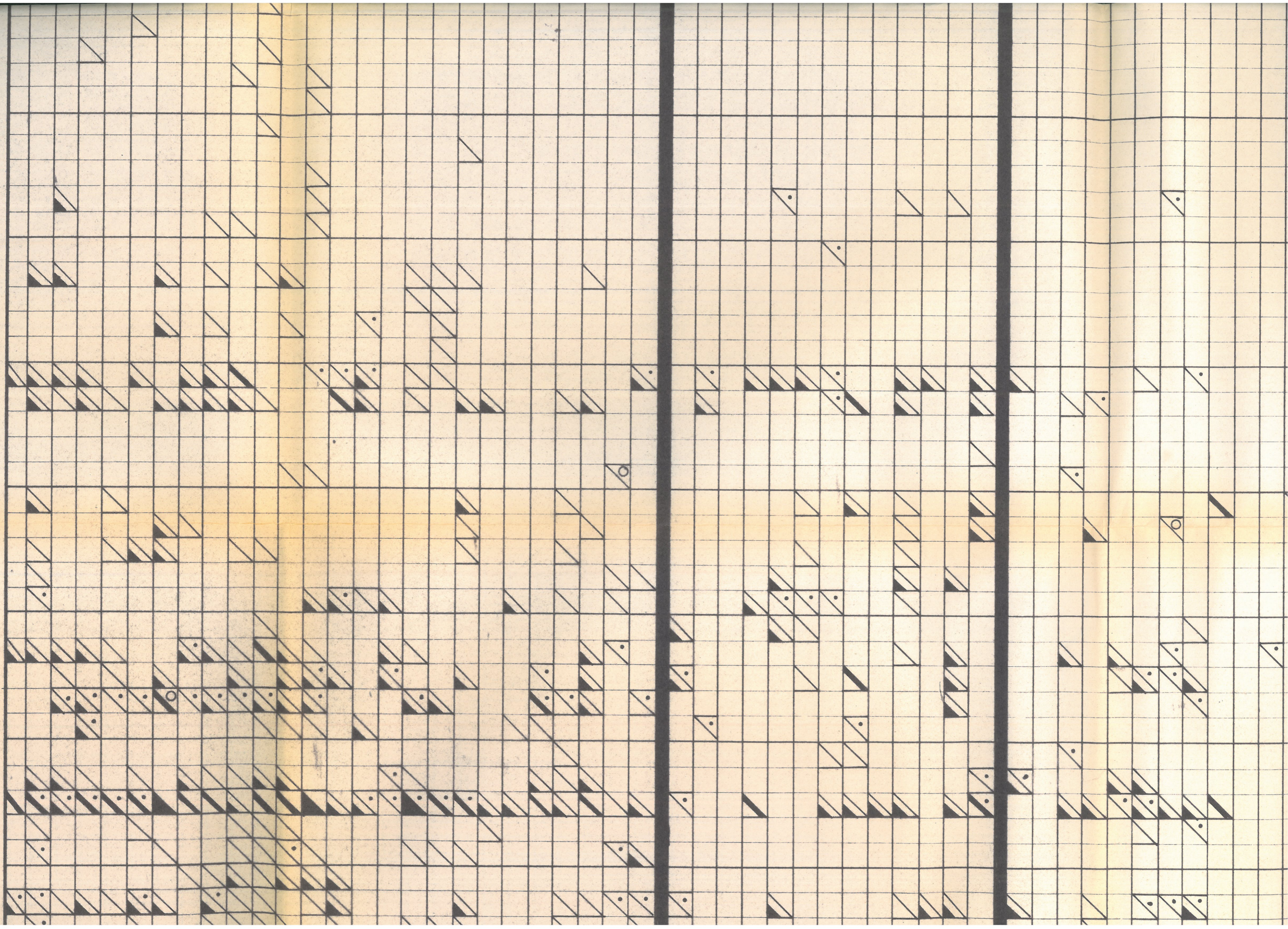
MILIOLA SUBLINEATA  
NEVILLINA CORONATA  
SCHLUMBERGERINA ALVEOLINIFORMIS  
ARTICULINA PACIFICA  
ARTICULINA QUEENSLANDICA  
MONALYSIDIUM POLITUM  
PENEROPLIS PERTUSUS S.S.  
P PERTUSUS PLANATUS  
P PERTUSUS ACICULARIS  
P PERTUSUS ARIETINUS  
SORITES DISCOIDEUS  
SORITES ORBITOLITOIDES  
SORITES MARGINALIS  
SORITES ORBICULUS  
AMPHISORUS HEMPRICHII  
MARGINOPORA VERTEBRALIS  
ALVEOLINELLA QUOYI  
NODOSARIA CATESBYI  
LAGENA GRACILLIMA  
LAGENA LAEVIS  
LAGENA STRUMOSA  
LAGENA SP 1  
LENTICULINA CF. L. AUSTRALIS  
GUTTULINA CF. G. IRREGULARIS  
GLANDULINA LAEVIGATA  
OOLINA CF. O. DESMOPHORA  
OOLINA HEXAGONA  
OOLINA CF. O. SPIRALIS  
FISSURINA CONTUSA  
FISSURINA LAEVIGATA  
FISSURINA MARGINATA  
FISSURINA MARGINATO-PERFORATA  
FISSURINA ORBIGNYANA S.S.  
F. ORBIGNYANA LACUNATA  
FISSURINA CF. F. SEMISTRIATA  
PARAFISSURINA PSEUDAURICULATA  
SPIRILLINA VIVIPARA S.S.



