Gouvernement de la République du Sénégal
Délégation Générale
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RESULTATS DES OBSERVATIONS DE PHYSIQUE EFFECTUEES PENDANT LA CAMPAGNE DE PROSPECTION D'OEUFS ET LARVES DE SARDINELLES

L.A. 7416 JUIN 1974

PAR
J.P. REBERT ET M. PRIVE

TOUT OU PARTIE DE CE DOCUMENT NE PEUT ETRE CITE OU UTILISE SANS AUTORISATION PREALABLE DE L'AUTEUR.

OFFICE DE LA RECHERCHE SCIENTIFIQUE ET TECHNIQUE OUTRE-MER

CENTRE DE RECHERCHES OCEANOGRAPHIQUES DE DAKAR - THIAROYE

ARCHIVE N°6
AOUT 1974

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Afin d'obtenir une information plus complète sur l'environnement dans les zones et l'époque de reproduction des sardinelles, un certain nombre de mesures de paramètres physiques ont été réalisées au cours de l'une des campagnes de prospection effectuée en 1974.

Cette campagne a couvert la zone comprise entre la Presqu'île du Cap Vert et le parallèle 13°25'N jusqu'à une distance de 50 milles de la côte environ.

Trois sorties de trois jours chacune ont eu lieu au cours desquelles un réseau de stations a été repété, stations dont les numéros et les positions sont indiquées dans la figure 1.

Chaque station comportait, outre le trait de filet à planoton, les mesures suivantes :

- Température et salinité de surface
- Bathythermogramme
- Transparence
- Chlorophylle "a" en surface pour la première phase
  à 5 m pour les deux autres.

les résultats de ces mesures sont consignés dans les tableaux IIa à IIc.

TOUT OU PARTIE DE CE DOCUMENT NE PEUT ETRE CITÉ OU UTILISÉ SANS AUTORISATION PRÉALABLE DE L'AUTEUR.

Sur chaque radiale d'autre part une station hydrologique complète a été réalisée sur les fonds de 40 à 50 m, comprenant la mesure des paramètres suivants au différents niveaux

Température, salinité, oxygène dissous
Chlorophylle "a" (1ère phase uniquement)
Courants (courantomètre Ekman)

les observations hydrologiques sont consignées dans les tableaux Ia à Ic.
Les observations de courant figurent dans le tableau III.
Les bathythermogrammes sont représentés par les planches 1 A à 1 E.

On a représenté en outre pour chacune des phases la distribution des isothermes et isohalines de surface (fig. 2 à 7) ainsi que celle des courants aux divers profondeurs (fig. 8 à 10).

Archive N° 6

Dakar, le 1er Août 1974

RESULTATS D'OBSERVATIONS HYDROLOGIQUES (1e Phase)

TABLEAU Ia

ST = 6
14°25' N - 17°20' W
5/6/74 - 23h 00

PROF (m)	T°C	S‰	O2 ml/l	Chla mg/m3
0	21.1	35.63	3.38	2.94
10	20.72	35.62	5.79	3.17
20	20.64	35.62	5.74	4.21
30	19.37	35.63	2.88	1.63
40	17.83	35.58	1.10	-

ST = 9
14°10' N - 17°17' W
6/6/74 - 06h 30

PROF (m)	T°C	S‰	O2 ml/m3	Chla mg/m3
0	21.3	35.61	5.76	3.11
10	20.37	35.60	4.44	4.25
20	19.40	35.62	2.68	7.04
30	18.13	35.57	1.04	3.46
40	18.13	35.56	0.96	2.47

ST = 14
13°55' N - 17°11' W
6/6/74 - 18h 35

0	23.2	35.69	6.08	0.98
10	22.26	35.62	6.19	1.99
20	20.04	35.57	3.49	1.05
30	18.48	35.58	0.77	1.55
37	18.45	35.57	0.53	2.74

ST = 15
13°40' N - 17°11' W
6/6/74 - 21h 55

0	22.7	35.59	5.61	0.69
10	22.40	35.57	5.67	0.36
20	19.65	35.61	2.90	0.67
30	19.08	35.58	1.36	0.35
37	19.04	35.57	1.16	0.28

ST = 20
13°25'N - 17°15' W
7/6/74 - 10h 05

0	23.4	35.58	5.29	0.35
10	23.26	35.58	5.34	0.86
20	20.42	35.68	3.61	0.78
30	19.76	35.61	1.70	0.31
40	19.73	35.60	1.53	0.32

RESULTATS D'OBSERVATIONS HYDROLOGIQUES (2e Phase)

TABLEAU Ib

ST = 29
14°25' N - 17°20' W
8/6/74 - 21h 45

PROF	T°C	S ‰	O2ml/l
0	23.4	35.72	5.82
10	23.01	35.66	5.84
20	20.81	35.69	3.91
30	19.31	35.58	1.30
40	19.29	35.57	1.08

ST = 32
14°10'N - 17°17' W
9/6/74 - 05h 25

PROF	T°C	S ‰	O2 ml/l
0	23.1	35.69	5.50
10	21.27	35.66	4.34
20	19.46	35.60	1.57
30	19.44	35.59	1.40
40	19.44	35.59	1.39

ST = 37
13°55'N - 17°11'W
9/6/74 - 17h 20

0	24.0	35.77	5.69
10	22.30	35.62	5.55
20	20.13	35.65	2.95
30	19.82	35.61	1.60
37	19.80	35.60	1.61

ST = 38
13°40' N - 17°11' W
9/6/74 - 21h 20

0	24.0	35.67	5.98
10	22.93	35.67	5.50
20	21.96	35.69	4.52
30	20.85	35.67	2.66
37	20.73	35.66	2.35

ST = 43
13°25' N - 17°15' W
10/6/74 - 10h 05

0	25.4	35.90	4.93
10	25.30	35.86	5.03
20	25.22	35.86	4.98
30	23.84	35.81	4.94
40	21.22	35.71	3.02

RESULTATS D'OBSERVATIONS HYDROLOGIQUES (3e Phase)

TABLEAU Io

ST = 52
14°25' N - 17°20' W
11/6/74 - 23h 00

PROF(m)	T°C	S‰	O2ml/l
0	23.3	35.68	5.19
8	22.02	35.76	4.89
18	19.74	35.67	2.98
28	19.31	35.64	2.11
38	18.99	35.63	1.82

ST = 55
14°10' N - 17°17' W
12/6/74 - 04h 55

PROF(m)	T°C	S‰	O2 ml/l
0	23.45	35.74	5.14
8	23.40	35.72	5.18
18	21.69	35.68	4.79
28	20.02	35.68	3.98
38	18.03	35.64	2.31

ST = 60
13°55' N - 17°11' W
12/6/74 - 16h 05

0	23.8	35.66	5.53
8	23.34	35.62	4.38
18	23.21	35.62	5.41
28	21.18	35.67	3.85
38	19.68	35.61	1.52

ST = 61
13°40' N - 17°11' W
12/6/74 - 19h 10

0	24.5	35.84	5.12
8	24.43	35.82	5.20
18	22.54	35.72	4.32
28	21.20	35.65	2.08

ST = 66
13°25' N - 17°15' W
13/6/74 - 06h 00

0	25.3	35.88	4.97
8	25.35	35.87	4.98
18	23.99	35.78	5.05
28	22.83	35.76	4.73
38	21.66	35.68	2.88

RESULTATS D'OBSERVATIONS DES BATHYTHERMOGRAPHES

ET COMPLEMENT D'OBSERVATIONS HYDROLOGIQUES

TABLEAU - IIa - 1e Phase

ST N°	DATE	HEURE	POSITIONS LAT. N	POSITIONS LONG. W	FOND (m)	BATHY N°	IMMER BT	PLAQUE BT N°	T°C Surf.	S‰ Surf.	TRANS-PARENCE (m)	CHLOROPHYLLE PROF	CHLOROPHYLLE mg/m3
1	5-6-74	09h 35	14°40	17°20'	25	1122	22	7429	19.5	35.60	3.5	Surf.	12.34
2	"	12h 00	14°40	17°37'	200	"	54	30	22.1	35.70	9	"	1.10
3	"	15h 55	14°40	17°52'	1500	"	56	31	23.5	35.81	12	"	0.35
4	"	18h 00	14°25	17°50	>1500	"	53	32	23.6	35.82	10	"	0.63
5	"	20h 20	14°25	17°35	200	"	43	33	23.0	35.74	-	"	0.86
6	"	22h 30	14°25	17°20	45	"	38	34	21.1	35.63	-	"	2.94
7	6-6-74	02h 15	14°25	17°07	10	"	-	-	20.4	35.58	-	"	4.73
8	"	04h 22	14°10	17°02	10	"	-	35	21.3	35.55	-	"	1.79
9	"	06h 10	14°10	17°17	45	"	40	36	21.3	35.61	5	"	3.11
10	"	10h 15	14°10	17°32	200	"	55	37	23.4	35.75	18	"	0.63
11	"	12h 20	14°10	17°46	>1500	"	48	38	23.2	35.81	16	"	0.23
12	"	14h 25	13°55	17°41	1500	1599	105	39	23.3	35.82	21	"	0.12
13	"	16h 20	13°55	17°26	200	"	130	40	23.5	35.80	13	"	0.23
14	"	18h 20	13°55	17°11	38	"	38	41	23.2	35.69	6	"	0.98
15	"	21h 40	13°40	17°11	39	"	39	42	22.7	35.59	-	"	0.69
16	7-6-74	01h 15	13°40	17°26	250	"	132	43	23.2	35.78	-	"	0.23
17	"	03h 30	13°40	17°41	1500	"	150	44	23.0	35.78	-	"	0.12
18	"	05h 30	13°25	17°45	1500	"	155	45	22.7	35.76	-	"	0.40
19	"	07h 30	13°25	17°30	200	"	140	46	22.9	35.66	7	"	1.10
20	"	09h 45	13°25	17°15	44	"	40	47	23.4	35.58	10	"	0.35
21	"	13h 00	13°25	17°00	16	"	16	48	24.0	35.59	9	"	-
22	"	14h 55	13°40	16°56	13	"	-	-	23.7	35.55	7	"	0.35
23	"	16h 55	13°55	16°56	10	"	-	-	23.5	35.55	3	"	3.80

