Table . Physical characteristics of Smiley Lake.

Lake area 25.9 ha (64.1 acres) Lake elevation 300 m

Lake volume 5.68×10^6 m^3 (4.60×10^3 acre-feet)

Maximum depth 54 m Mean depth 21.9 m

Shoreline length 2,430 m Shoreline development 1.35

Watershed area 236 ha Volume development 1.22

Ratio of lake area to watershed area 1:9

Littoral development (area <10 m) 34.2%

Basin slope (0-10 m) 23%, (10-54 m) 28%

Mean annual outlet flow 0.25 m^3/s Mean annual precipitation 410 cm

Theoretical water residence time 0.73 years

Depth strata (m)	Area of strata as a percentage of total area	Volume of strata as a percentage of total area
0- 5	19.2	20.6
5- 10	15.0	16.7
10- 20	17.4	25.8
20- 30	16.6	18.2
30- 40	12.3	11.6
40- 50	11.3	6.1
50- 54	4.6	1.0
54	3.6	---

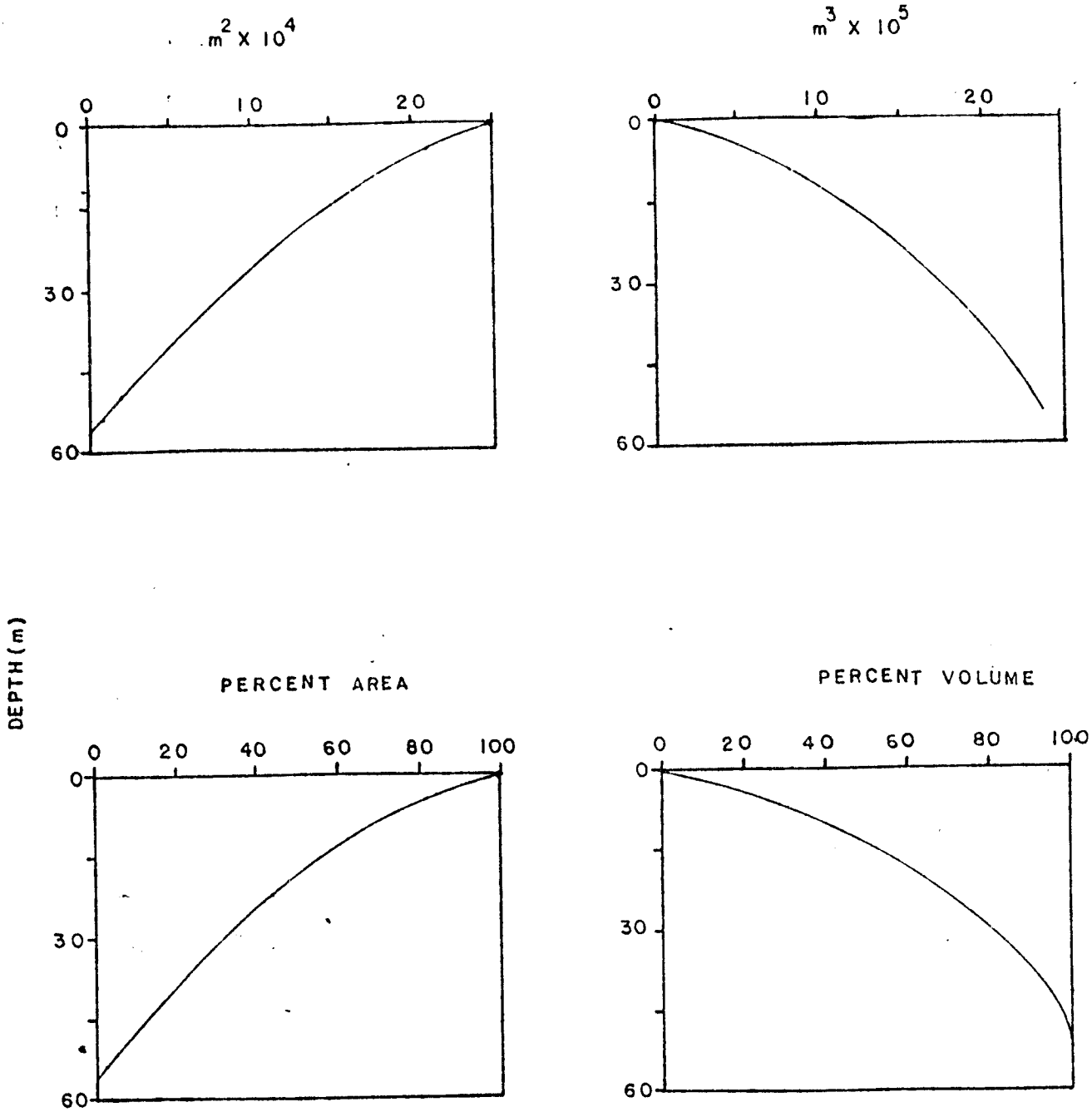
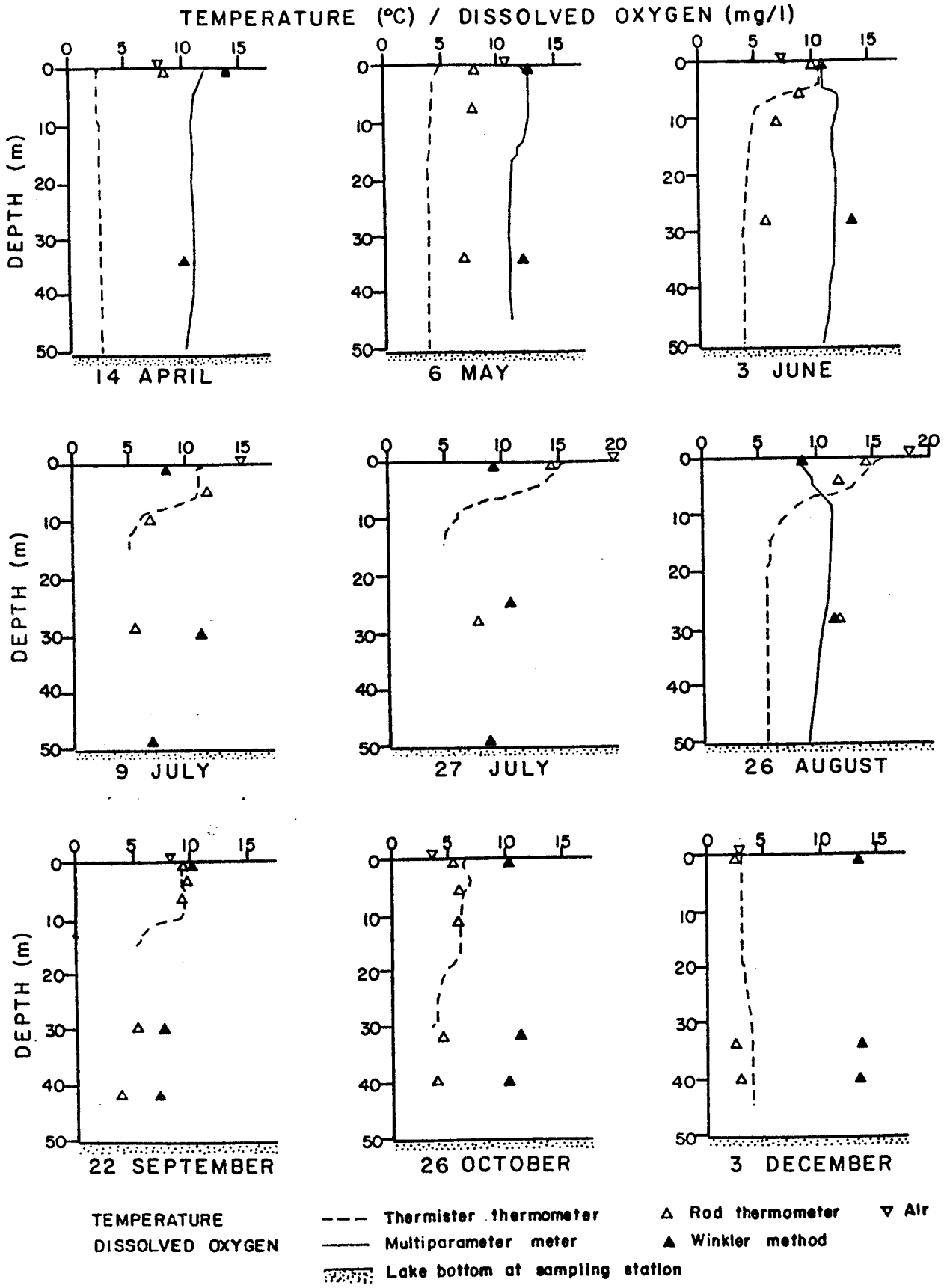
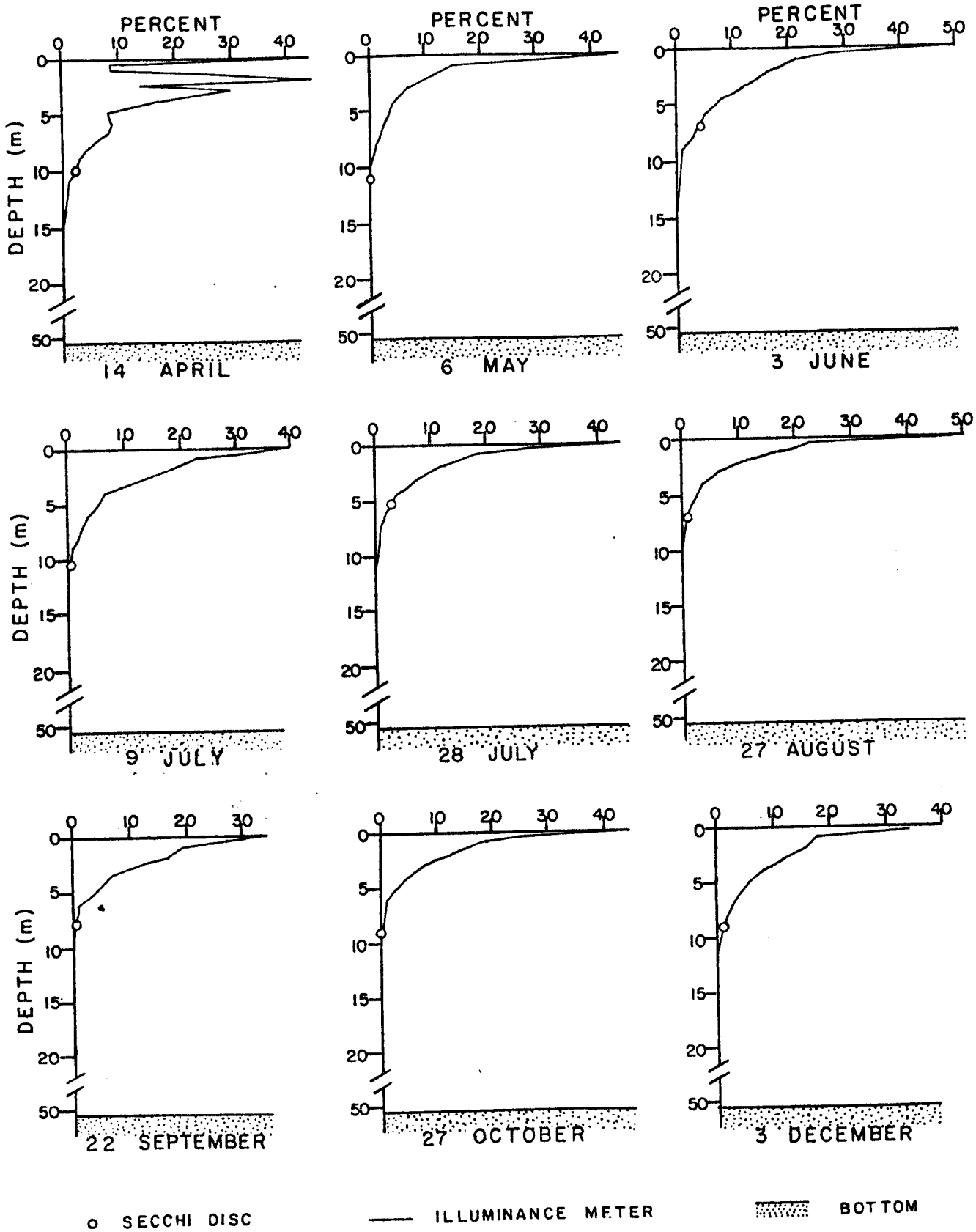