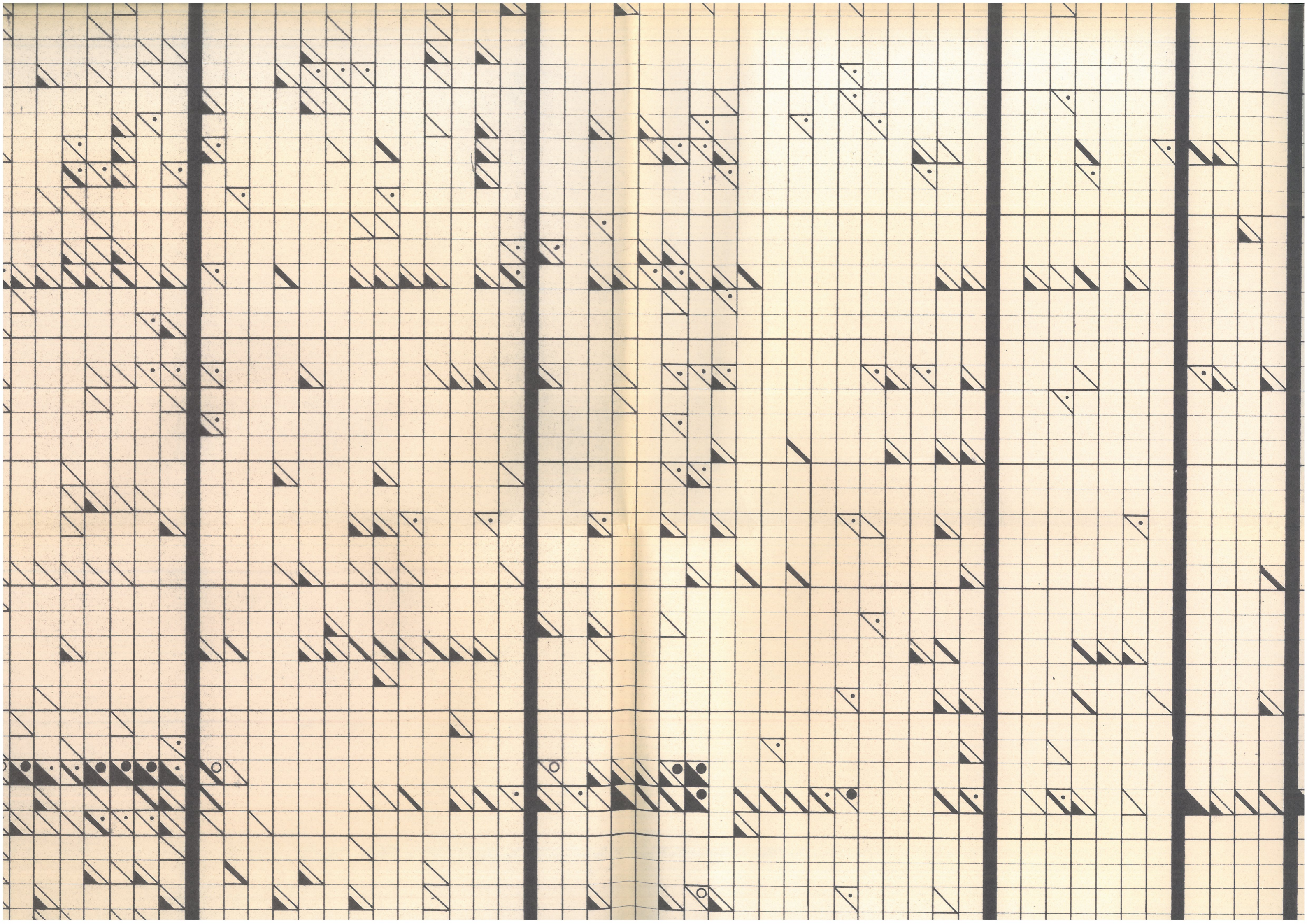


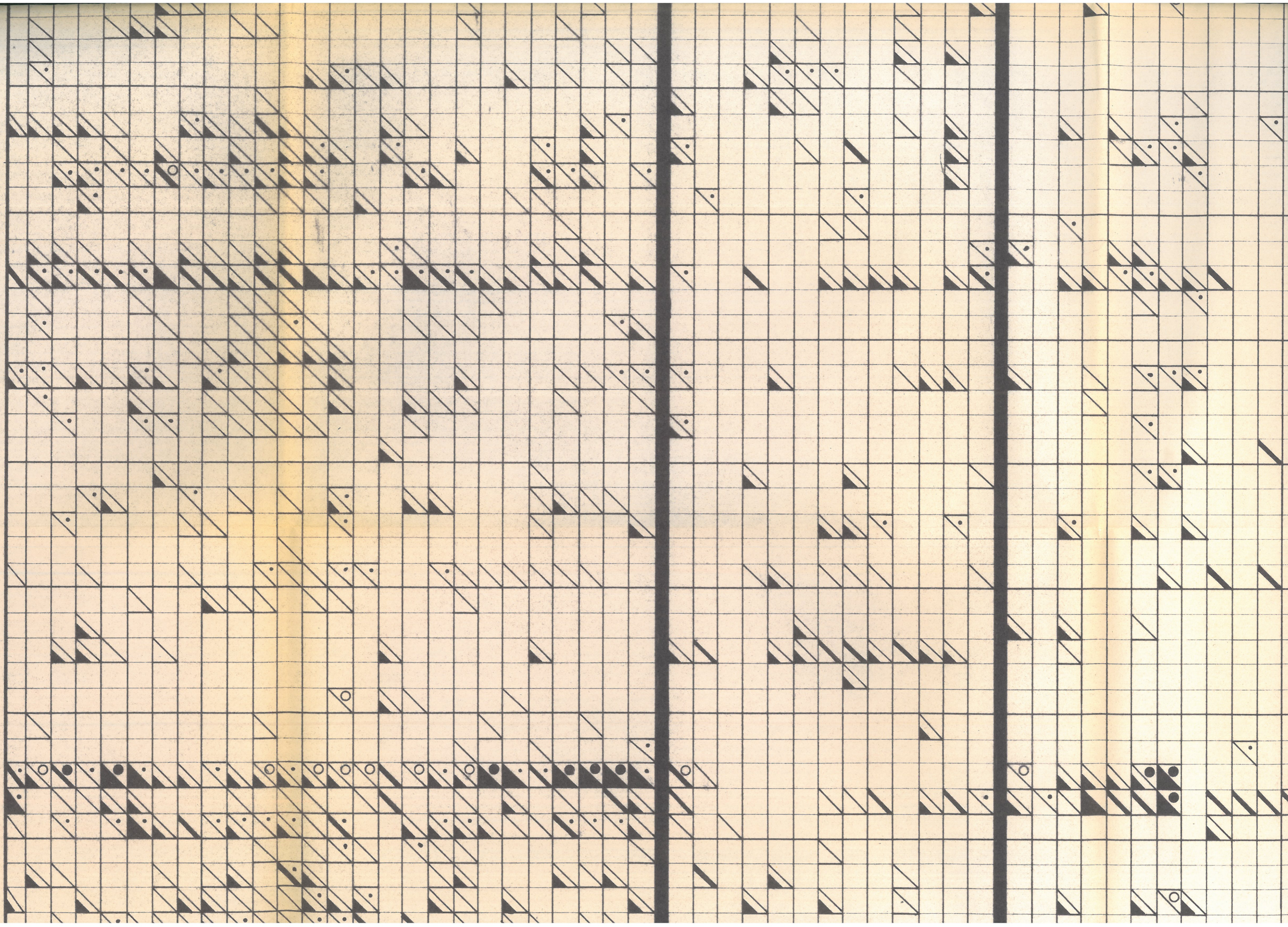
LAGENA SP 1  
LENTICULINA CF L. AUSTRALIS  
GUTTULINA CF G. IRREGULARIS  
GLANDULINA LAEVIGATA  
OOLINA CF O. DESMOPHORA  
OOLINA HEXAGONA  
OOLINA CF O. SPIRALIS  
FISSURINA CONTUSA  
FISSURINA LAEVIGATA  
FISSURINA MARGINATA  
FISSURINA MARGINATO-PERFORATA  
FISSURINA ORBIGNYANA S.S.  
