N. DARO
EKOLOGIE
V.U.B.

GRAZING ZOOPLANKTON
Cruises organic matter.
Technical report on rough results.

Our results of zooplankton grazing concern the ingestion of living phytoplankton. We use a radiocarbon method applied on natural populations (Daro 1978). The rough results we obtain are expressed in volume water swept clear/h. They are to be multiplied by the concentration of phytoplankton, most of the time chlorophyl a, but sometimes mgC or particulate volume in order to get the ingestion.

In order to situate the results in a more general figure we show at

the FIG. 1 : the vertical distribution of the zooplancton biomasses at Ostend & Calais in April & October.

the FIG. 2 : the horizontal distribution of the biomasses of zooplancton in mgC/m^3 in the net work in front of the belgian coast (in june 1978)

the FIG. 3 : the horizontal distribution of the chlorophyl a in mg/m^3 (same place same time)

the FIG. 4 : the horizontal distribution of grazing in mg chl a/m^3/hour (same place same time)

the FIG. 5 : the season variation of the zooplancton biomass at the station 33 during 1977 & 1978.

the FIG. 6 : a detail of the variation of the zooplancton biomass in April 1978 at Calais & Ostend.

OSTEND

DATE	HOUR	DEPTH	F.RATE in L/m³/h.	PHYTO. CONC. CHL.A mg/m³	PHYTO. CONC. CARBON mg/m3	PHYTO. CONC. PART. VOL. 10^6 μ^3/L.	INGESTION/HOUR CHL.A mg/m3	INGESTION/HOUR CARBON mg/m3	INGESTION/HOUR PART. VOL. 10^6 μ^3/m3	ING./24H.
2/4/78	12 h.	0 M.	-			1198			-	
		8 M.	2.006			1688			3386	
		13 M.	0.897			1628			1450	
5/4/78	12 h.	1 M.	0,072(13)							
		5 M.	0,054(13)							
6/4/78	12 h.	1 M.	2.281			3899			8894	
		5 M.	2.644			3740			9888	
		10 M.	0.924			4582			4234	
8/4/78	12 h.	1 M.	1.084							
		5 M.	0.464							
		10 M.	2.043							
9/4/78	0 h.	1 M.	3.548			6000			21288	
		5 M.	3.596			6928			24913	
		10 M.	4.442			6264			27825	
9/4/78	12 h.	1 M.	3.842			11162			42884	$1000.10^9 \mu^3/m^3$/ 24h. or 11% of the stock
		5 M.	1.967			10746			21137	
		10 M.	2.755			12636			34951	
10/4/78	0 h.	1 M.	17.013			5853			99577	
		3 M.	14.424			5420			78178	
		10 M.	8.972			9746			87441	
12/4/78	12 h.	1 M.	3.599			6385			23618	
		3 M.	2.261			5666			12810	
		10 M.	4.797			6503			31195	
13/4/78	0 h.	1 M.	30.491			3698			112756	$1.200.10^9 \mu^3/m^3$ 24h. or 24% of the stock
		3 M.	18.273			3232			59058	
		10 M.	11.054			2764			30553	
13/4/78	12 h.	1 M.	4.352			3814			16598	
		3 M.	15.222			6669			101515	
		10 M.	8.423			4029			33936	
15/4/78	12 h.	1 M.	3.612			6934			25046	
		3 M.	2.979			4279			12747	
		10 M.	18.463			3638			67168	
16/4/78	0 h.	1 M.	5.696							
		3 M.	5.521							
		10 M.	7.396							
16/4/78	12 h.	1 M.	1.57							
		3 M.	2.097							

OSTEND

DATE	HOUR	DEPTH	F.RATE in L/m³/h.	PHYTO.CONC CHL.A mg/m³	PHYTO.CONC CARBON mg/m³	PHYTO.CONC PART.VOL. 10⁶ µ³/L.	INGESTION/HOUR CHL.A mg/m³	INGESTION/HOUR CARBON mg/m³	INGESTION/HOUR PART.VOL. 10⁶µ³/m³	ING./24H.
17/4/78	0 h.	1 M.	0.187							
		3 M.	1.063							
		5 M.	3.159							
19/4/78	10 h.	1 M.	1.578							
		3 M.	2.051							
		10 M.	3.848							
16/5/78	12 h.	3 M.	0.55							
17/5/78	0 h.	3 M.	1.19							
17/5/78	2 h.	3 M.	10.04(32)							
12/6/78	12 h.	3 M.	0.60	2.94			0.002			
11/7/78	12 h.	3 M.	2.24	1.88			0.004			