TABLEAU - IIb - 2è Phase

ST	DATE	HEURE	POSITIONS LAT.N	POSITIONS LONG.W	FOND (m)	BATHY N°	IMMER BT	PLAQUE BT N°	T°C Surf.	S ‰ Surf.	TRANS-PARENCE (m)	CHLOROPHYLLE PROF (m)	CHLOROPHYLLE mg/m3
24	8.6.74	09h 40	14.40	17.20	25	1599	24	7449	21.3	35.64	5	5	1.22
25	"	11h 30	14.40	17.37	200	"	150	50	22.4	35.69	10	"	0.86
26	"	15h 20	14.40	17.52	1500	"	160	51	23.8	35.85	11	"	0.24
27	"	17h 20	14.25	17.50	1500	"	148	52	23.8	35.85	16	"	0.12
28	"	19h 15	14.25	17.35	200	"	142	53	23.6	35.82	13	"	0.24
29	"	21h 25	14.25	17.20	45	"	42	54	23.4	35.72	-	"	0.43
30	9.6.74	00h 50	14.25	17.07	10	-	-	-	22.5	35.61	-	"	1.25
31	"	02h 55	14.10	17.02	10	-	-	-	22.5	35.57	-	"	0.43
32	"	05h 00	14.10	17.17	45	"	45	55	23.1	35.69	-	"	0.43
33	"	08h 50	14.10	17.32	200	"	144	56	23.2	35.83	14	"	0.12
34	"	10h 50	14.10	17.46	1500	"	150	57	23.1	35.82	18	"	0.12
35	"	12h 55	13.55	17.41	1500	"	140	58	23.5	35.78	8	"	1.18
36	"	15h 00	13.55	17.26	200	"	145	59	23.8	35.83	13	"	0.35
37	"	17h 00	13.55	17.11	39	"	39	60	24.0	35.77	8	"	0.43
38	"	21h 00	13.40	17.11	39	"	39	61	24.0	35.67	-	"	0.51
39	10.6.74	00h 25	13.40	17.26	200	"	133	62	23.7	35.79	-	"	0.16
40	"	02h 40	13.40	17.41	1500	"	50	63	25.6	35.91	-	"	0.12
41	"	05h 00	13.25	17.45	1500	"	63	64	25.5	35.87	-	"	0.08
42	"	07h 30	13.25	17.30	200	"	-	65	25.6	35.90	16	"	0.16
43	"	09h 40	13.25	17.15	45	"	31	66	25.4	35.90	13	"	0.20
44	"	13h 10	13.25	17.00	16	-	-	-	24.3	35.67	15	"	0.24
45	"	15h 00	13.40	16.56	15	-	-	-	24.7	35.62	8	"	1.10
46	"	16h 55	13.55	16.56	10	-	-	-	24.2	35.61	6	"	2.08

TABLEAU IIc - 3e Phase

ST N°	DATE	HEURE	POSITIONS LAT.N	POSITIONS LONG.W	FOND (m)	BATHY N°	IMMER BT	PLAQUE BT N°	T°C Surf.	S‰ Surf.	TRANS-PARENCE (m)	CHLOROPHYLLE PROF	CHLOROPHYLLE mg/m3
47	11.6.74	09h 25	14.40	17.20	25	-	-	-	23.1	35.68	-	5 m	0.75
48	"	11h 25	14.40	17.37	200	1599	138	7467	23.5	35.33	15	"	0.08
49	"	15h 20	14.40	17.52	1500	"	149	68	23.8	35.87	10	"	0.16
50	"	17h 20	14.25	17.50	1500	"	90	69	23.6	35.91	8	"	0.12
51	"	19h 30	14.25	17.35	200	"	119	70	23.8	35.86	-	"	0.27
52	"	21h 45	14.25	17.20	45	"	41	71	23.3	35.68	-	"	0.67
53	12.6.74	01h 00	14.25	17.07	20	-	-	-	23.2	35.63	-	"	0.94
54	"	02h 45	14.10	17.02	10	-	-	-	23.5	35.59	-	"	4.43
55	"	04h 55	14.10	17.17	45		37	72	23.5	35.74	-	"	0.24
56	"	08h 05	14.10	17.32	200	-	-	-	23.6	35.77	-	"	0.12
57	"	10h 15	14.10	17.46	1500	-	-	-	23.9	35.79	17	"	0.24
58	"	12h 20	13.55	17.41	1500	-	-	-	25.0	35.88	16	"	0.08
59	"	14h 15	13.55	17.26	200	-	-	-	24.2	35.79	16	"	0.55
60	"	16h 05	13.55	17.11	43	-	-	-	23.8	35.66	7	"	0.00
61	"	19h 10	13.40	17.11	35	-	-	-	24.5	35.84	-	"	0.27
62	"	21h 50	13.40	17.26	200	-	-	-	23.8	35.85	-	"	0.27
63	"	23h 55	13.40	17.41	1500	-	-	-	23.7	35.77	-	"	0.16
64	13.6.74	01h 35	13.25	17.45	1500	-	-	-	25.4	35.90	-	"	0.18
65	"	03h 55	13.25	17.30	200	-	-	-	25.2	35.89	-	"	0.16
66	"	05h 55	13.25	17.15	45	-	-	-	25.3	35.88	-	"	0.00
67	"	09h 05	13.25	17.00	15	-	-	-	24.2	35.65	6	"	0.08
68	"	12h 45	13.40	16.56	12	-	-	-	25.1	35.68	3	"	0.27
69	"	14h 40	13.55	16.56	9	-	-	-	25.2	35.64	3	"	6.24

