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Ödsmål, Kville sn, Bohuslän

Hällristning
Fiskare från
bronsåldern

Rock carving
Bronze age
fishermen



MEDDELANDE från
HAVSFISKELABORATORIET · LYSEKIL

nr
154

BROFJORDEN III

PRIMARY PRODUCTION AT BORNÖ 1963

by

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Primary production measurements with the C^{14} -technique were carried out by Kwiecinski at the Bornö Station during the summer of 1963. They were performed as half-day measurements from noon to sunset, with dark fixation bottles at selected depths.

The obtained values have been computed by the algorithm for primary production by Öström presented in Meddelande från Havsfiskelaboratoriet i Lysekil No 149. For some reason the presentation of the data was delayed, but as direct primary production measurements in the area are sparse, these data must be considered valuable for comparisons with the present measurements in Brofjorden.

The values have been integrated to obtain the production under a squaremeter of the surface and also converted into the unit $mg\ C/m^2$ and day by multiplying with the length of the day in hours.

It might seem daring to let data from one or two occasions be representative for the entire month, but the values were also converted to $g\ C/m^2$ month in order to give some idea of the order of magnitude of the primary production over longer periods of time.

Calculations of the primary production at Alsbäck have been done by Kwiecinski using Steele's (1956) mathematical model and phosphate data from the same period of time as the C^{14} -measurements. The result is presented in a histogram.

References.

- Steele, J.H., 1956: Plant production on the Fladen Ground. Journal of the Marine Biological Ass. of U.K. Vol. 35, No. 1.
- Steele, J.H., 1957: A comparison of plant production estimates using ^{14}C and phosphate data. Journal of the Marine Biological Ass. of U.K. Vol. 36, No. 1.
- Svansson, A., Kwieciński, B. and Michanek, G., 1962: On primary production in the Baltic. Journal de Cons. Int. pr. Exploration de la Mer. Plancton Comité, No. 131.
- Öström, B., 1973: A formula system for primary production. Fishery Board of Sweden, Laboratory of Marine Research, Lysekil, comm. No. 149.