CALAIS

DATE	HOUR	DEPTH	F. RATE mL/m³/L.	PHYTO. CONC. CHL.A mg/m³	PHYTO. CONC. CARBON mg/m³	PHYTO. CONC. PART.VOL. $10^6\mu^3$L.	INGESTION/HOUR CHL.A mg/m³	INGESTION/HOUR CARBON mg/m³	INGESTION/HOUR PART.VOL. $10^6\mu^3/m^3$	ING./24H.
21/7/77	12 h.	3 M.	0.195							
9/10/77	9 h.	0 M.	2.171		141			0.306		
		2 M.	1.777		223			0.396		
		6 M.	0.752		299			0.225		
		14 M.	1.541		219			0.337		
		30 M.	3.5		298			1.043		
9/10/77	14 h.	0 M.	4.145		219			0.908		17.66mgC/m³/2
		2 M.	2.838		270			0.766		or 7% of the
		6 M.	1.688		312			0.527		stock
		14 M.	3.086		265			0.818		
		28 M.	2.834		245			0.694		
10/10/77	0 h.	5 M.	3.658		300			1.097		
10/10/77	9 h.	0 M.	-		-					
		2 M.	2.686		250			0.672		
		6 M.	0.646		367			0.237		
		14 M.	3.42		268			0.917		
		28 M.	2.509		278			0.698		
19/10/77	12 h.	3 M.	0.512							
3/4/78	0 h.	3 M.	0.241			614			131	
		11 M.	0.106			547			58	
		20 M.	0.342			634			217	
3/4/78	12 h.	3 M.	0.112			793			89	$4.10^9\mu^3/m^3/24$
		12 M.	0.236			829			196	or 1% of the
		20 M.	0.270			817			221	stock
4/4/78	0 h.	3 M.	0.935			495			463	
		12 M.	0.376			463			174	
		20 M.	0.322			379			122	
4/4/78	12 h.	3 M.	0.323							
		13 M.	0.539							
		22 M.	0.582							
7/4/78	12 h.	1 M.	0.408							
		10 M.	0.536							
		22 M.	1.504							

CALAIS

DATE	HOUR	DEPTH	F.RATE	PHYTO.CONC.			INGESTION/HOUR			ING./24h.
				CHL.A.	CARBON	PART.VOL.	CHL.A	CARBON	PART.VOL.	
			ml/m³/h	mg/m³	mg/m³	$10^6\mu^3$L.	mg/m³	mg/m³	$10^6\mu^3/m^3$	
8/4/78	0 h.	1 M.	1.549							
		10 M.	0.506							
11/4/78	12 h.	1 M.	0.205			977			200	
		8 M.	0.520			734			382	$29.10^6\mu^3/m^3$/
		22 M.	0.624			810			505	24h or 5% of
12/4/78	0 h.	1 M.	5.056			370			1871	the stock
		8 M.	4.668			557			2600	
		22 M.	2.641			524			1384	
14/4/78	0 h.	1 M.	1.994			393			784	
		8 M.	1.472			659			970	
		22 M.	0.913			700			639	
15/4/78	0 h.	1 M.	-			649			-	
		8 M.	0.931			671			625	
		22 M.	0.900			501			451	
17/4/78	12 h.	1 M.	0			485			0	
		3 M.	0			475			0	
		10 M.	2.346			499				
18/4/78	0 h.	0 M.	1.193			407				
		3 M.	2.032			427				
		10 M.	1.003			319				
17/5/78	12 h.	3 M.	0.125							
17/5/78	23 h.	3 M.	1.472							
12/7/78	7 h.	3 M.	0							

HANSWEERT

19/7/77	12 h.	3 M.	0.277							
19/10/77	12 h.	3 M.	0.398							
19/5/78	9 h.	3 M.	1.377							