F. ORBIGNYANA LACUNATA  
FISSURINA CF F. SEMISTRIATA  
PARAFISSURINA PSEUDAURICULATA  
SPIRILLINA VIVIPARA S.S.  
S. VIVIPARA REVERTENS  
SPIRILLINA SP 1  
SPIRILLINA SP 2  
ALLIATINA TRANSLUCENS  
BULIMINOIDES MADAGASCARIENSIS S.S.  
B. MADAGASCARIENSIS PARALLELA  
B. MADAGASCARIENSIS SPICATUS  
BULIMINOIDES WILLIAMSONIANUS  
BOLIVINA COMPACTA  
BOLIVINA RHOMBOIDALIS  
BOLIVINA SPINEA  
BRIZALINA PACIFICA  
BRIZALINA STRIATULA  
BRIZALINA CONVALLARIA  
RECTOBOLIVINA RAPHANA  
MIMOSINA ECHINATA  
REUSSELLA SIMPLEX  
TRIMOSINA MILLETTI MULTISPINATA  
SIPHOUVIGERINA AMPULLACEA  
SIPHOGENERINA VIRGULA  
NEOCONORBINA TERQUEMI

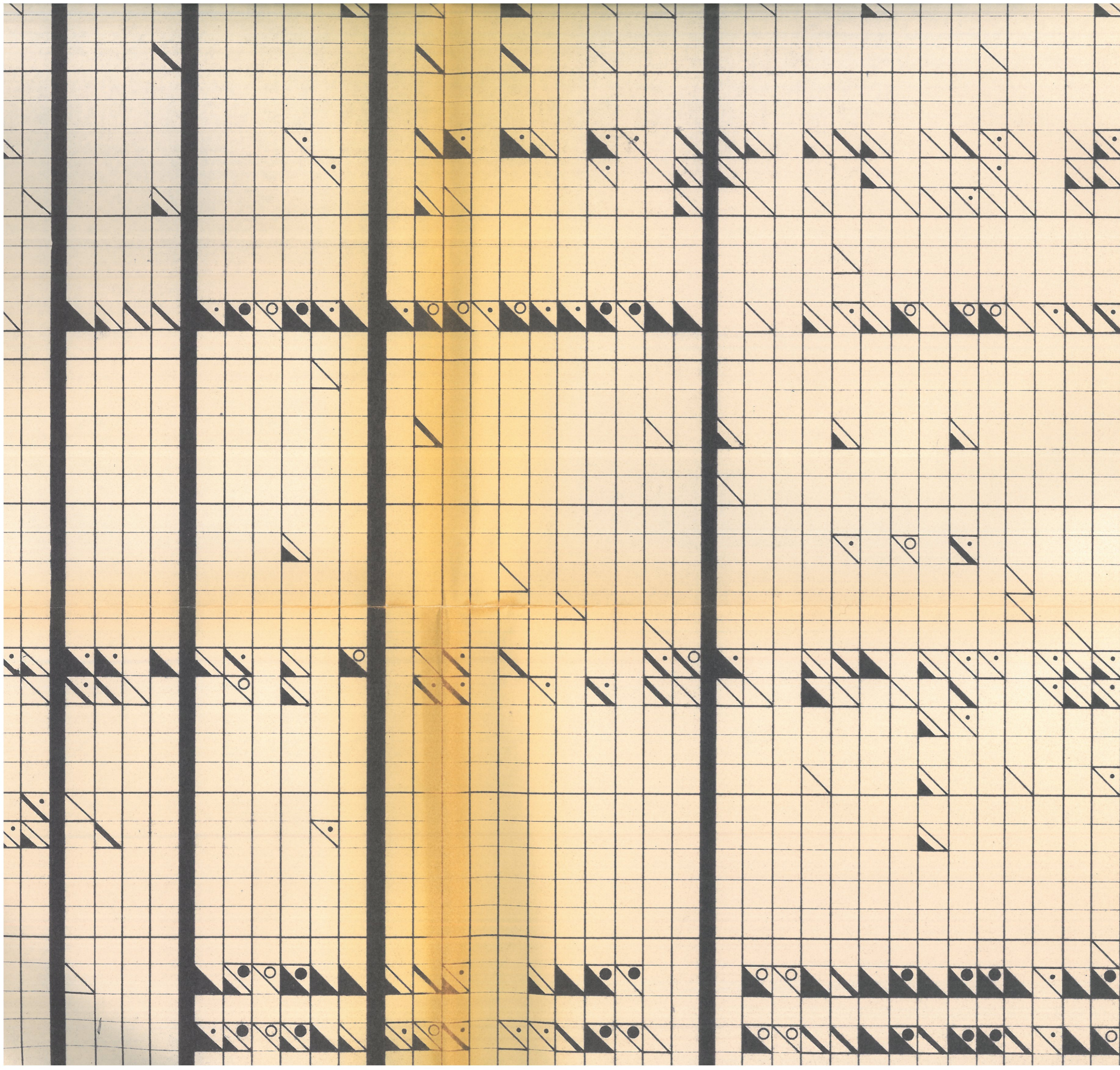