RESULTATS D'OBSERVATIONS DE COURANT

TABLEAU III

ST = 6

5 - 6 - 74 - 23h 30 - Fond = 45

PROF	DIR°	cm/s
5	80	9
10	20	12
20	350	18
30	315	31
40	305	33

ST = 9

6 - 6 - 74 - 06h 40 - Fond = 45

PROF	DIR°	cm/s
5	355	20
10	350	37
20	10	39
30	350	33
40	325	27

ST = 14

6-6-74 - 18h 50 - Fond = 38

5	65	18
10	20	24
20	30	37
30	05	31
37	NORD	25

ST = 15

6-6-74 - 22h 20 - Fond = 39

5	40	11
10	330	20
20	10	27
30	335	18
37	325	17

ST = 20

7-6-74 - 10h 25 - Fond = 44

5	15	32
10	05	33
20	15	31
30	350	27
40	340	21

ST = 29

8-6-74 - 22h 05 - Fond = 45

5	330	26
10	320	33
20	345	33
30	330	27
40	325	24

ST = 32

9-6-74 - 05h 40 - Fond = 45

5	335	32
10	335	30
20	355	27
30	330	24
40	310	21

ST = 37

9-6-74 - 17h 40 - Fond = 39

5	335	14
10	30	10
20	20	21
30	15	16
35	25	17

RESULTATS D'OBSERVATIONS DE COURANT

Suite TABLEAU III

ST = 38

9-6-74 - 21h 30 - Fond = 39

PROF	DIR°	V cm/s
5	65	17
10	85	16
20	70	21
30	55	19
37	70	14

ST = 43

10-6-74 - 10h 15 - Fond = 45

PROF	DIR°	V cm/s
5	145	19
10	130	21