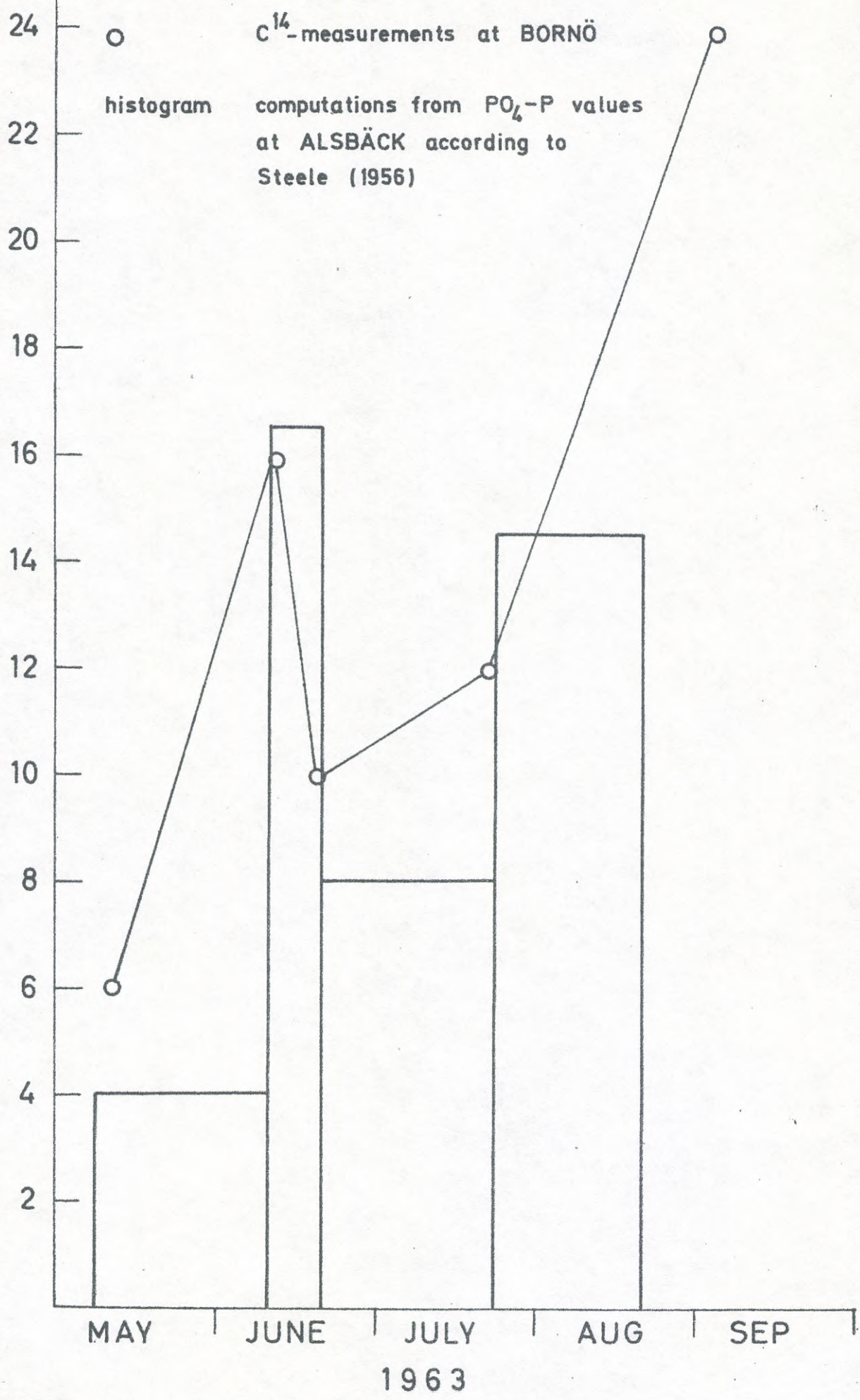
PRIMARY PRODUCTION AT BORNÖ 1963

2.