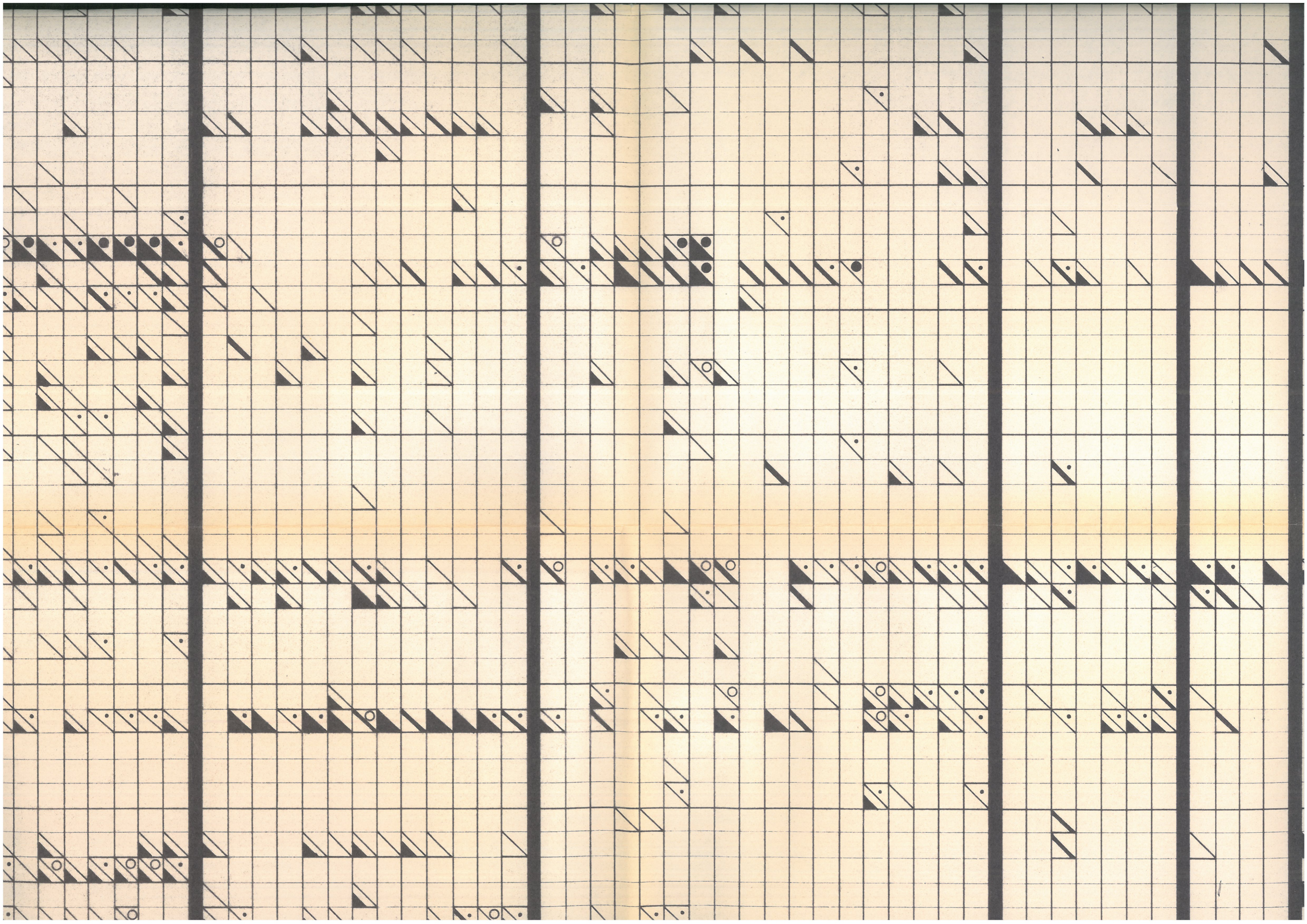
B. MADAGASCARIENSIS PARALLELA
B. MADAGASCARIENSIS SPICATUS
BULIMINOIDES WILLIAMSONIANUS
BOLIVINA COMPACTA
BOLIVINA RHOMBOIDALIS
BOLIVINA SPINEA
BRIZALINA PACIFICA
BRIZALINA STRIATULA
BRIZALINA CONVALLARIA
RECTOBOLIVINA RAPHANA
MIMOSINA ECHINATA
REUSSELLA SIMPLEX
TRIMOSINA MILLETTI MULTISPINATA
SIPHOVIGERINA AMPULLACEA
SIPHOGENERINA VIRGULA
NEOCONORBINA TERQUEMI
NEOCONORBINA SP. AFF. N. PACIFICA
CANCRIS AURICULUS
DISCORBIS MIRA
DISCORBIS SUBVESICULARIS
GAVELINOPSIS SP. AFF. G. LOBATULUS
ROSALINA ORIENTALIS
NEOEPONIDES SP. AFF. N. BERTHELOTIANUS
POROEPONIDES LATERALIS CRIBROREPANDUS
POROEPONIDES LATERALIS S.S.