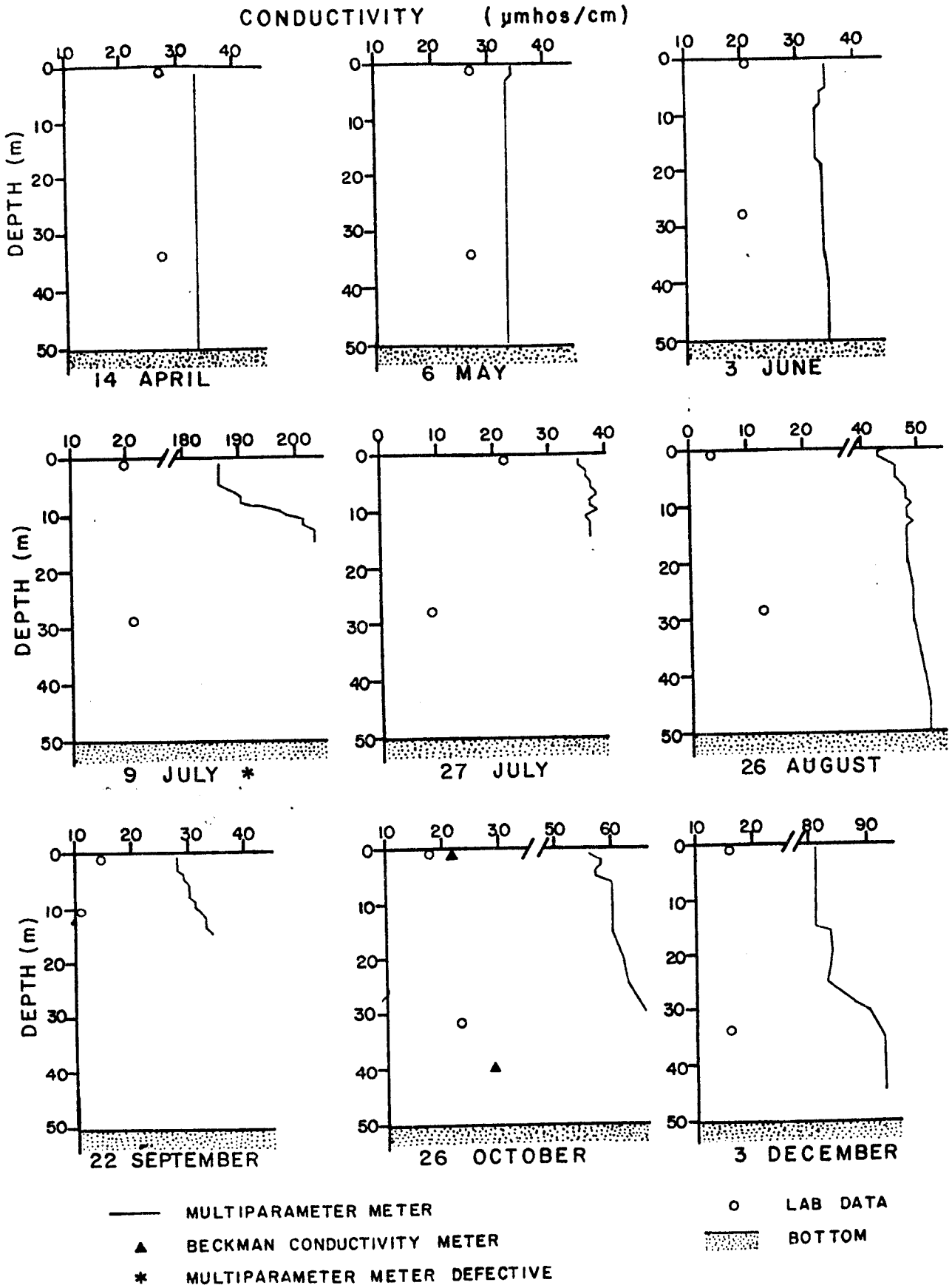
Figure 3. Hypsographic (depth-area) curves and depth-volume curves of Smiley Lake.