20	105	18
30	45	22
40	30	19

ST = 52

11-6-74 - 21h 45 - Fond = 45

5	235	13
10	325	14
20	NORD	23
30	05	22
40	35	20

ST = 55

12-6-74 - 05h 10 - Fond = 45

5	195	21
10	235	6
20	115	13
30	315	23
40	290	15

ST = 60

12-6-74 - 16h 30 - Fond = 43

5	245	15
10	265	21
20	285	21
30	275	25
40	280	24

ST = 61

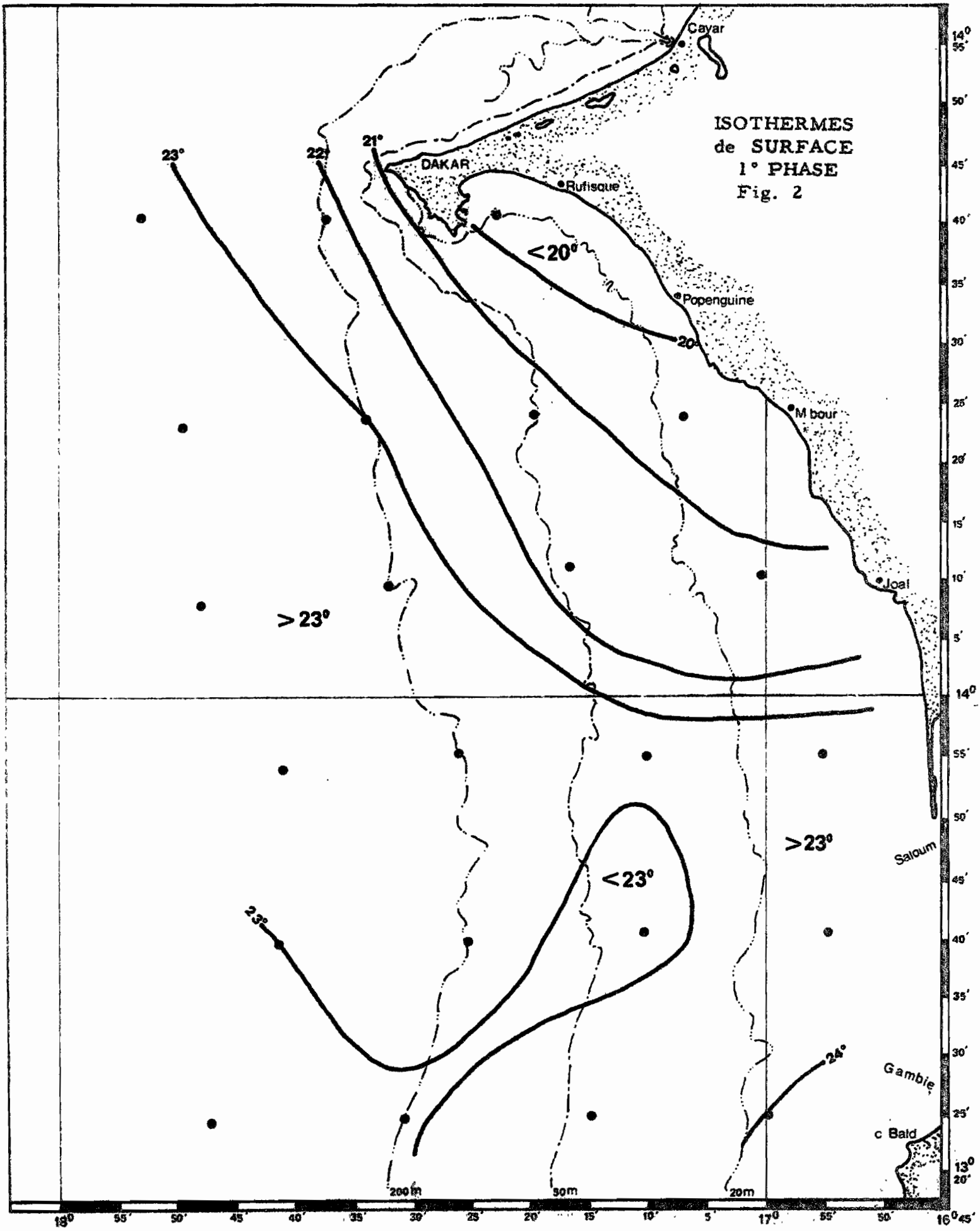
12-6-74 - 19h20 - Fond = 35

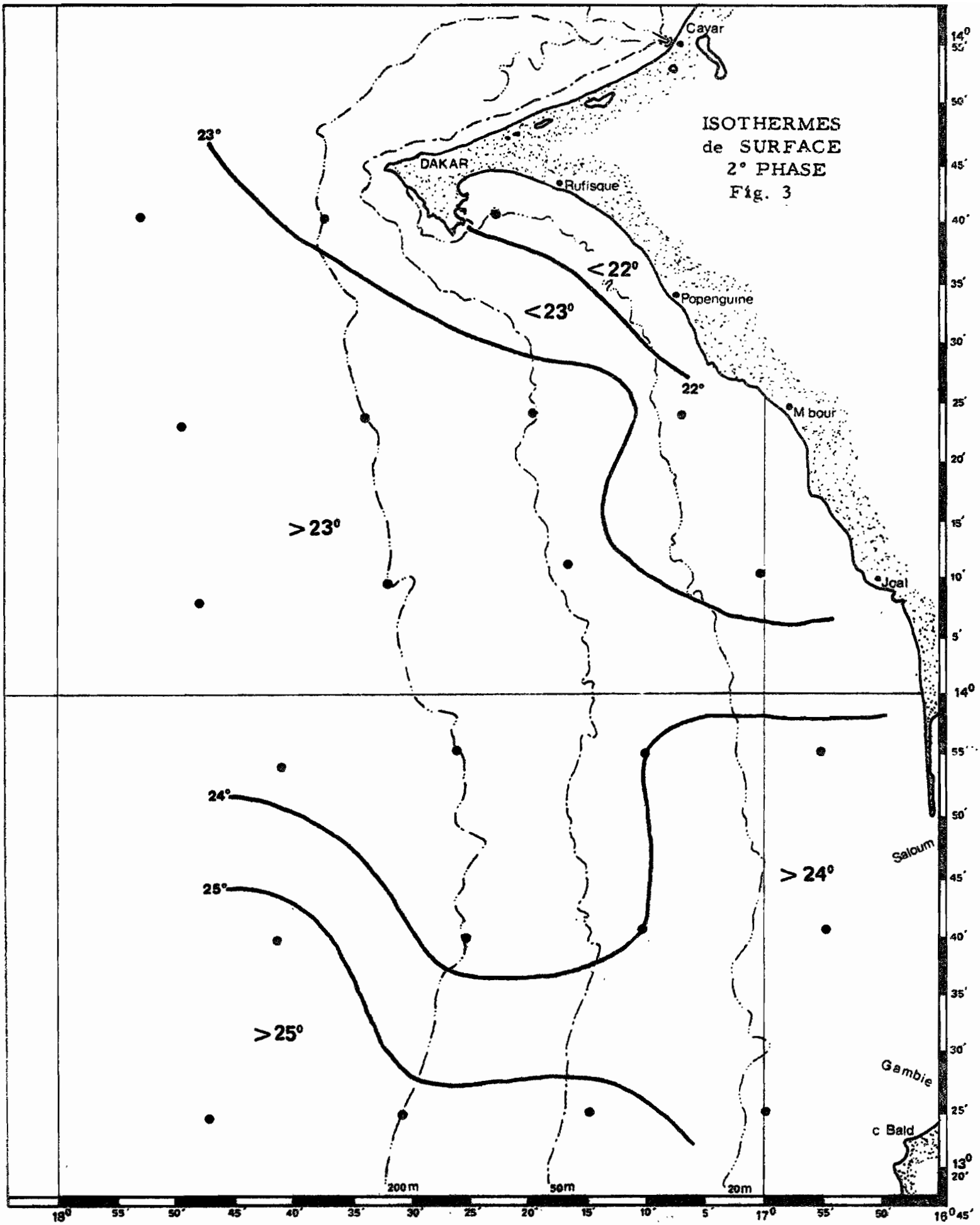
5	310	30
10	320	28
20	05	30
30	345	19

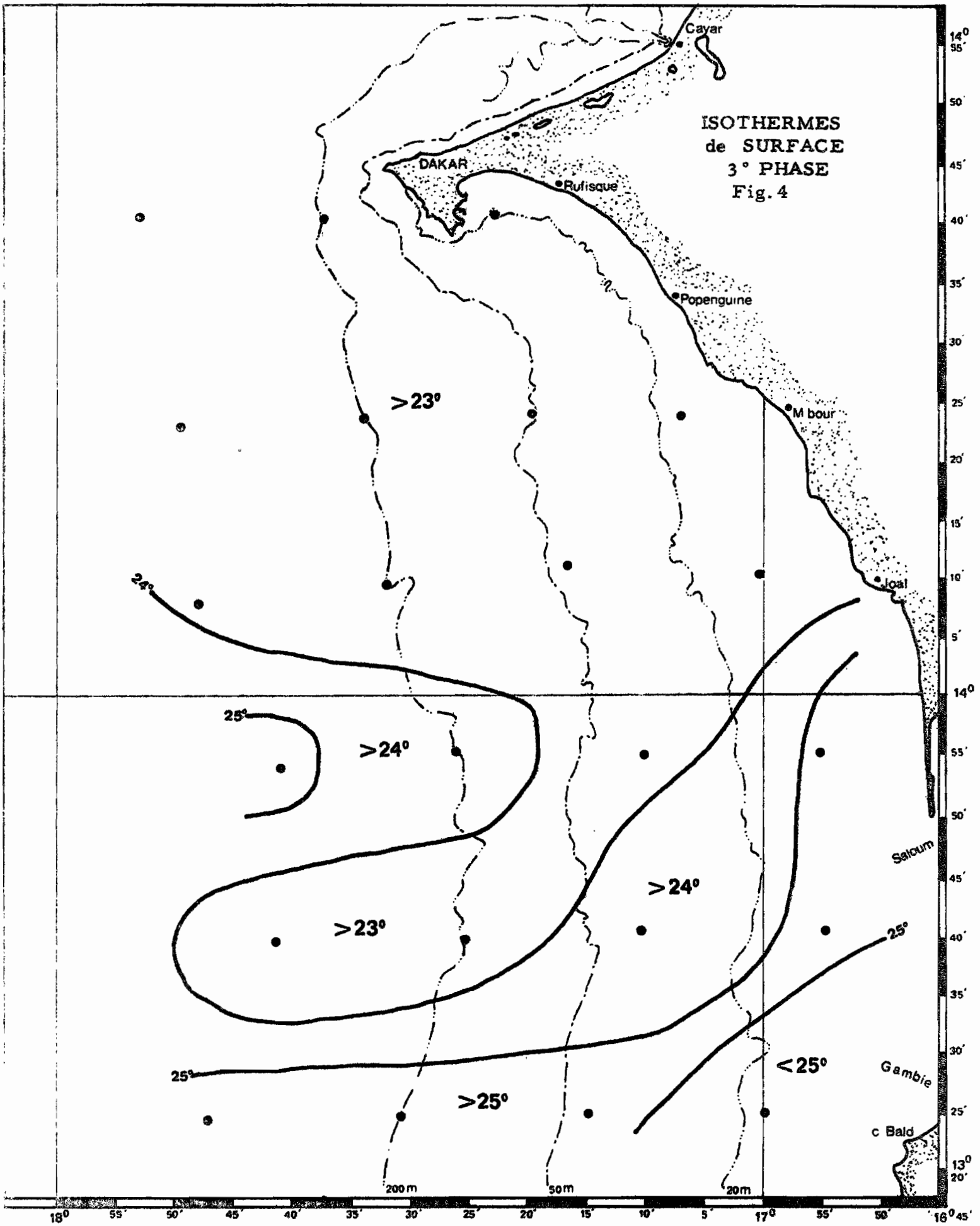
ST = 66

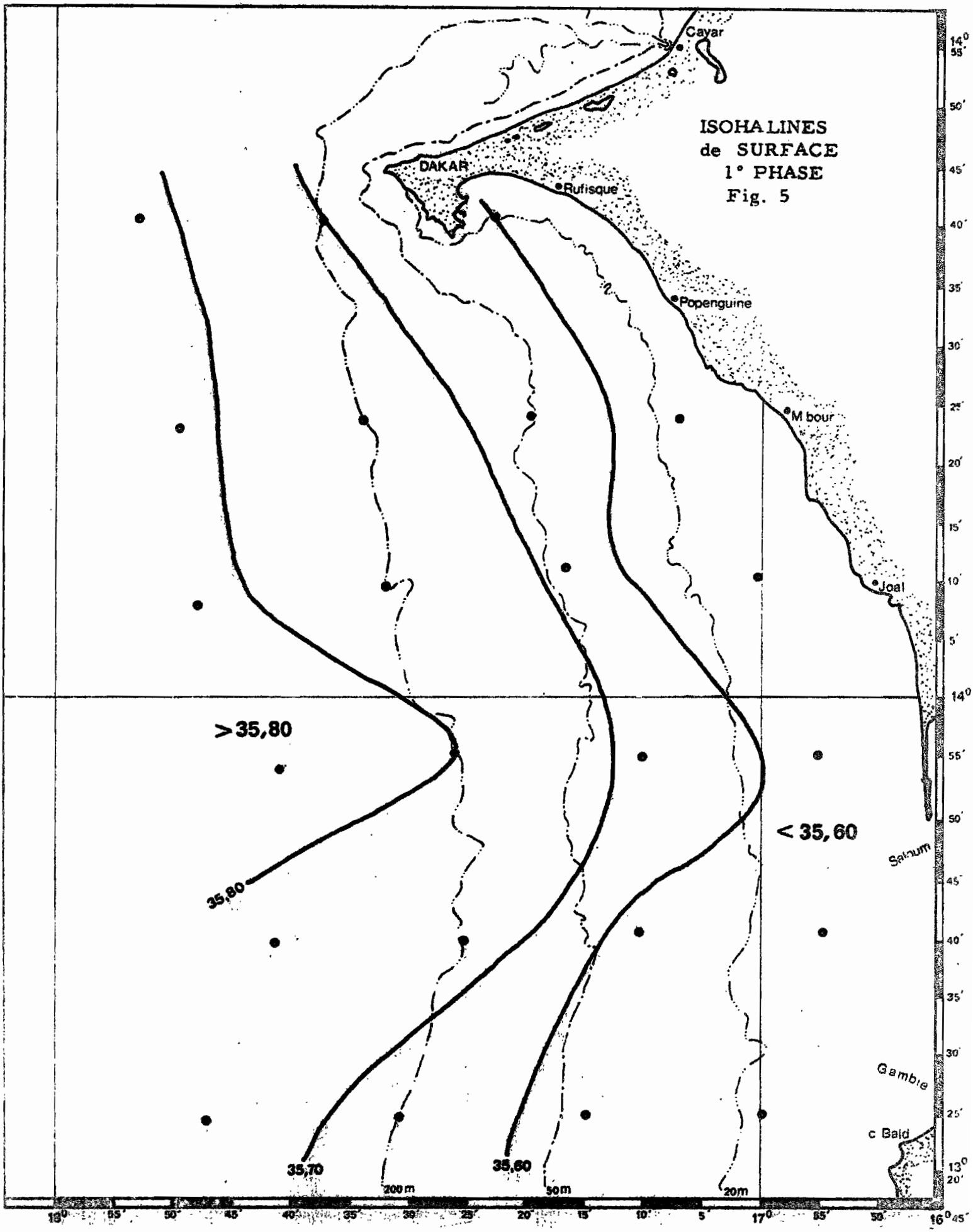
13-6-74 - 06h 10 - Fond 45

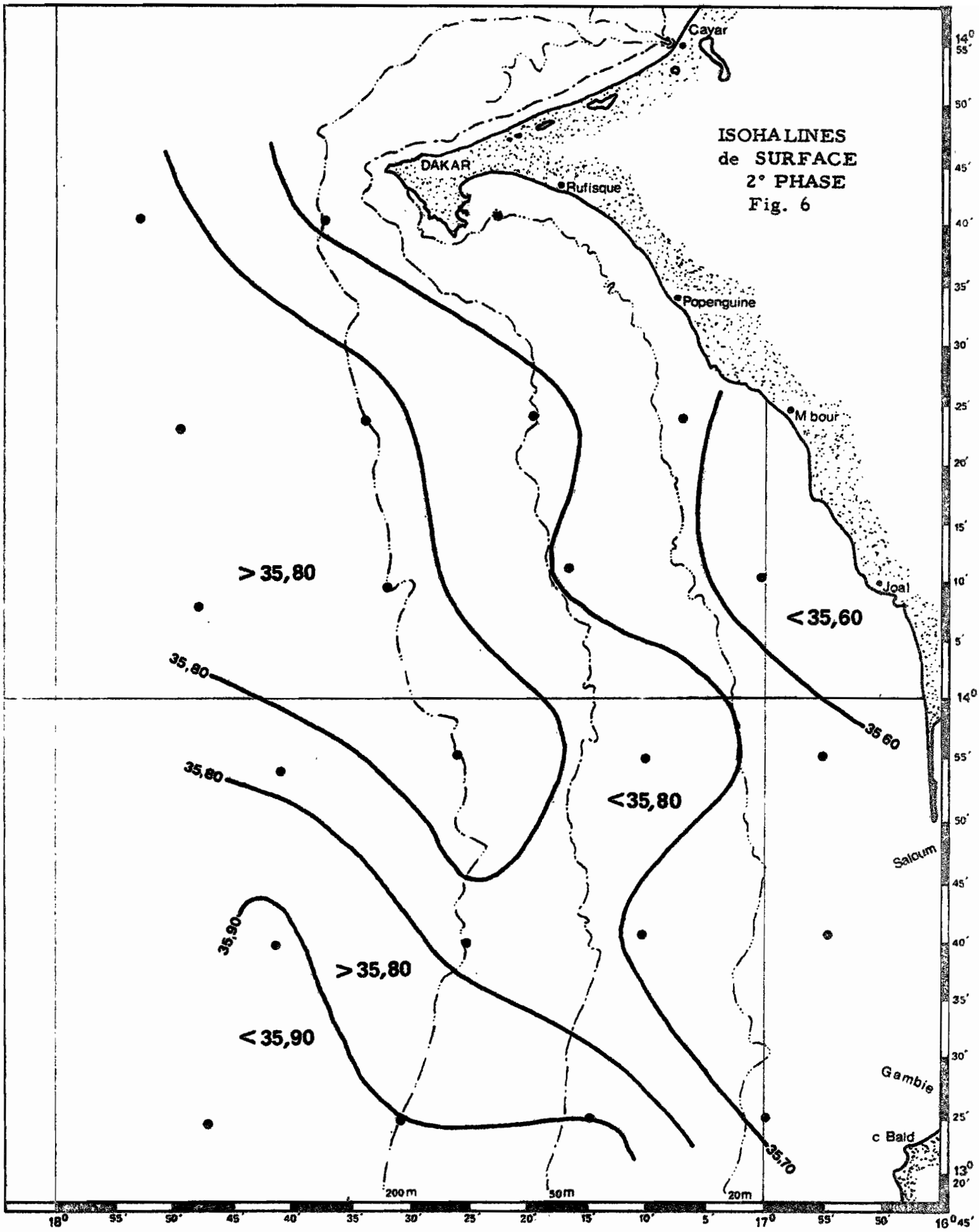
5	10	18
10	05	19
20	10	24
30	355	29
40	345	21

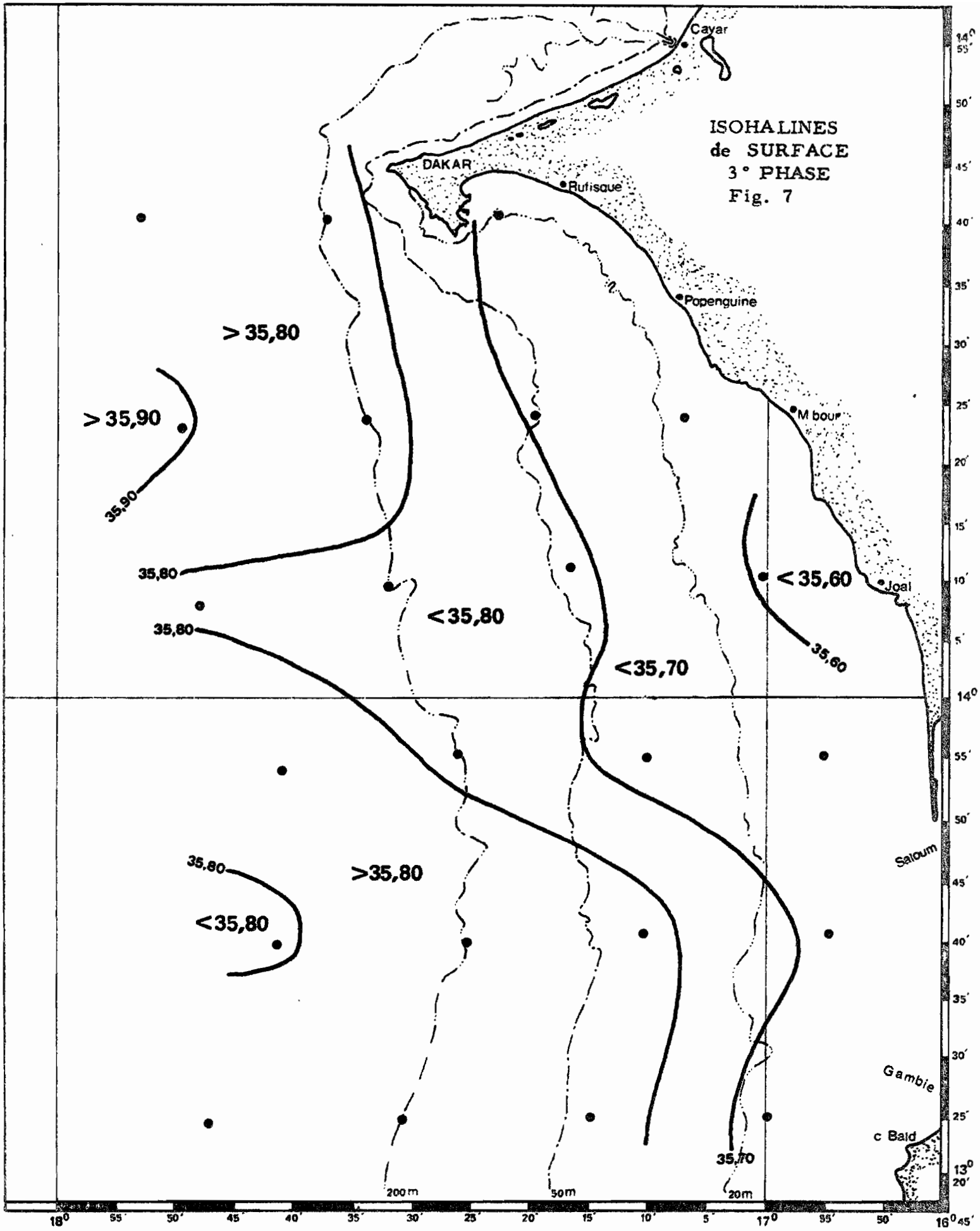

ISOTHERMES
de SURFACE
1° PHASE
Fig. 2
Cayar
DAKAR
Rufisque
Popenguine
M bour
Joal
Saloum
Gambie
c Bald
23°
22°
21°
20°
24°
<20°
>23°
<23°
>23°
200m
50m
20m
18°
55'
50'
45'
40'
35'
30'
25'
20'
15'
10'
5'
17°
55'
50'
16°45'
14°
55'
50'
45'
40'
35'
30'
25'
20'
15'
10'
5'
14°
55'
50'
45'
40'
35'
30'
25'
13°
20'