GLABRATELLA HEXACAMERATA
GLABRATELLA PATELLIFORMIS
ANGULODISCORBIS QUADRANGULARIS
EPISTOMAROIDES POLYSTOMELLOIDES
SIPHONINA TUBULOSA
SIPHONINOIDES ECHINATUS
AMPHISTEGINA LESSONII
AMPHISTEGINA LOBIFERA
AMPHISTEGINA PAPILLOSA
AMPHISTEGINA RADIATA
PLANULINA PLANA
CIBICIDES ARAVAENSIS

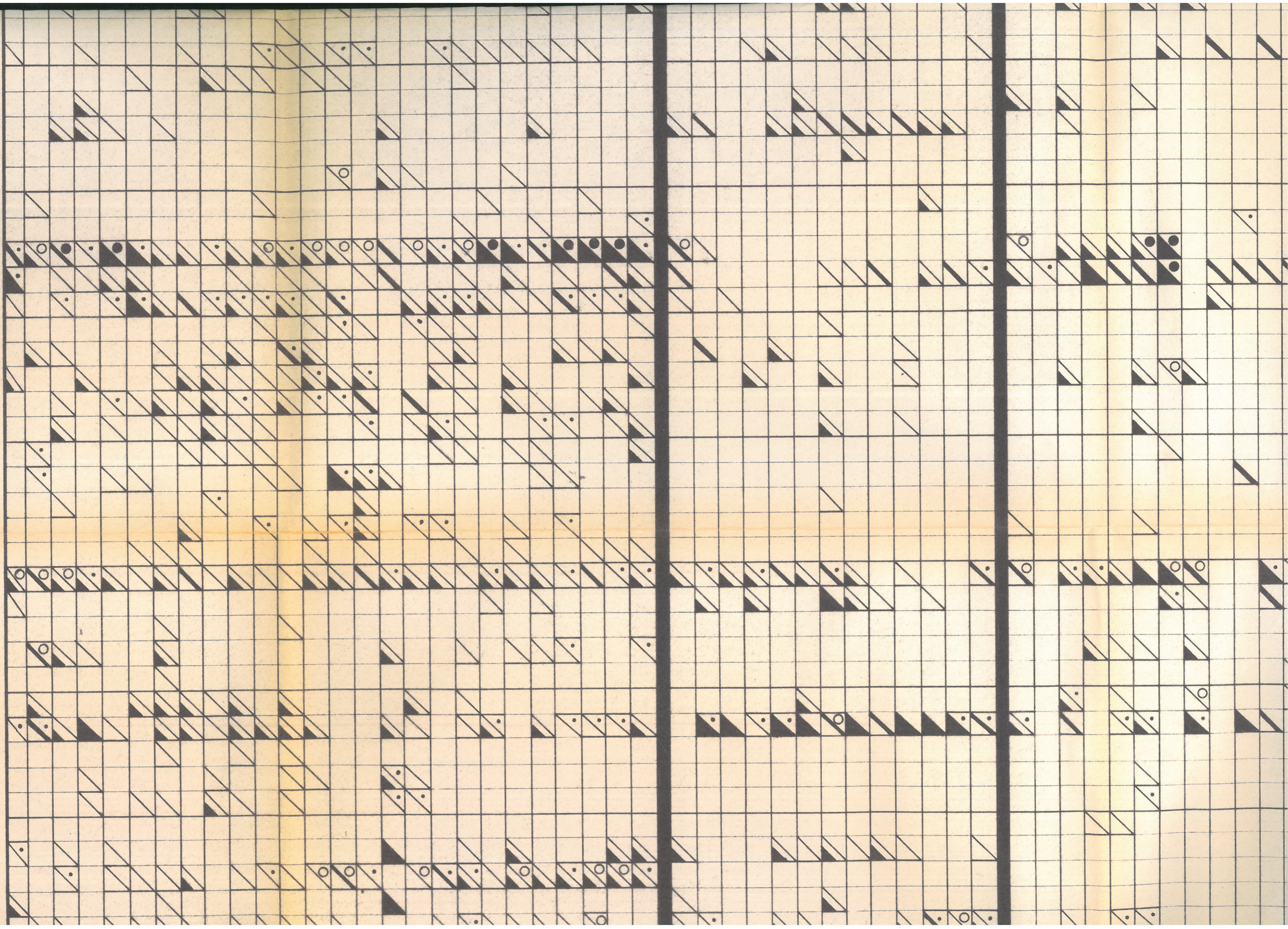


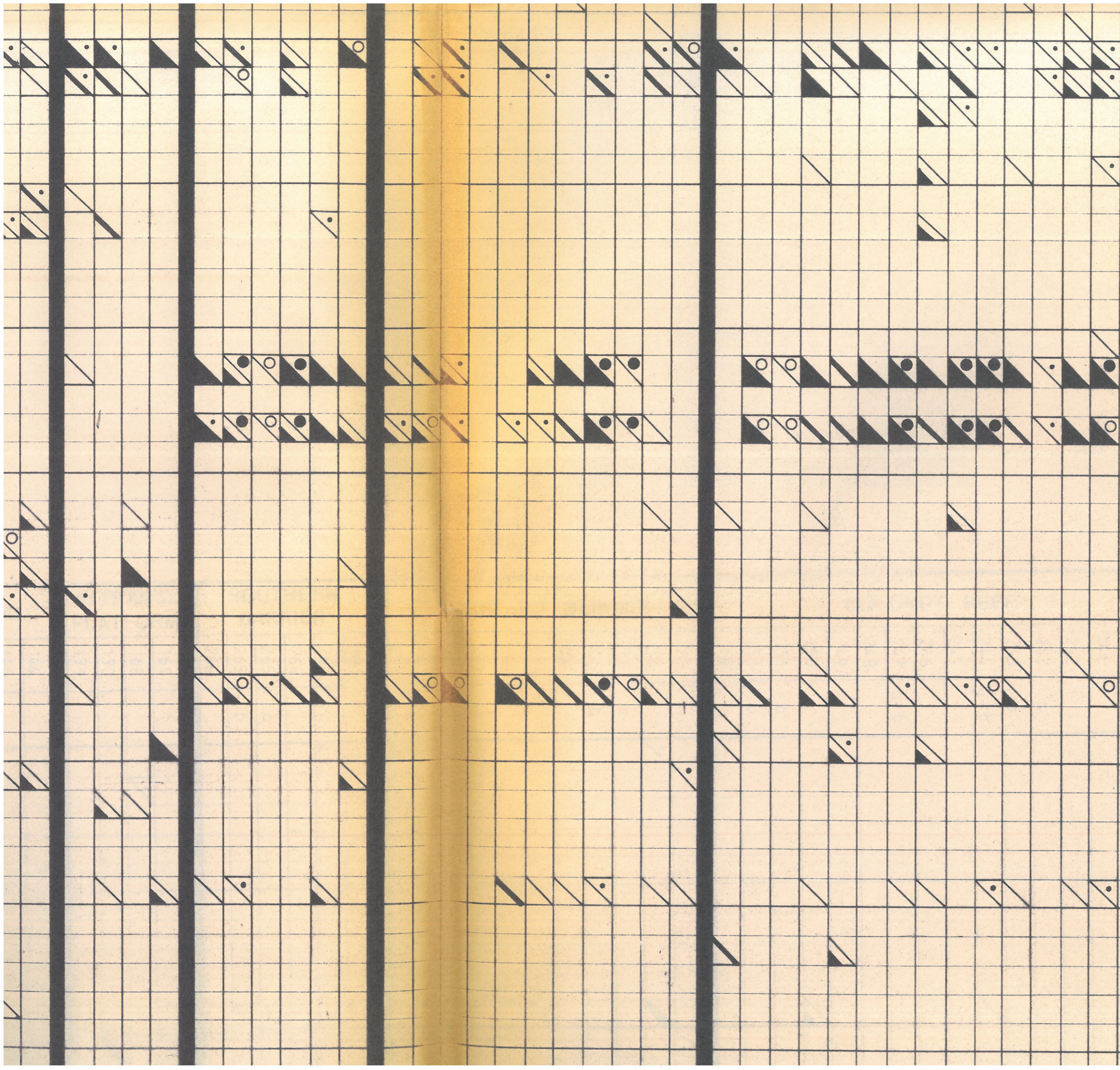




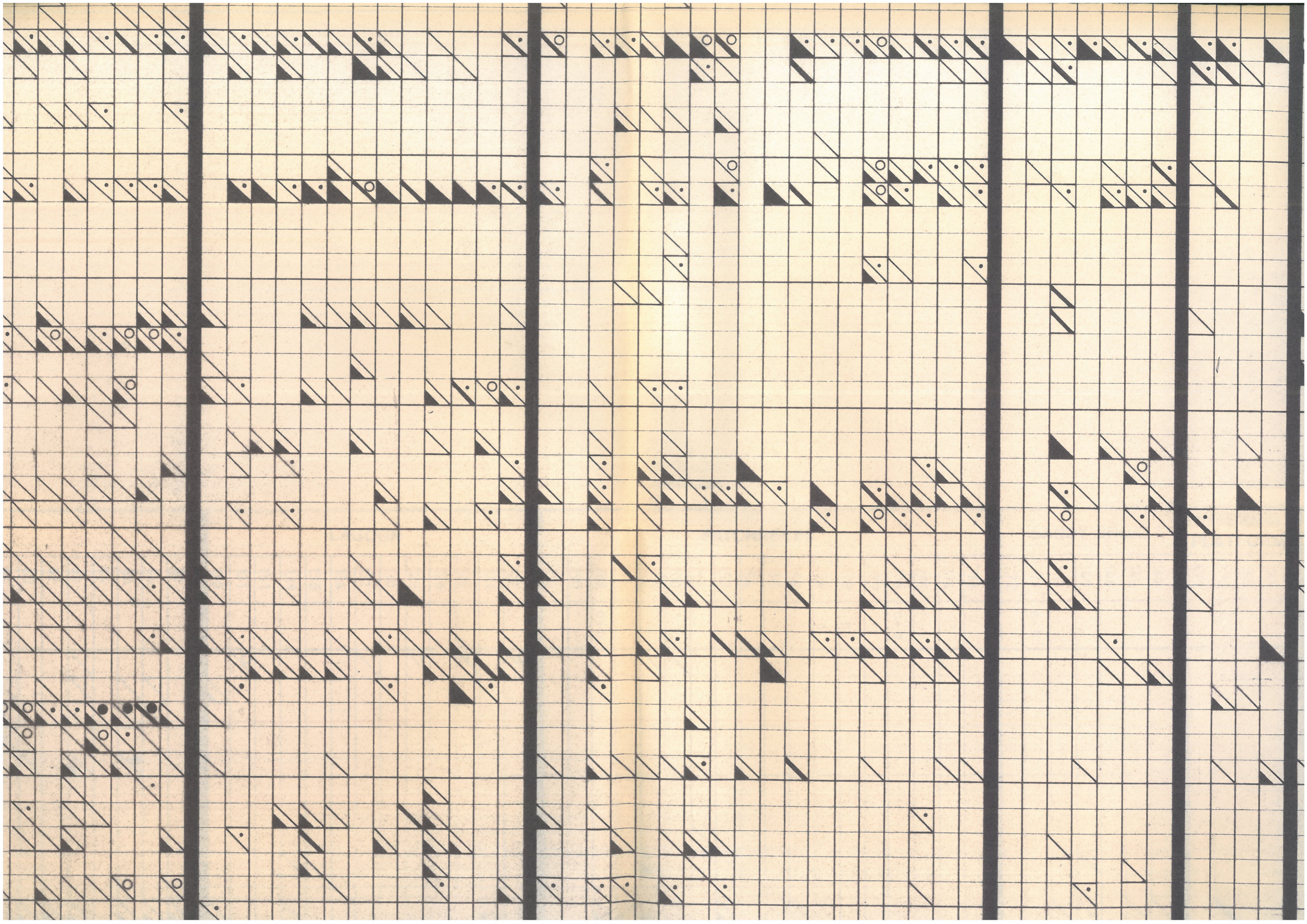
- RUSALINA ORIENTALIS
- NEOEPONIDES SP. AFF. N. BERTHELOTIANUS
- POROEPONIDES LATERALIS CRIBROREPANDUS
- POROEPONIDES LATERALIS S.S.