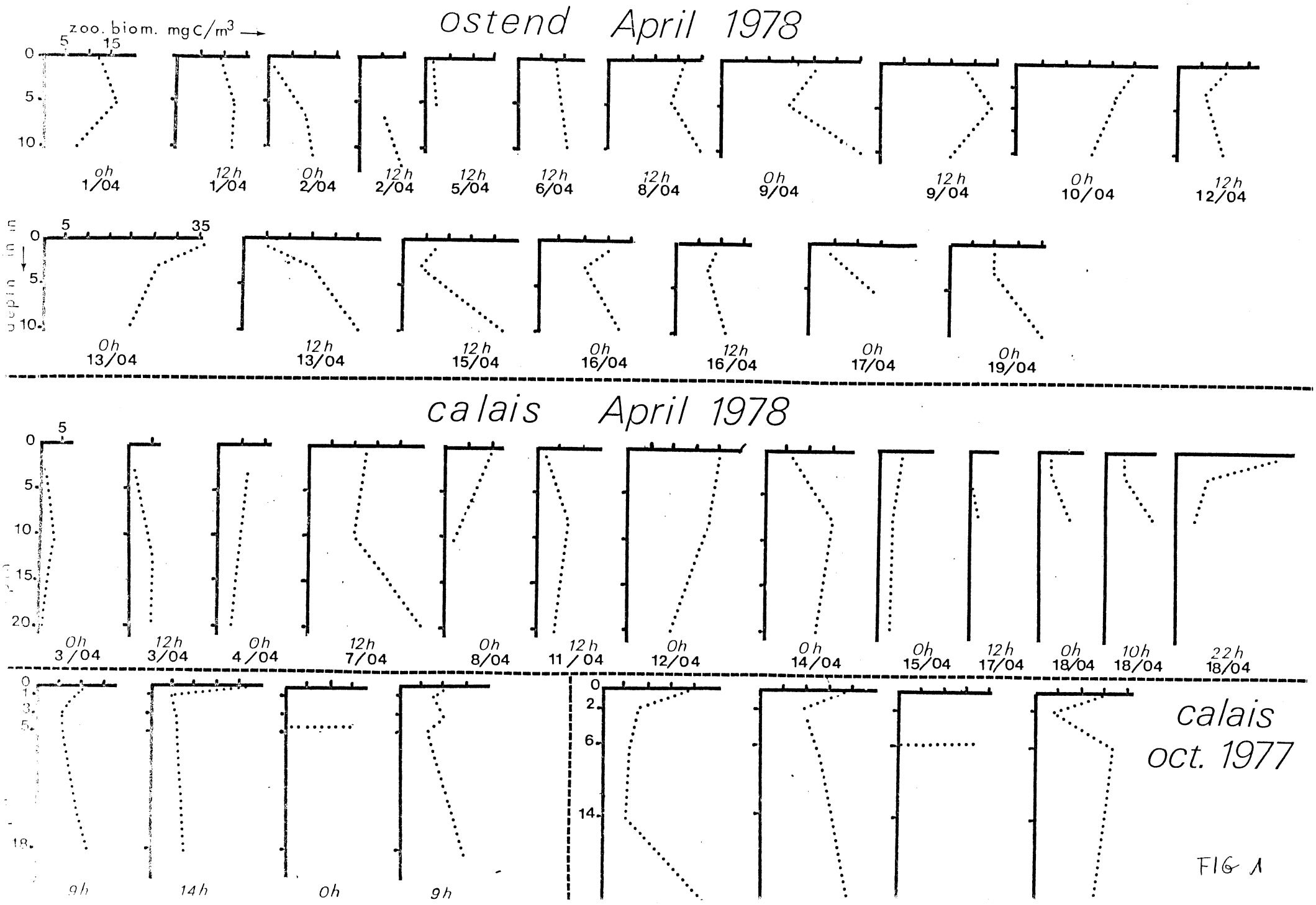

ostend April 1978
zoo. biom. mgC/m³
5
15
0
5
10
0h 1/04
12h 1/04
0h 2/04
12h 2/04
12h 5/04
12h 6/04
12h 8/04
0h 9/04
12h 9/04
0h 10/04
12h 12/04
depth in m
5
35
0
5
10
0h 13/04
12h 13/04
12h 15/04
0h 16/04
12h 16/04
0h 17/04
0h 19/04
calais April 1978
5
0
5
10
15
20
0h 3/04
12h 3/04
0h 4/04
12h 7/04
0h 8/04
12h 11/04
0h 12/04
0h 14/04
0h 15/04
12h 17/04
0h 18/04
10h 18/04
22h 18/04
0
1
3
5
18
9h
14h
0h
9h
0
2
6
14
calais oct. 1977