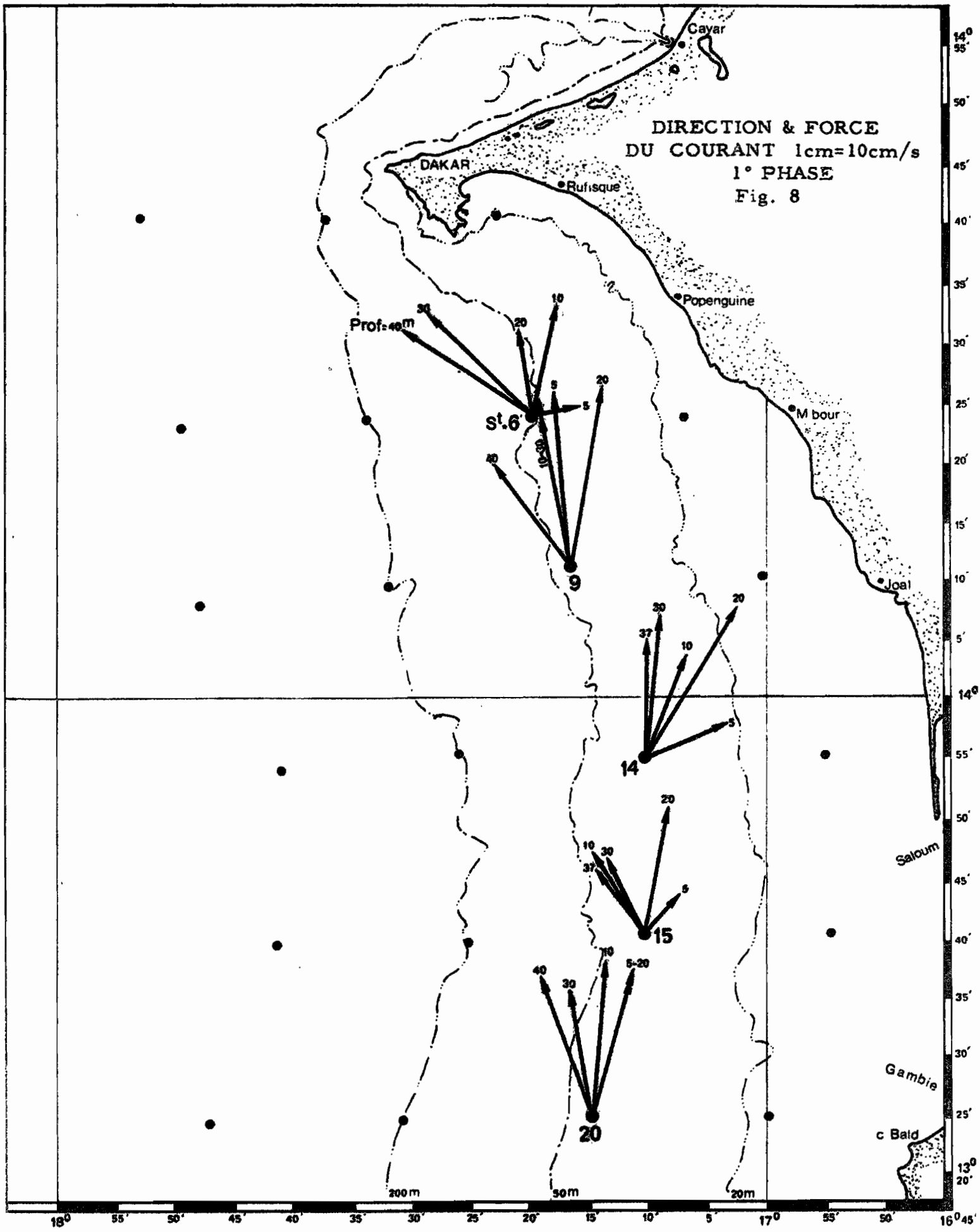

ISOTHERMES
de SURFACE
2° PHASE
Fig. 3
Cayar
DAKAR
Rufisque
Popenguine
M bour
Joal
Saloum
Gambie
c Bald
23°
22°
24°
25°
< 22°
< 23°
> 23°
> 24°
> 25°
200 m
50m
20m
14° 50'
50'
45'
40'
35'
30'
25'
20'
15'
10'
5'
14°
55'
50'
45'
40'
35'
30'
25'
13° 20'
18°
55'
50'
45'
40'
35'
30'
25'
20'
15'
10'
5'
17°
55'
50'
16° 45'

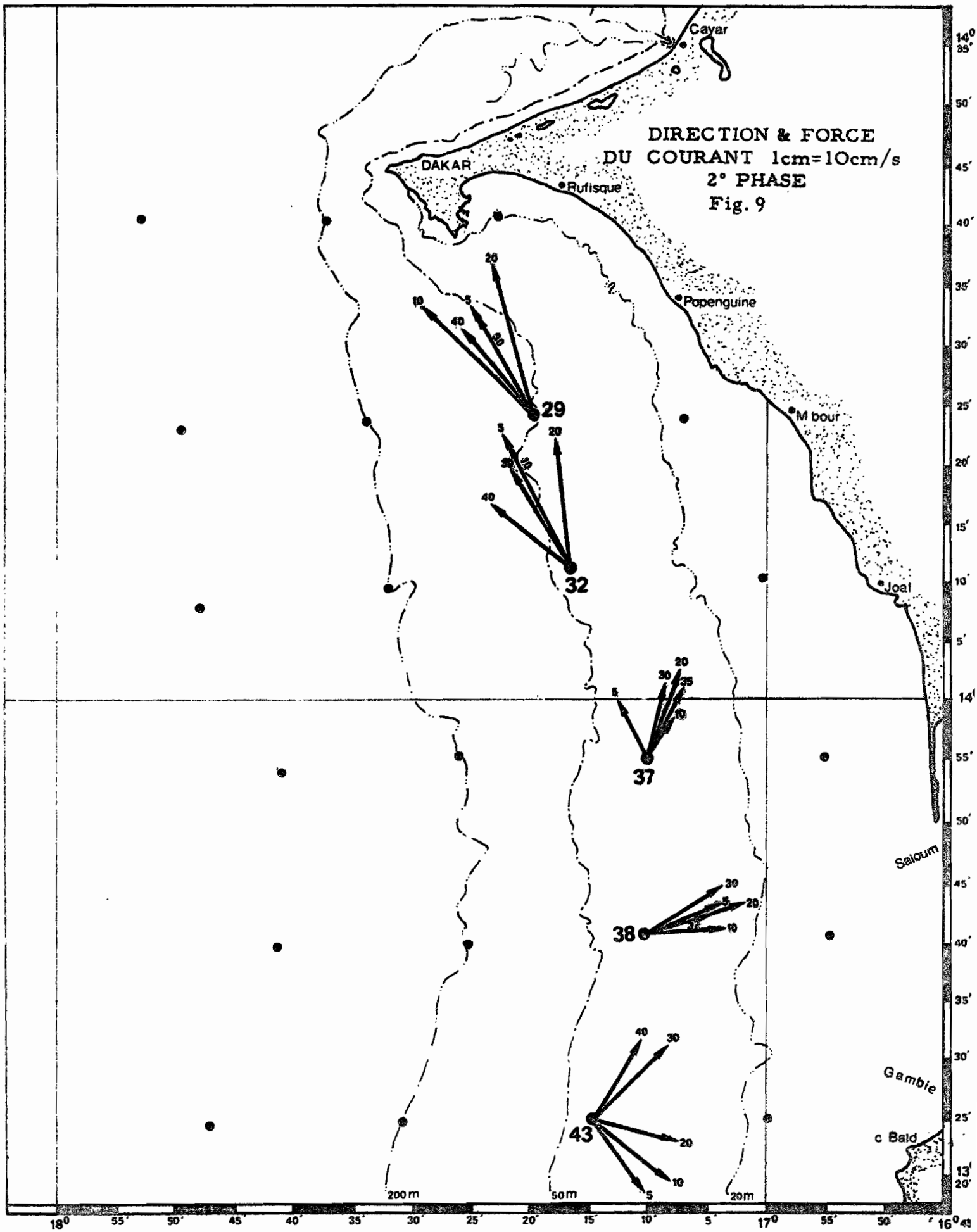

ISOTHERMES
de SURFACE
3° PHASE
Fig. 4
Cayar
DAKAR
Rufisque
Popenguine
M bour
Joal
Saloum
Gambie
c Bald
>23°
24°
25°
>24°
>23°
>24°
25°
25°
>25°
<25°
200 m
50 m
20 m
14° 55' 50' 45' 40' 35' 30' 25' 20' 15' 10' 5' 14° 55' 50' 45' 40' 35' 30' 25' 13° 20'
18° 55' 50' 45' 40' 35' 30' 25' 20' 15' 10' 5' 17° 55' 50' 16° 45'