- GLABRATELLA HEXACAMERATA
- GLABRATELLA PATELLIFORMIS
- ANGULODISCORBIS QUADRANGULARIS
- EPISTOMAROIDES POLYSTOMELLOIDES
- SIPHONINA TUBULOSA
- SIPHONINOIDES ECHINATUS
- AMPHISTEGINA LESSONII
- AMPHISTEGINA LOBIFERA
- AMPHISTEGINA PAPILLOSA
- AMPHISTEGINA RADIATA
- PLANULINA PLANA
- CIBICIDES ARAVAENSIS
- CIBICIDES LOBATULUS
- CIBICIDES PSEUDOLOBATULUS
- CARIBBEANELLA ELATENSIS
- PLANORBULINA ACERVALIS
- PLANORBULINELLA LARVATA
- GYPSINA GLOBULUS
- CYMBALOPORELLA TABELLAIFORMIS
- CYMBALOPORETTA GR. BRADYI
- CYMBALOPORETTA SQUAMMOSA
- ASTEROROTALIA GAIMAROI
- PARAROTALIA VENUSTA
- ROTALIA ? SP.
- AMMONIA CONVEXA
- AMMONIA TEPIDA
- AMMONIA SP. AFF. A. MOROENSIS
- MONSPELIENSINA JAPONICA
- MONSPELIENSINA DUBUISSONI
- CALCARINA CALCAR
- CALCARINA SPENGLERI S.S.
- CALCARINA SPENGLERI MAYORI
- BACULOGYPSINA SPHAERULATA

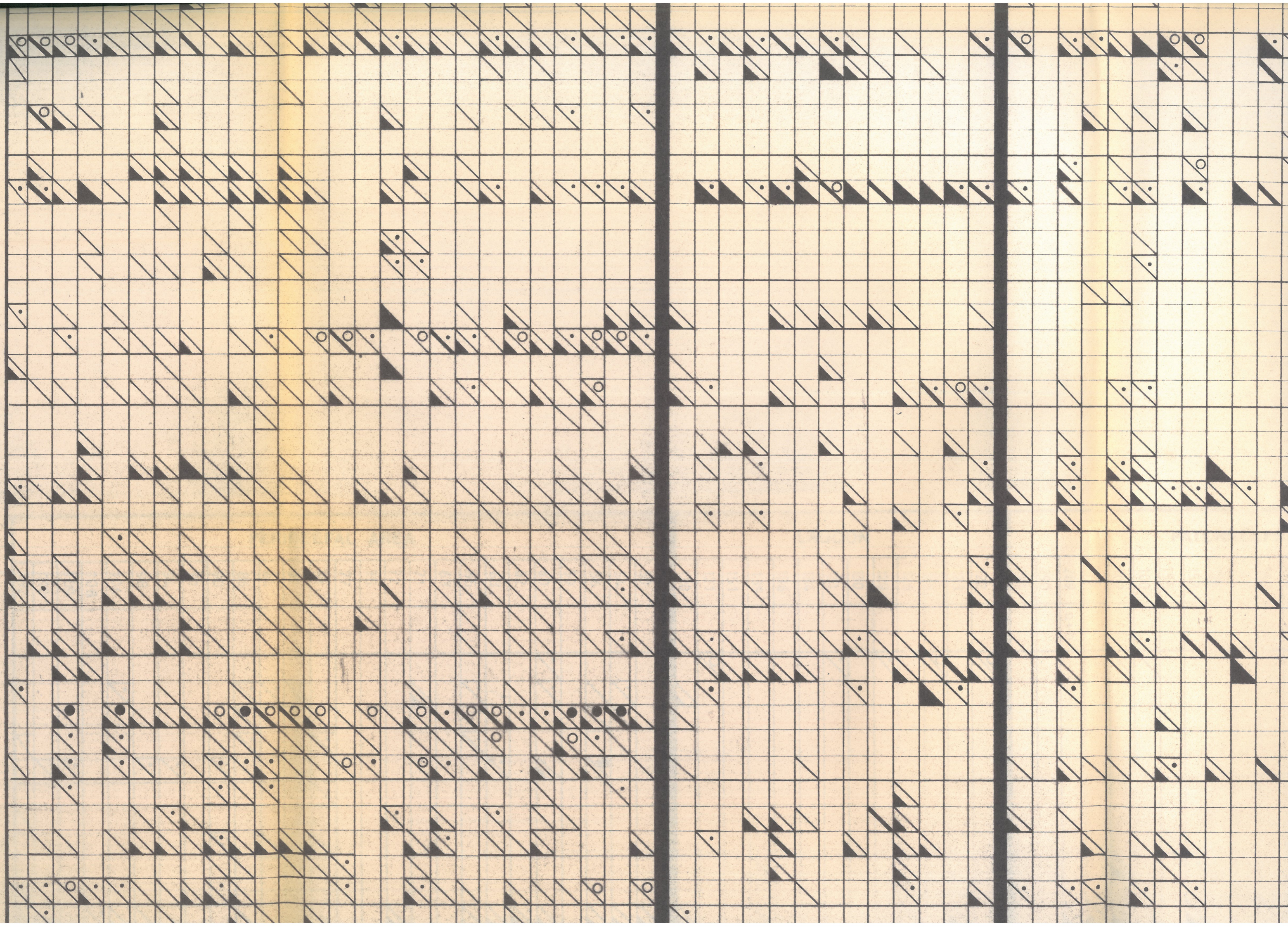


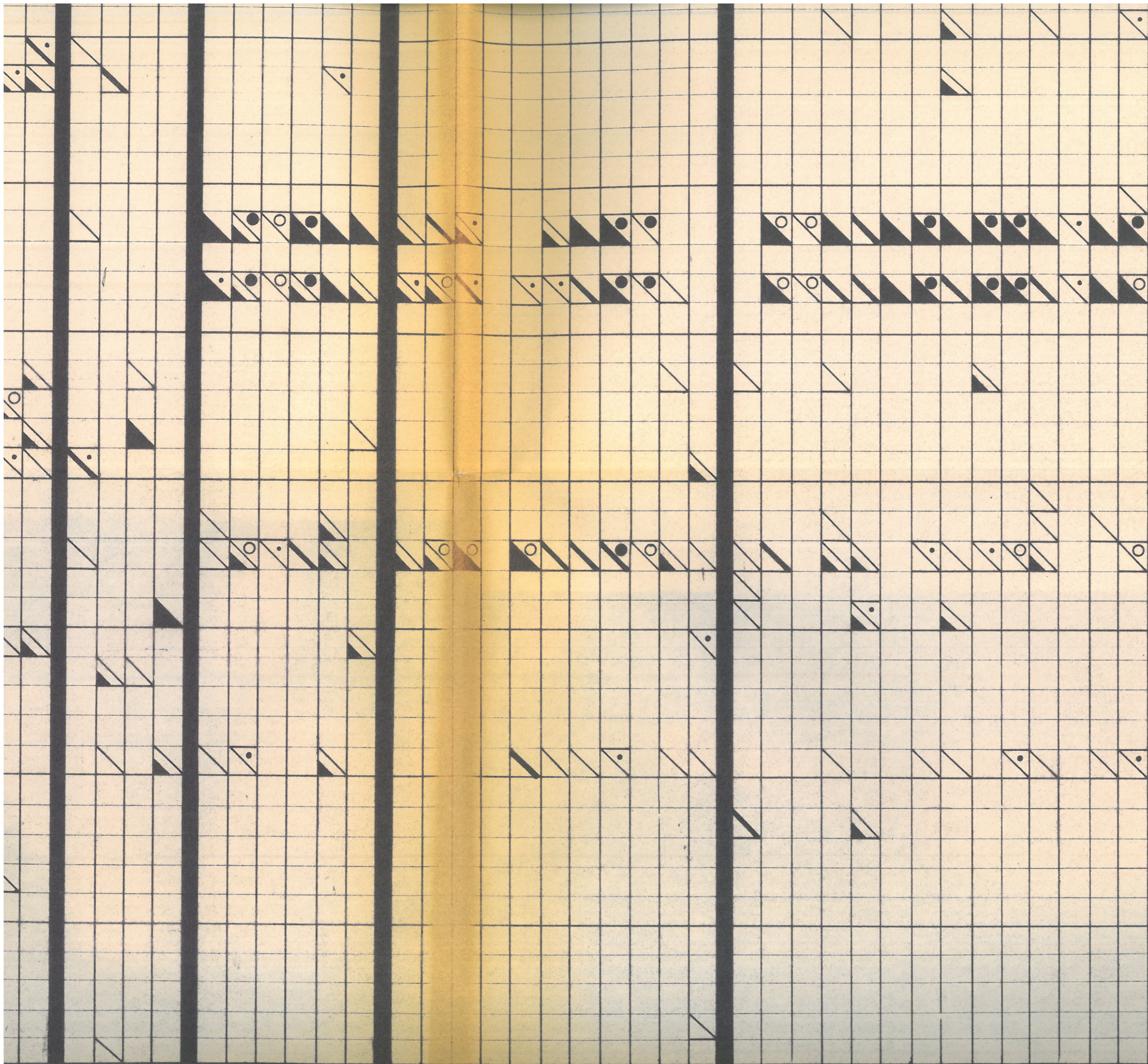




- CYMBALOPORELLA TABELLAEFORMIS
- CYMBALOPORETTA GR. BRADYI
- CYMBALOPORETTA SQUAMMOSA
- ASTEROROTALIA GAIMAROI
- PARAROTALIA VENUSTA
- ROOTALIA ? SP.
- AMMONIA CONVEXA
- AMMONIA TEPIDA
- AMMONIA SP. AFF. A. MOROENSIS
- MONSPELIENSINA JAPONICA
- MONSPELIENSINA DUBUISSONI
- CALCARINA CALCAR
- CALCARINA SPENGLERI S.S.
- CALCARINA SPENGLERI MAYORI
- BACULOGYPSINA SPHAERULATA
- PARRELLINA HISPIDULA