FIG 1

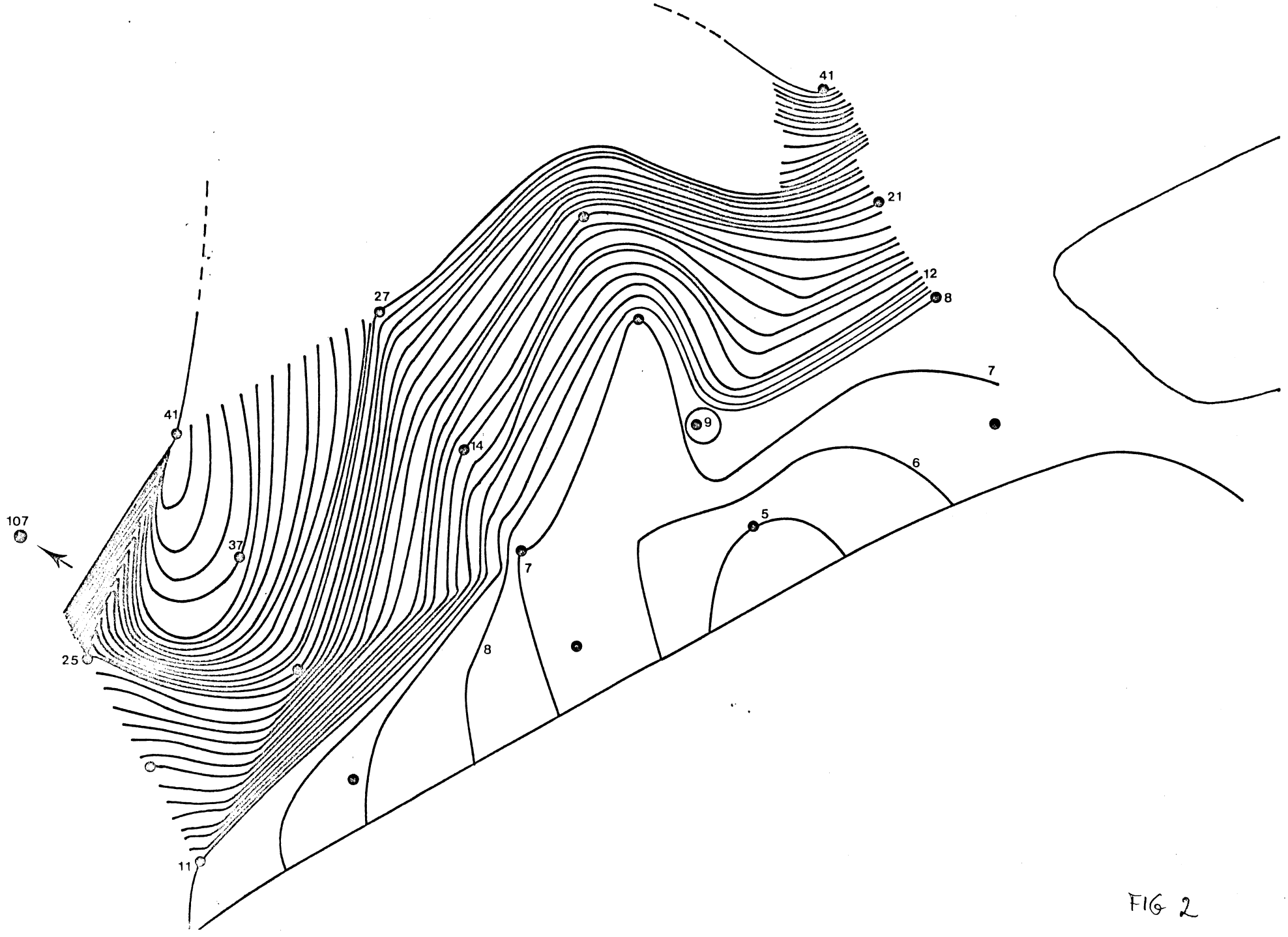


FIG 2