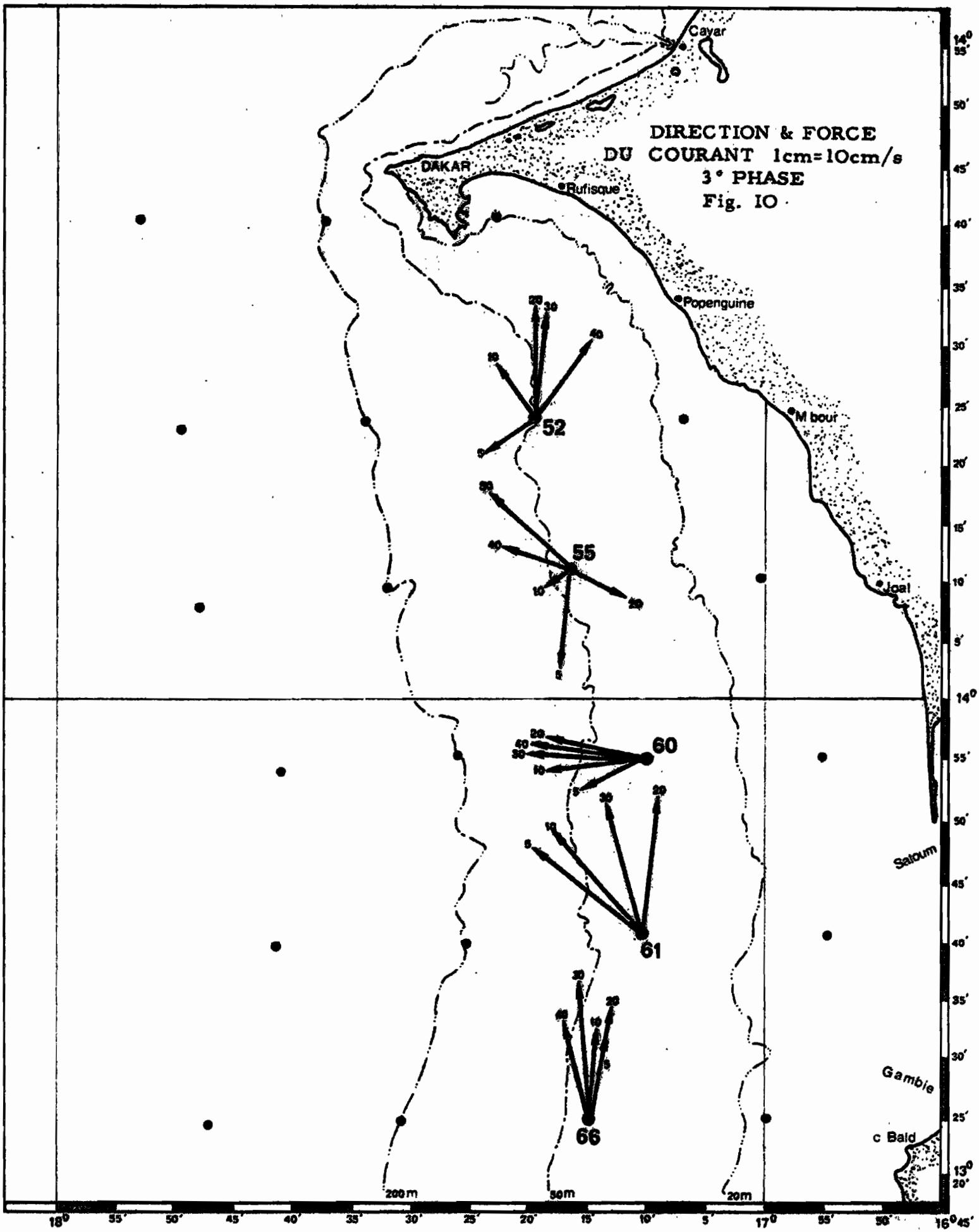

ISOHALINES
de SURFACE
1° PHASE
Fig. 5
Cayar
DAKAR
Rufisque
Popenguine
M bour
Joal
Saloum
Gambie
c Bald
>35,80
35,80
35,70
35,60
< 35,60
200 m
50 m
20 m
14° 55'
50'
45'
40'
35'
30'
25'
20'
15'
10'
5'
14°
55'
50'
45'
40'
35'
30'
25'
13° 20'
18° 55'
50'
45'
40'
35'
30'
25'
20'
15'
10'
5'
17° 55'
50'
16° 45'


ISOHALINES
de SURFACE
2° PHASE
Fig. 6
Cayar
DAKAR
Rufisque
Popenguine
M bour
Joal
Saloum
Gambie
c Bald
> 35,80
< 35,60
< 35,80
> 35,80
< 35,90
35,80
35,80
35,90
35,60
35,70
200 m
50 m
20 m
14° 55'
50'
45'
40'
35'
30'
25'
20'
15'
10'
5'
14°
55'
50'
45'
40'
35'
30'
25'
13° 20'
18° 55' 50' 45' 40' 35' 30' 25' 20' 15' 10' 5' 17° 55' 50' 16° 45'

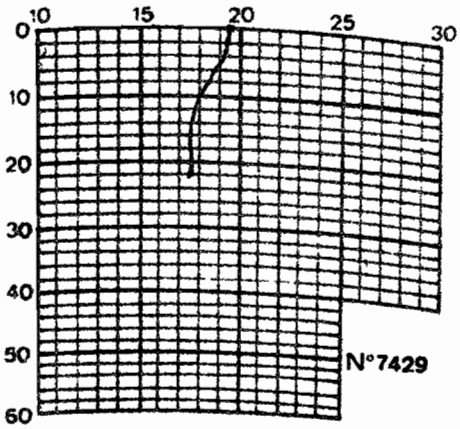

ISOHALINES
de SURFACE
3° PHASE
Fig. 7
Cayar
DAKAR
Rufisque
Popenguine
M bour
Joal
Saloum
Gambie
c Bald
> 35,80
> 35,90
35,90
35,80
35,80
< 35,80
< 35,70
< 35,60
35,60
35,80
> 35,80
< 35,80
35,70
200 m
50 m
20 m
14° 55'
50'
45'
40'
35'
30'
25'
20'
15'
10'
5'
14°
55'
50'
45'
40'
35'
30'
25'
13° 20'
18° 55' 50' 45' 40' 35' 30' 25' 20' 15' 10' 5' 17° 55' 50' 16° 45'

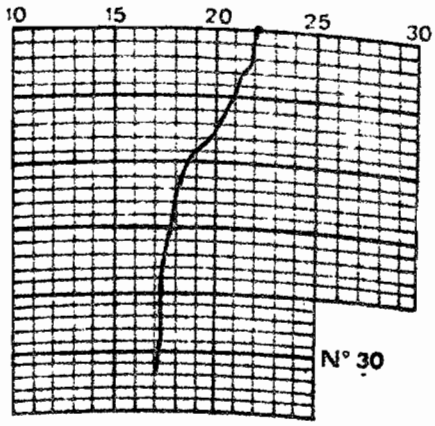

DIRECTION & FORCE
DU COURANT 1cm=10cm/s
1° PHASE
Fig. 8
Cayar
DAKAR
Rufisque
Popenguine
M bour
Joal
Saloum
Gambie
c Bald
Prof=40m
St.6
9
14
15
20
200m
50m
20m

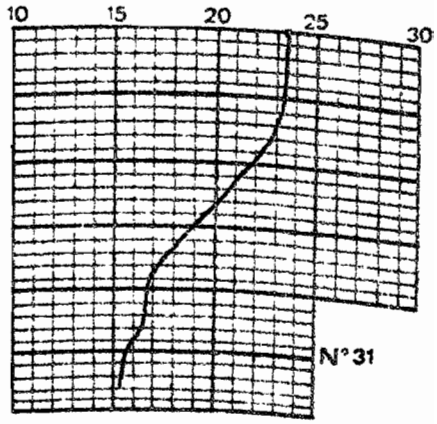

DIRECTION & FORCE
DU COURANT 1cm=10cm/s
2° PHASE
Fig. 9
Cayar
DAKAR
Rufisque
Popenguine
M bour
Joal
Saloum
Gambie
c Bald
29
32
37
38
43
200 m
50 m
20 m
18°
17°
16°
14°
13°

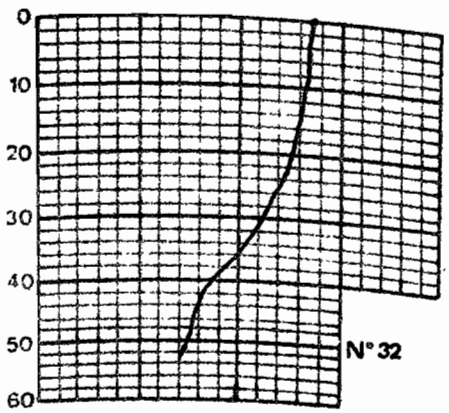

DIRECTION & FORCE
DU COURANT 1cm=10cm/s
3° PHASE
Fig. 10
Cayar
DAKAR
Rufisque
Popenguine
M bour
Joal
Saloum
Gambie
c Bald
52
55
60
61
66
200m
50m
20m
14°
13°
18°
17°
16°