- PARRELLINA PACIFICA
- PARRELLINA MILLETTI
- HAYNESINA DEPRESSULA
- ELPHIDIUM ADVENUM S.S.
- OZAWAIA (?) TONGAENSIS
- ELPHIDIUM BATAVUM
- ELPHIDIUM CRATICULATUM
- ELPHIDIUM CRISPUM
- ELPHIDIUM JENSENI
- ELPHIDIUM LIMBATUM
- ELPHIDIUM POEYANUM
- ELPHIDIUM GALERAENSIS
- OPERCULINA ~~AMMONOIDES~~
- NUMMULITES CUMINGII
- HETEROSTEGINA DEPRESSA
- FURSENKOINA PAUCILOCULATA
- SIGMAVIRGINULA TORTUOSA
- LOXOSTOMUM (?) LIMBATUM
- GLOBOCASSIDULINA ORIANGULATA
- NONION (?) GR. SCAPHUM







- ROVALIA ? SP.
- AMMONIA CONVEXA
- AMMONIA TEPIDA
- AMMONIA SP. AFF. A. MOROENSIS
- MONSPELIENSINA JAPONICA
- MONSPELIENSINA DUBUISSONI
- CALCARINA CALCAR
- CALCARINA SPENGLERI S.S.
- CALCARINA SPENGLERI MAYORI
- BACULOGYPHINA SPHAERULATA
- PARRELLINA HISPIDULA
- PARRELLINA PACIFICA
- PARRELLINA MILLETTI
- HAYNESINA DEPRESSULA
- ELPHIDIUM ADVENUM S.S.
- OZAWAIA (?) TONGAENSIS
- ELPHIDIUM BATAVUM
- ELPHIDIUM CRATICULATUM
- ELPHIDIUM CRISPUM
- ELPHIDIUM JENSENI
- ELPHIDIUM LIMBATUM
- ELPHIDIUM POEYANUM
- ELPHIDIUM GALERAENSIS
- OPERCULINA AMMONOIDES
- NUMMULITES CUMINGII
- HETEROSTEGINA DEPRESSA
- FURSENKOINA PAUCILOCOLATA
- SIGMAVIRGINULA TORTUOSA
- LOXOSTOMUM (?) LIMBATUM
- GLOBOCASSIDULINA ORIANGULATA
- NONION (?) GR. SCAPHUM
- NONION SUBTURGIDUM
- NONIONELLA AMPLILABRATA
- HETEROLEPA PRAECINCTA
- ANOMALINELLA ROSTRATA
- PLANCTON