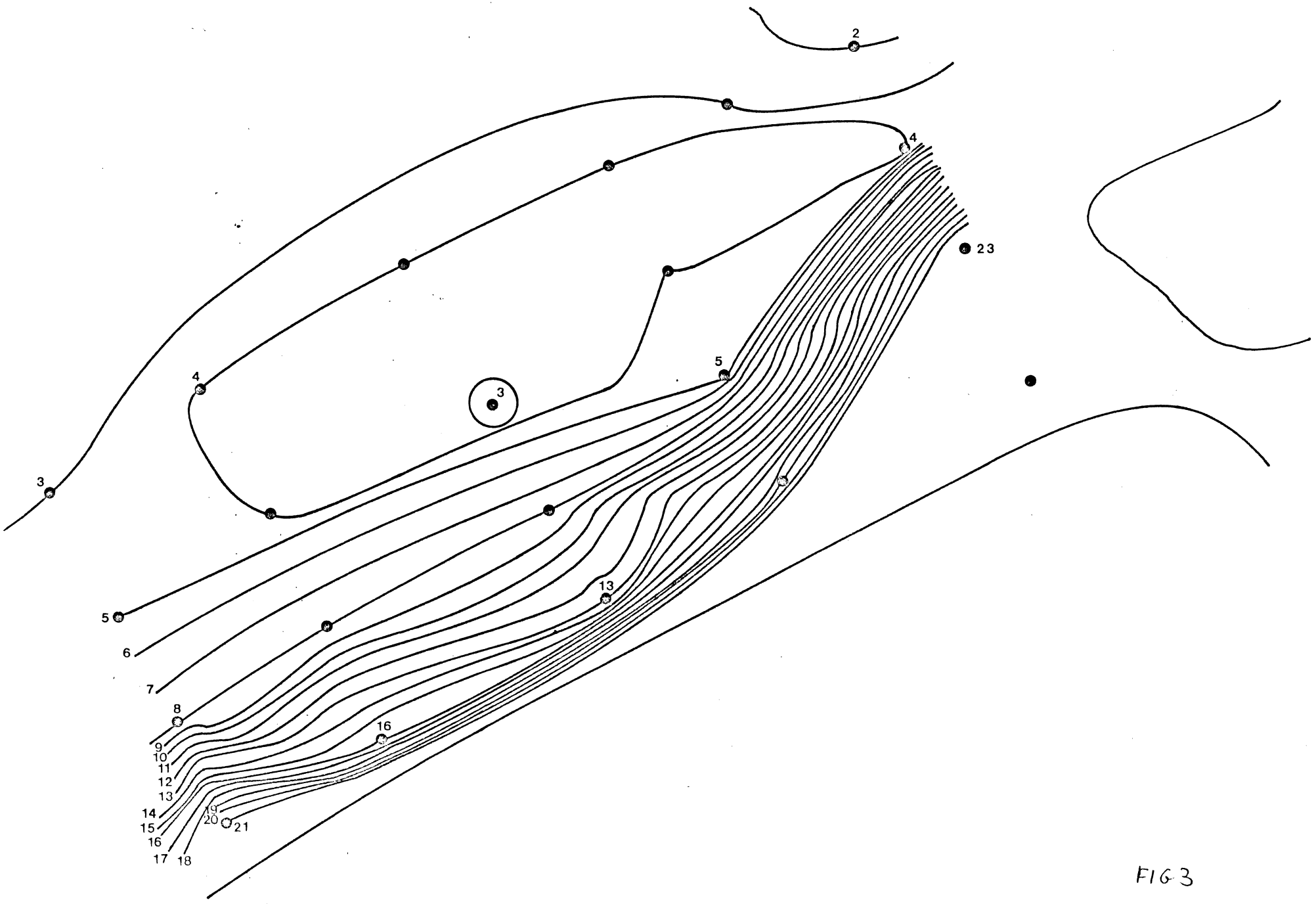


FIG 3

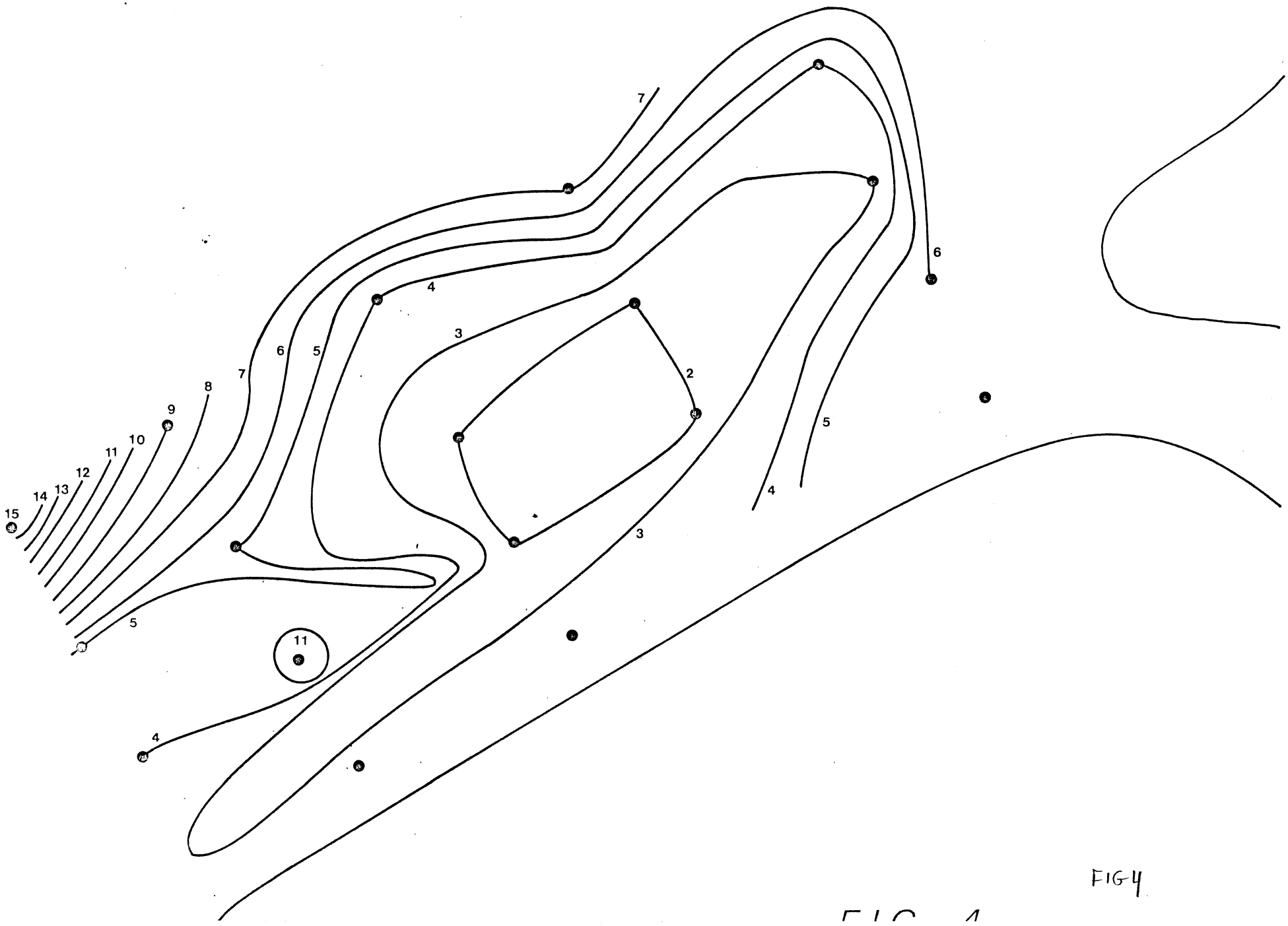


FIG 4