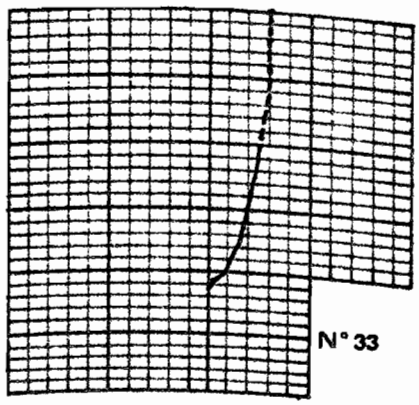
D.F 1122

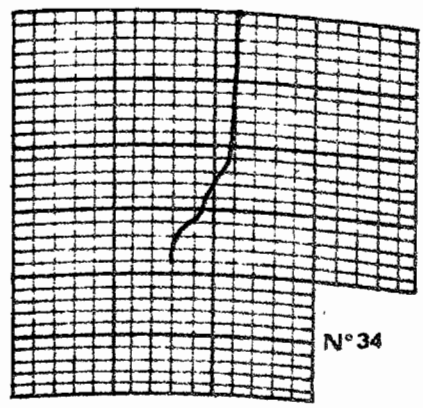


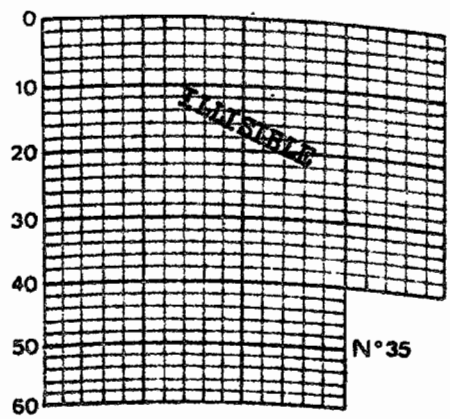


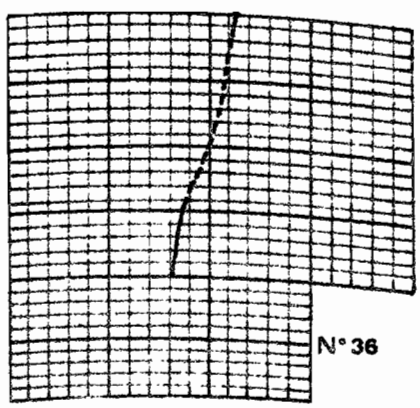












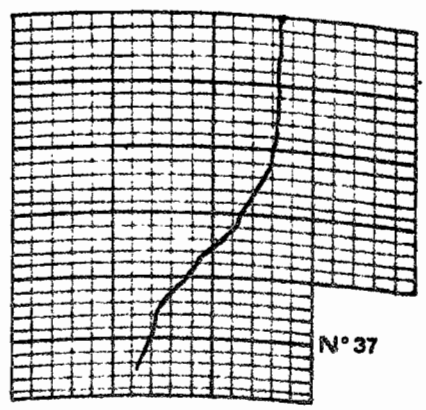
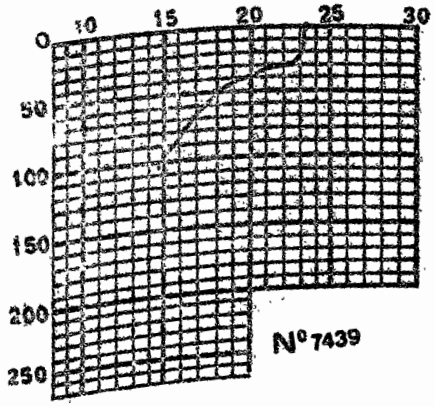
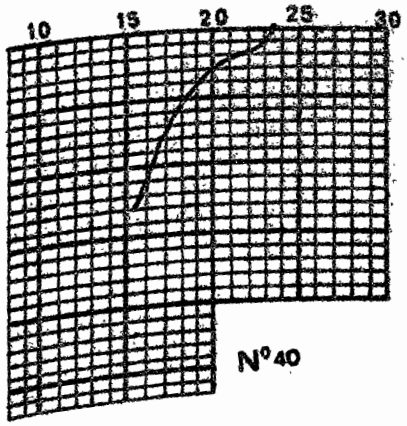
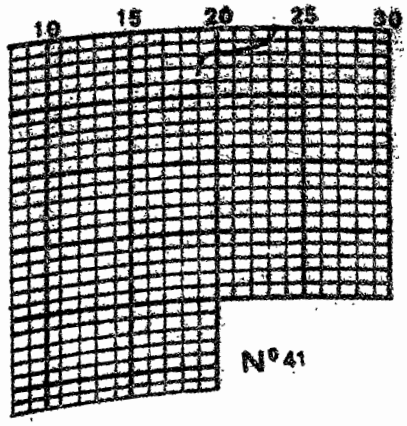


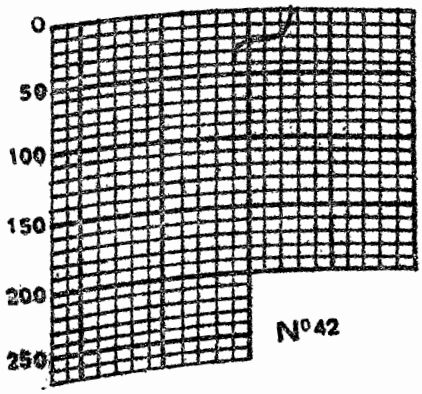
PLANCHE 1A

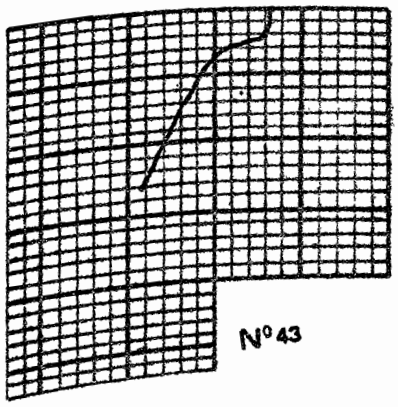
3599

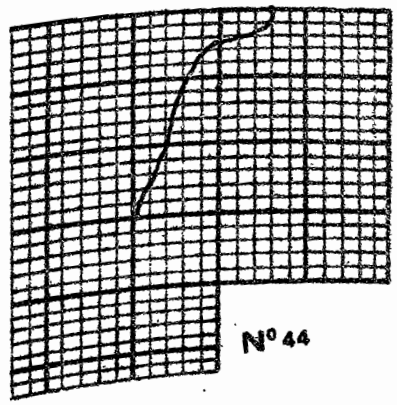


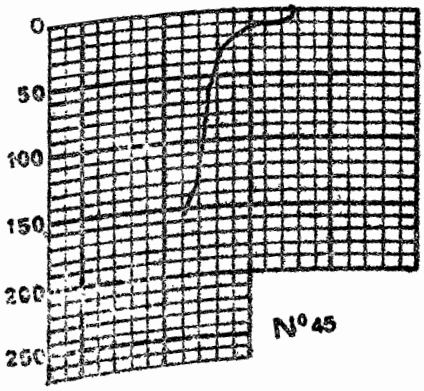


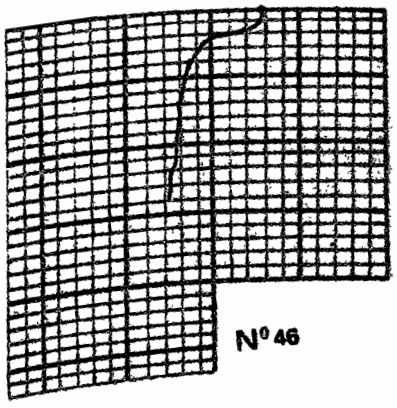












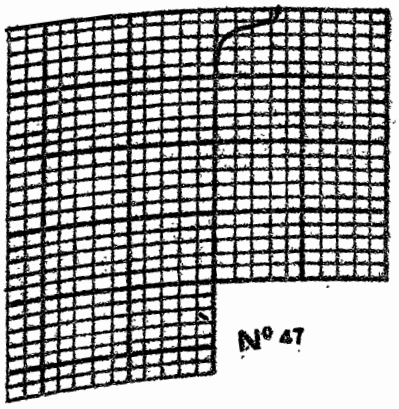
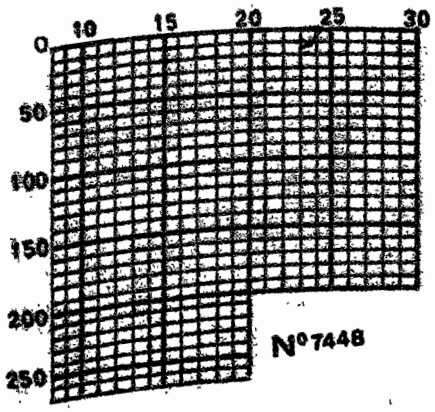


PLANCHE 1B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20
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30
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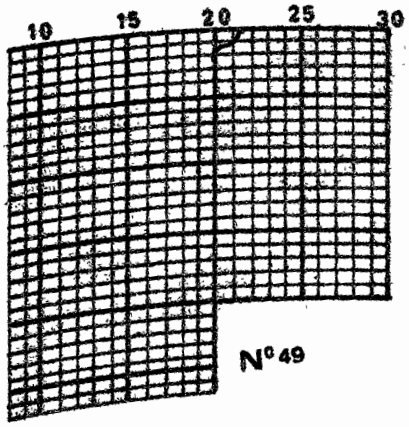
50
100
150
200
250
N° 7448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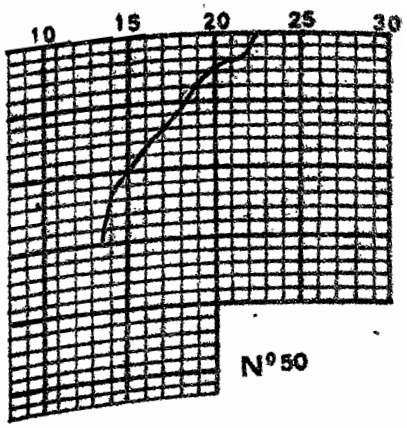
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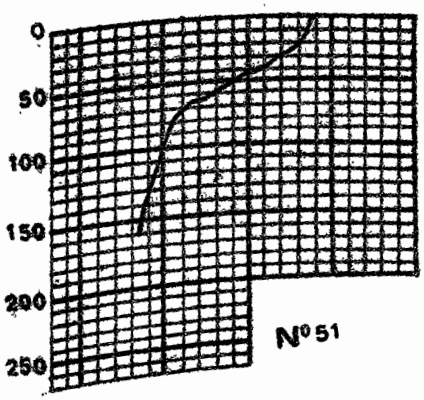
N° 50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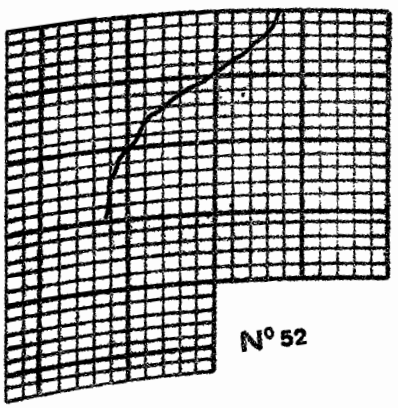
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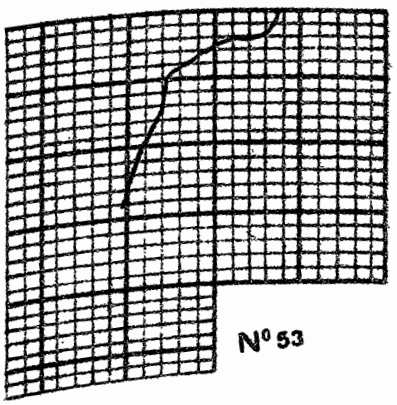
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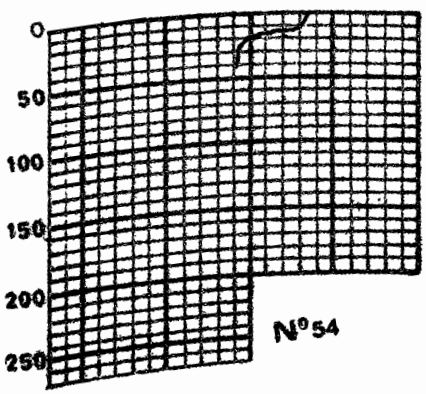
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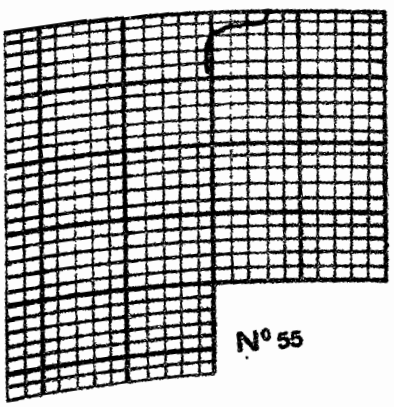
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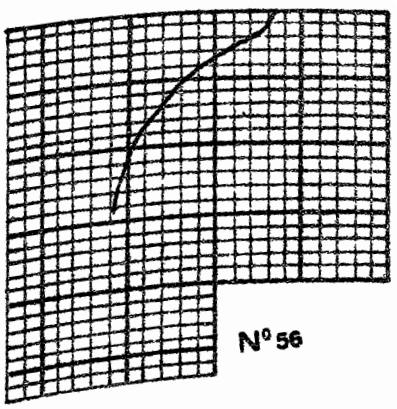
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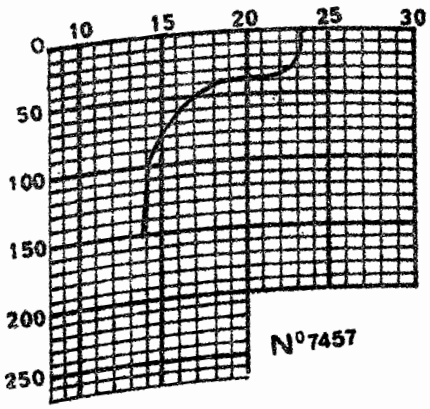
PLANCHE 1C