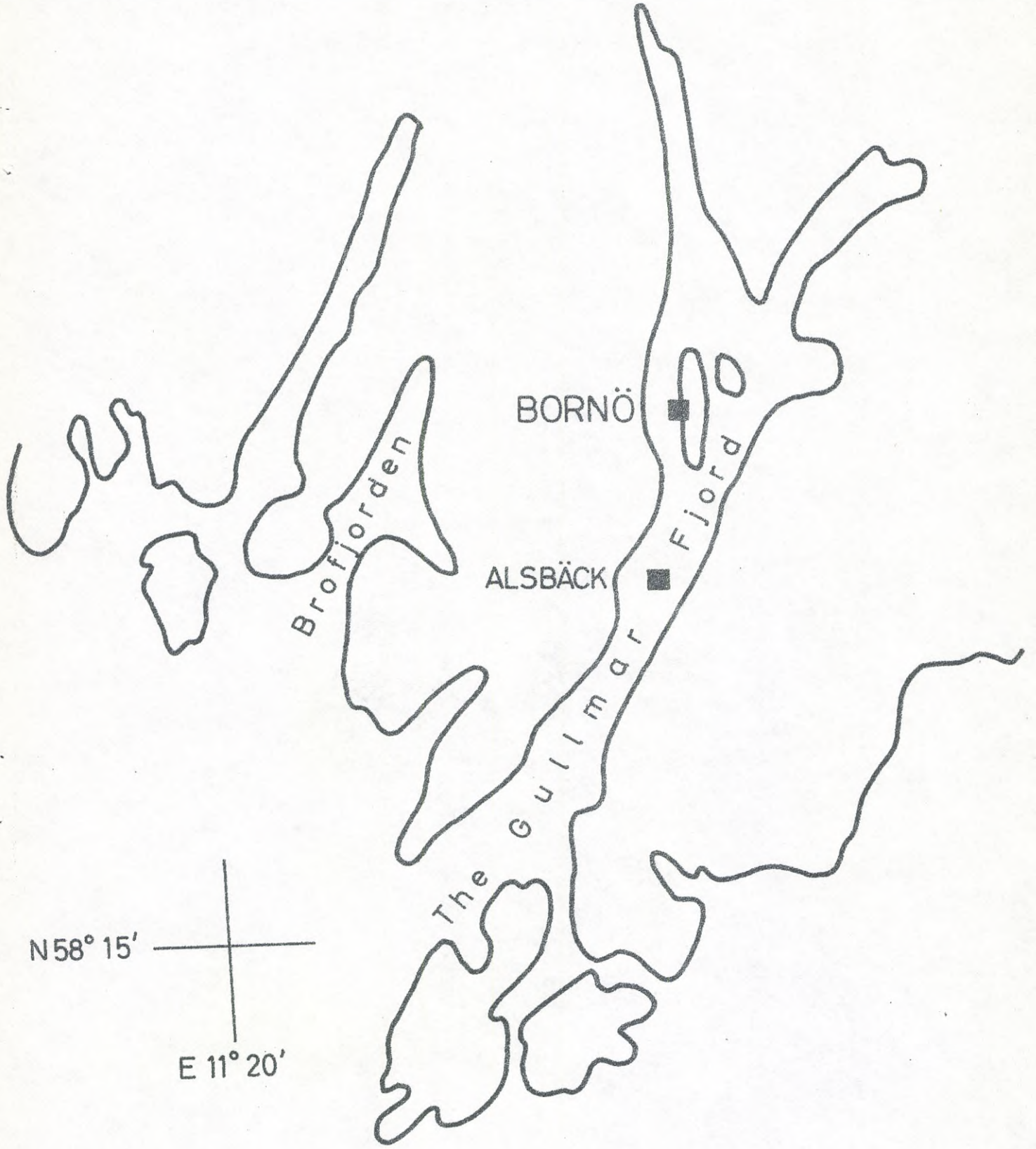
Date	Depth [m]	Salinity [‰]	Temp [°C]	Primary production			
				[mgC/m ³ and h]	[mgC/m ³ and day]	[mgC/m ² and day]	[µgC/m ² and month]
63 05 08	0	18.89	8.6	5.40		87.3	
	5	20.94	6.3	.30		4.8	
	10	24.16	5.4	.04		.6	
	15	29.48	4.8	.02		.3	
	20	31.59	4.3	.02		.3	
	30	33.50	4.8	.01		.2	
						199	6
63 06 11	0	17.95	20.5	3.95		72.5	
	5	20.75	14.7	3.15		57.8	
	10	28.70	6.1	.54		9.9	
	15	31.65	4.5	.04		.7	
	20	31.75	4.7	.01		.2	
	30	33.75	5.5	.00		.0	
						520	16
63 06 18	0	21.00	16.8	4.75		87.9	
	5	22.05	15.8	.80		14.8	
	10	31.95	6.2	.36		6.7	
	15	33.25	5.6	.05		.9	
	20	34.00	4.8	.02		.4	
	30	34.55	6.0				
						324	10
63 07 23	0	22.50	16.6	5.84		98.3	
	2,5	22.85	16.7	4.11		69.2	
	5	23.60	16.9	1.75		29.5	
	10	31.50	13.0	.21		3.5	
	15	31.25	12.8	.08		1.3	
	20	31.45	12.3	.03		.5	
						399	12
63 09 03	0	15.25	16.0	22.0		306	
	1	16.05	16.1	25.4		354	
	2,5	24.30	16.8	2.54		35.4	
	5	24.40	16.7	.66		9.2	
	10	29.65	14.6	.06		.8	
	15	31.75	13.0	.05		.7	
						784	24

BORNÖ 1963

[g C/m² and month]