Zooplancton Biomass
Season variation

Ostend St. 33 ; -3 m ; 12 h

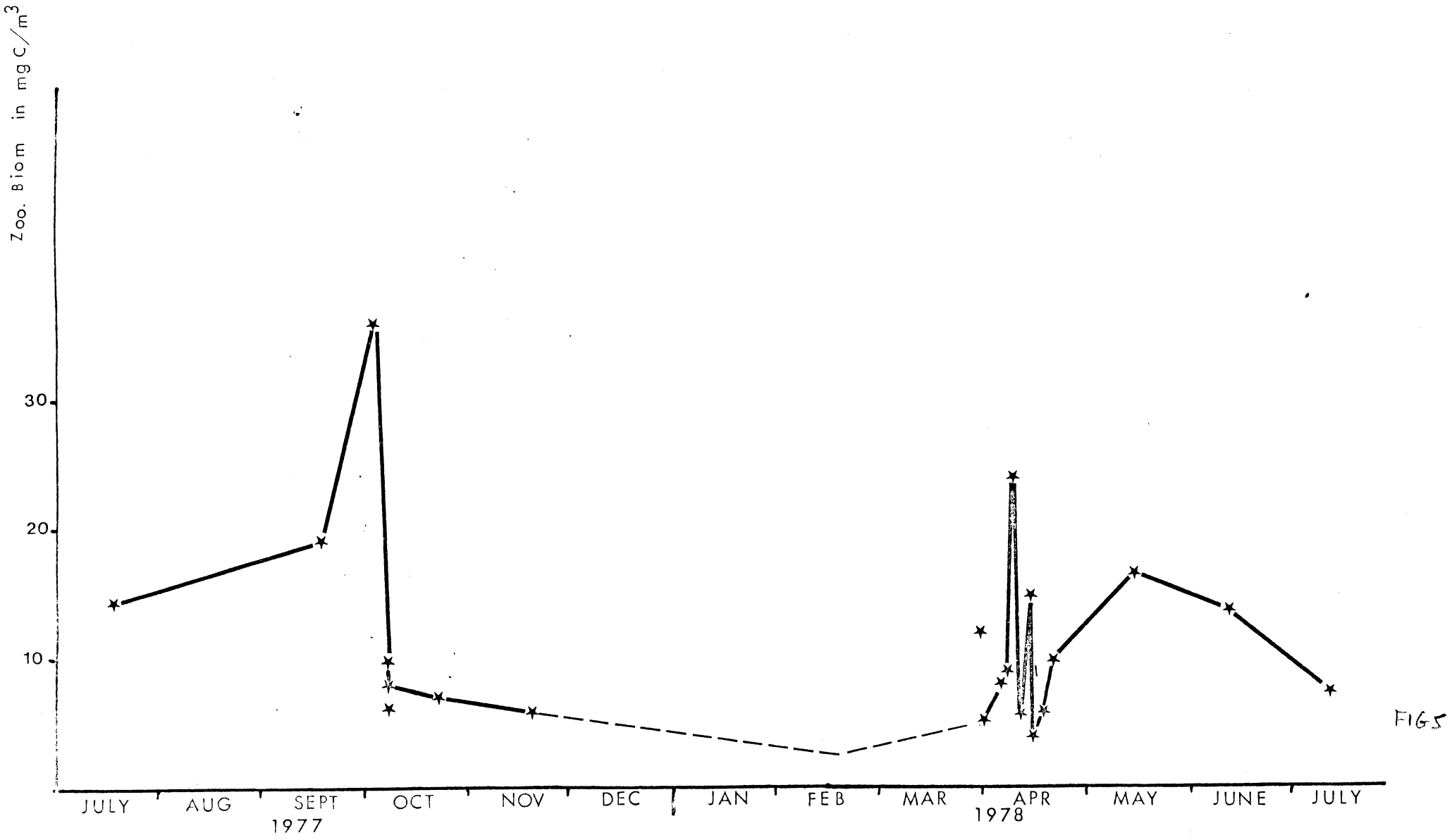
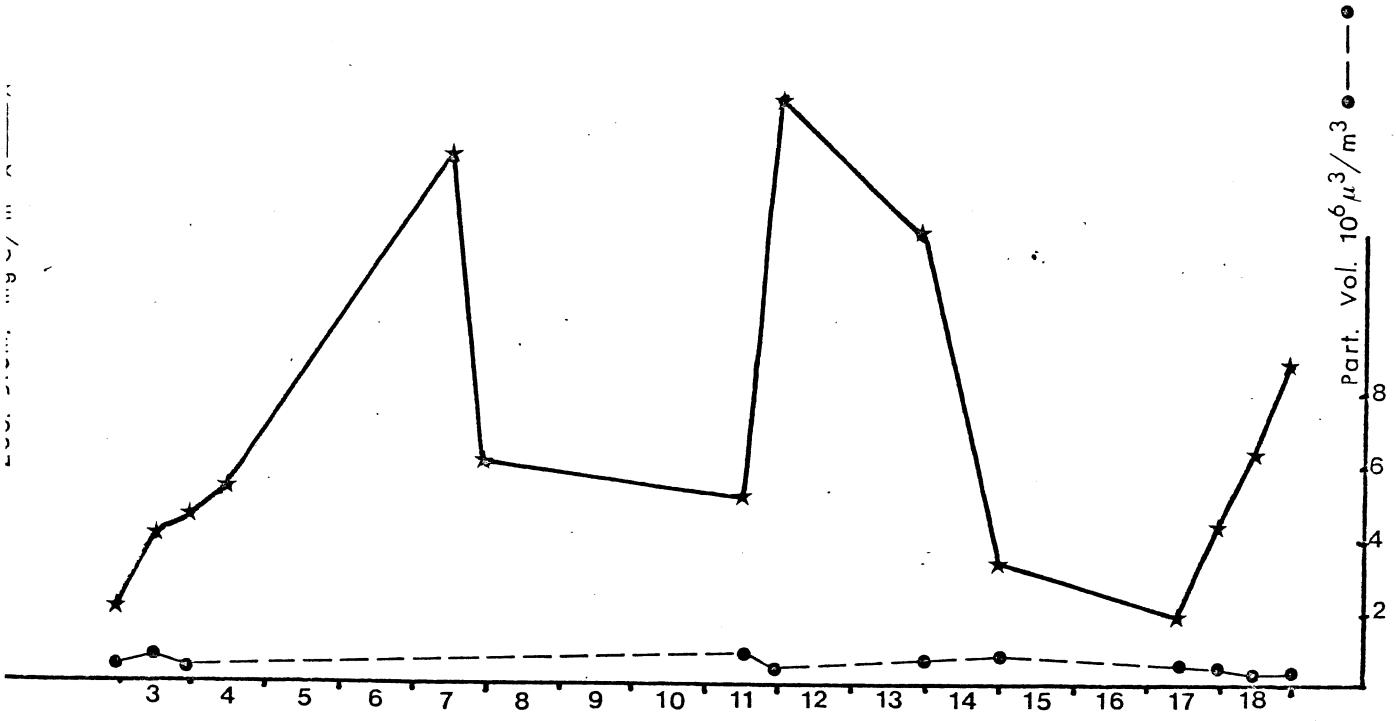