-1599



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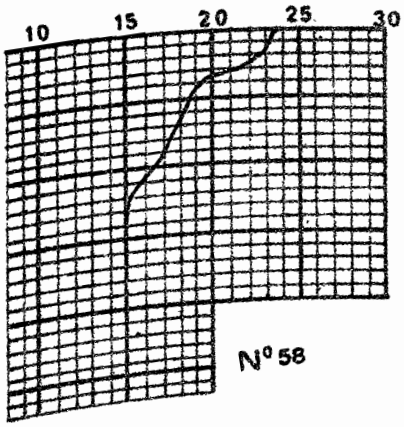

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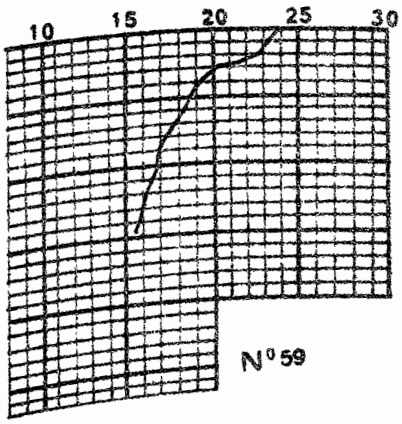

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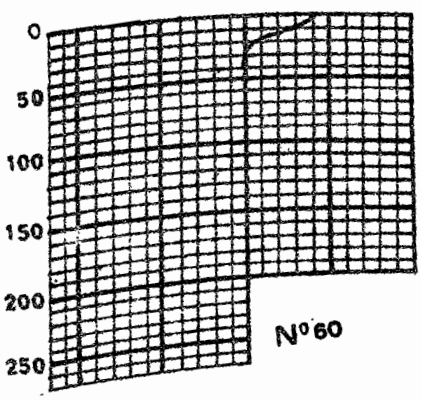

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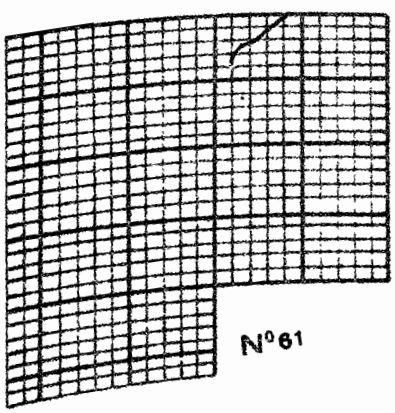

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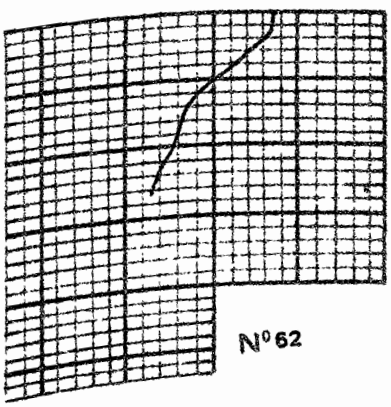

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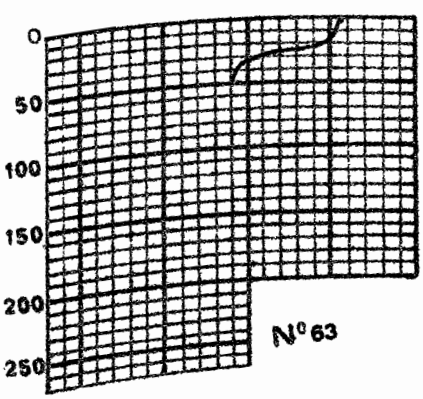

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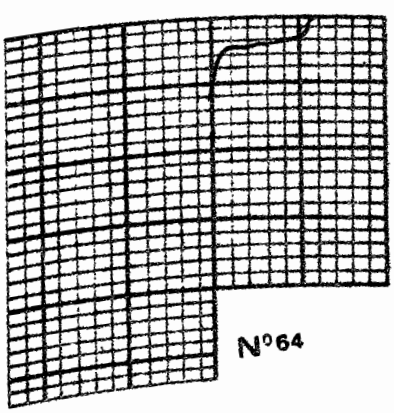

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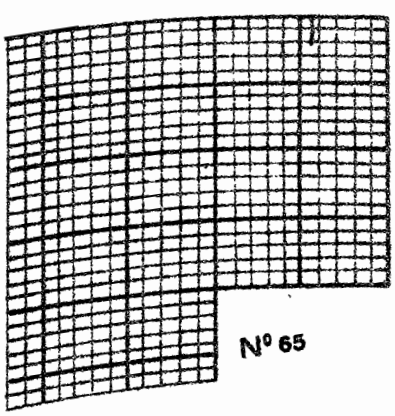
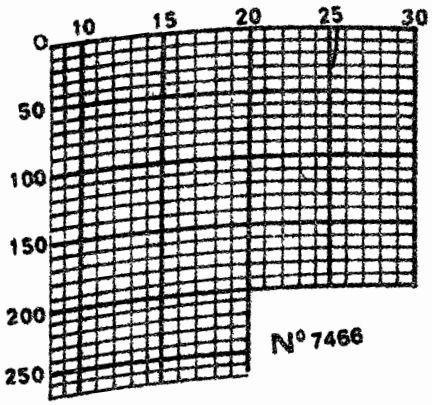
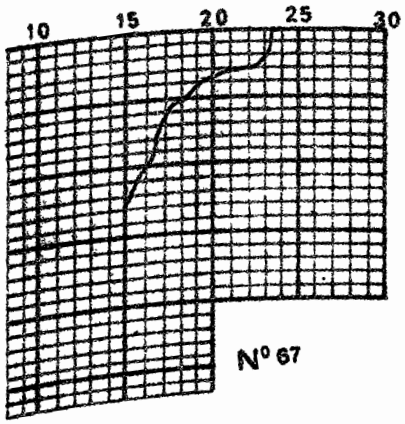


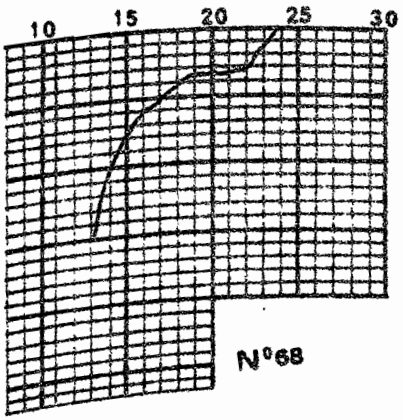
N° 65

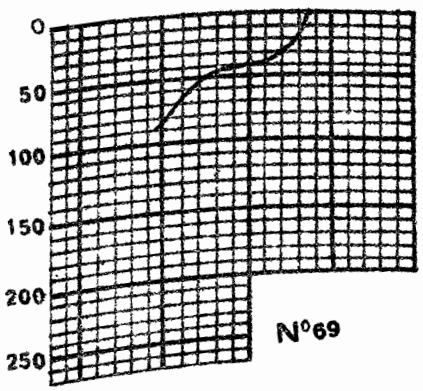
PLANCHE 1D

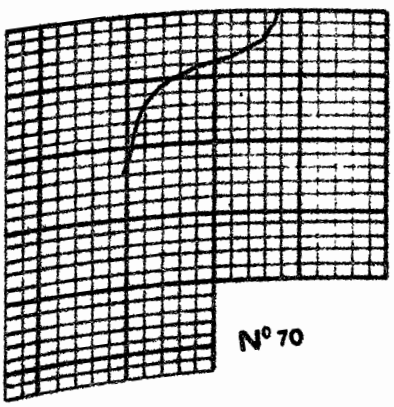
599

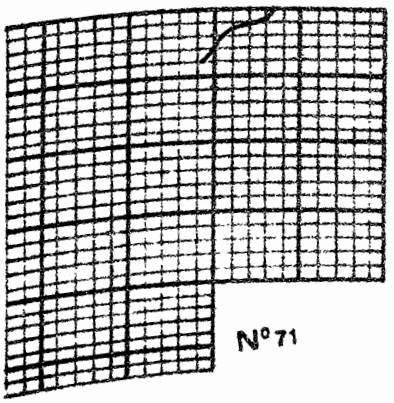












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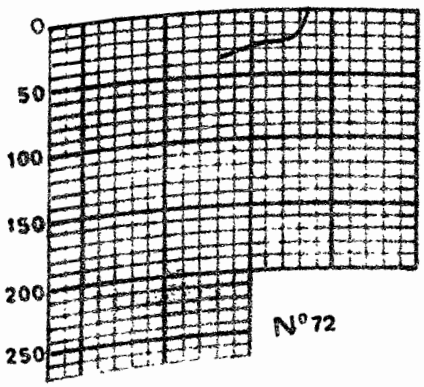

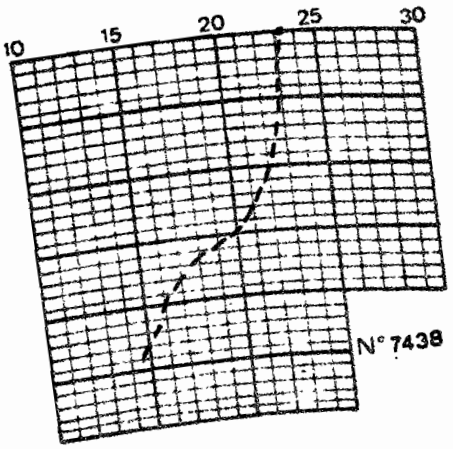

PLANCHE 1E