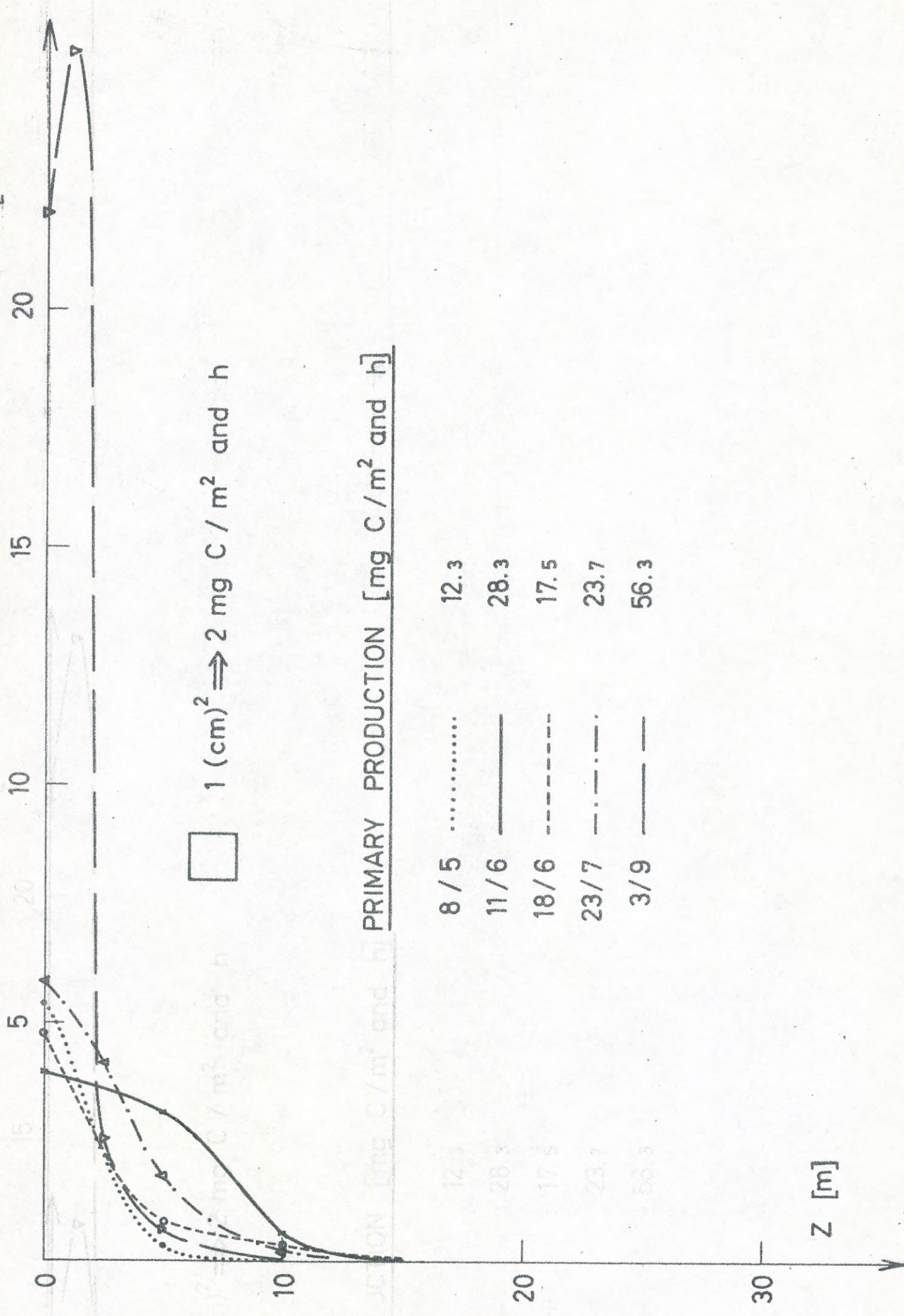
○ C¹⁴-measurements at BORNÖ
histogram computations from PO₄-P values at ALSBÄCK according to Steele (1956)



N 58° 15'

E 11° 20'

Prim. Prod. [mg C / m³ and h]



□ 1 (cm)² ⇒ 2 mg C / m² and h

PRIMARY PRODUCTION [mg C / m² and h]

8 / 5	12.3
11 / 6	————	28.3
18 / 6	-----	17.5
23 / 7	-.-.-.-.	23.7
3 / 9	-----	56.3