FIG 5

CALAIS



OSTEND

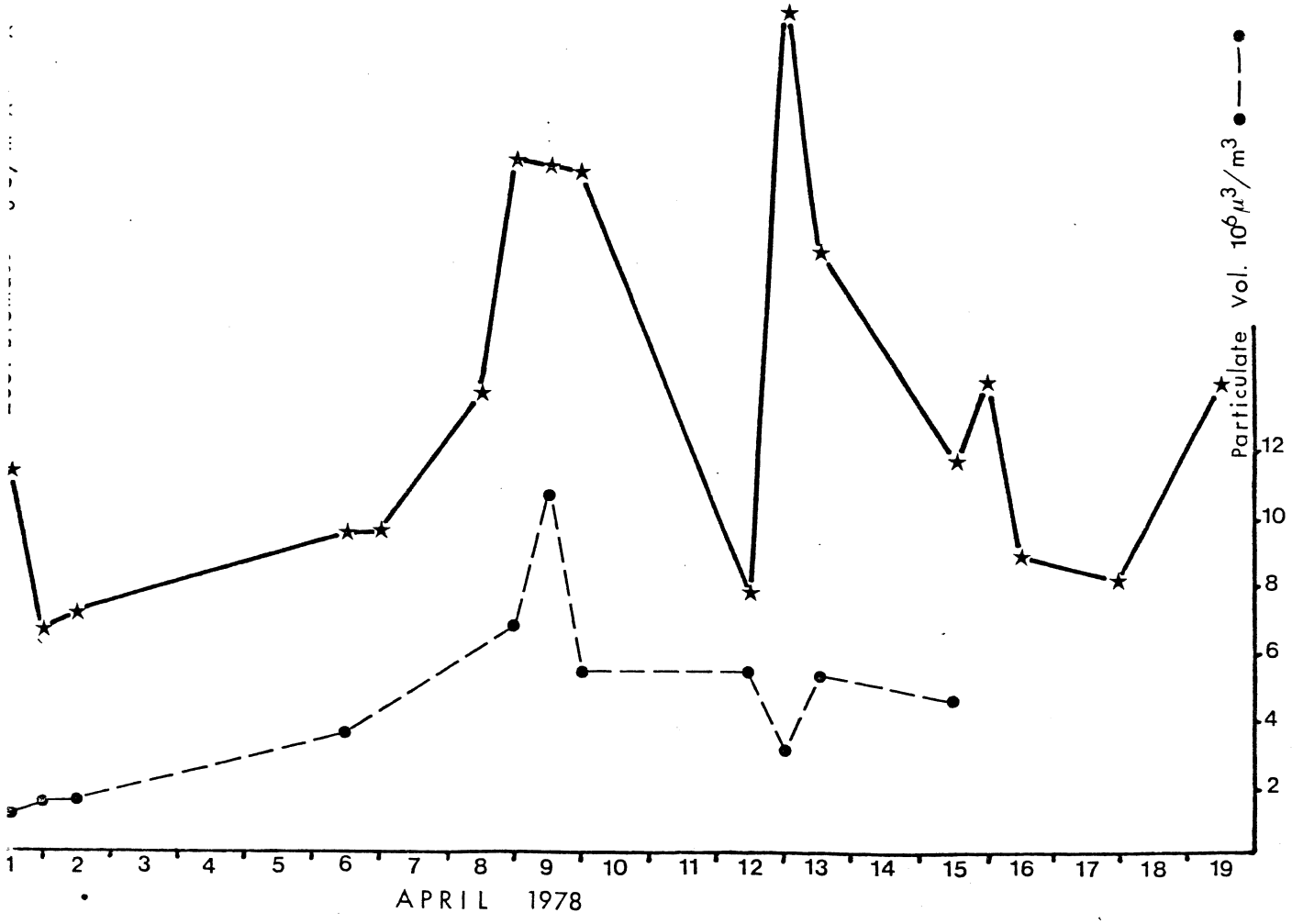


FIG 6