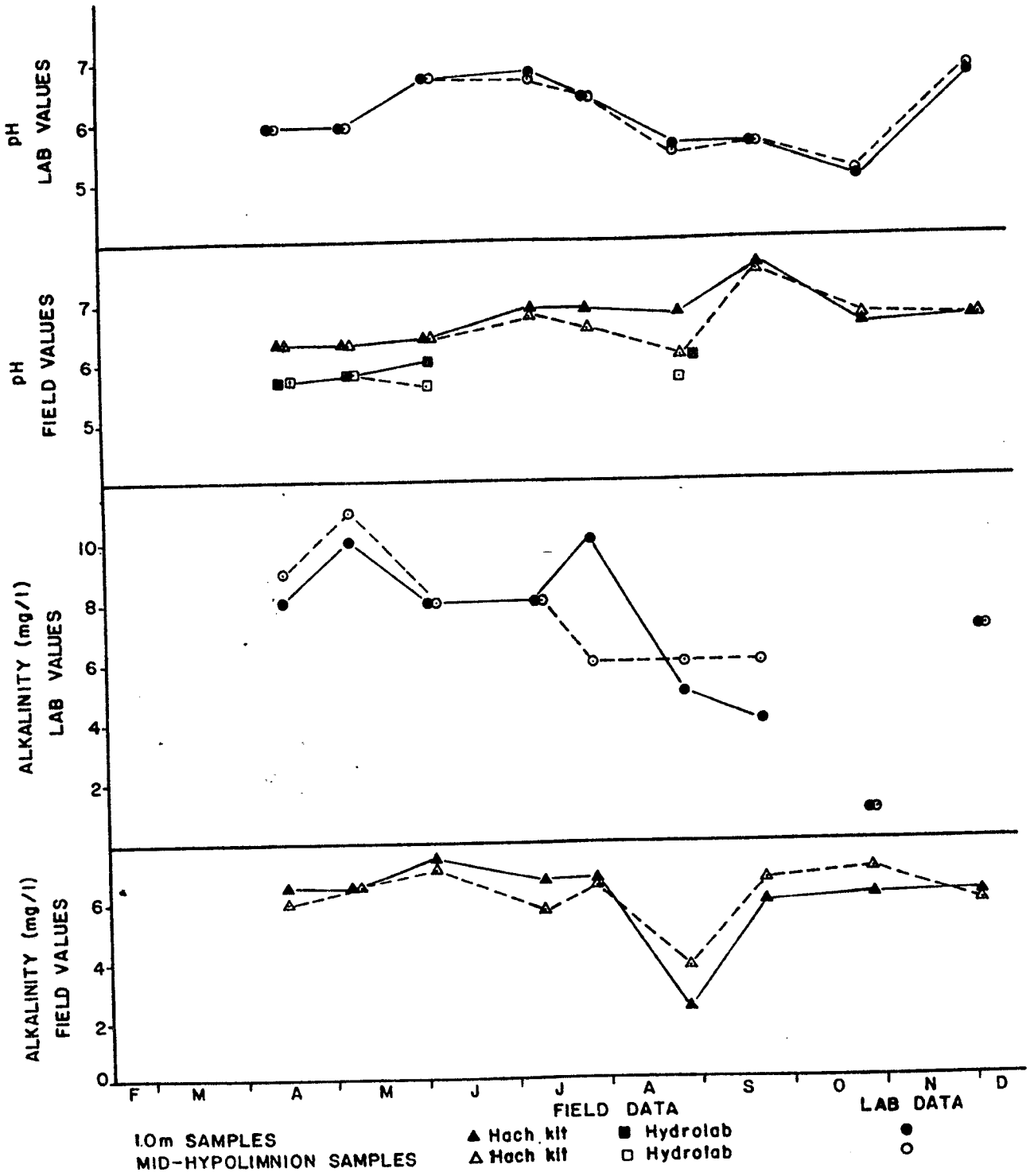

TEMPERATURE (°C) / DISSOLVED OXYGEN (mg/l)
DEPTH (m)
14 APRIL
6 MAY
3 JUNE
9 JULY
27 JULY
26 AUGUST
22 SEPTEMBER
26 OCTOBER
3 DECEMBER
TEMPERATURE
DISSOLVED OXYGEN
Thermister thermometer
Multiparameter meter
Lake bottom at sampling station
Rod thermometer
Winkler method
Air

Smoley [illegible] 1981.

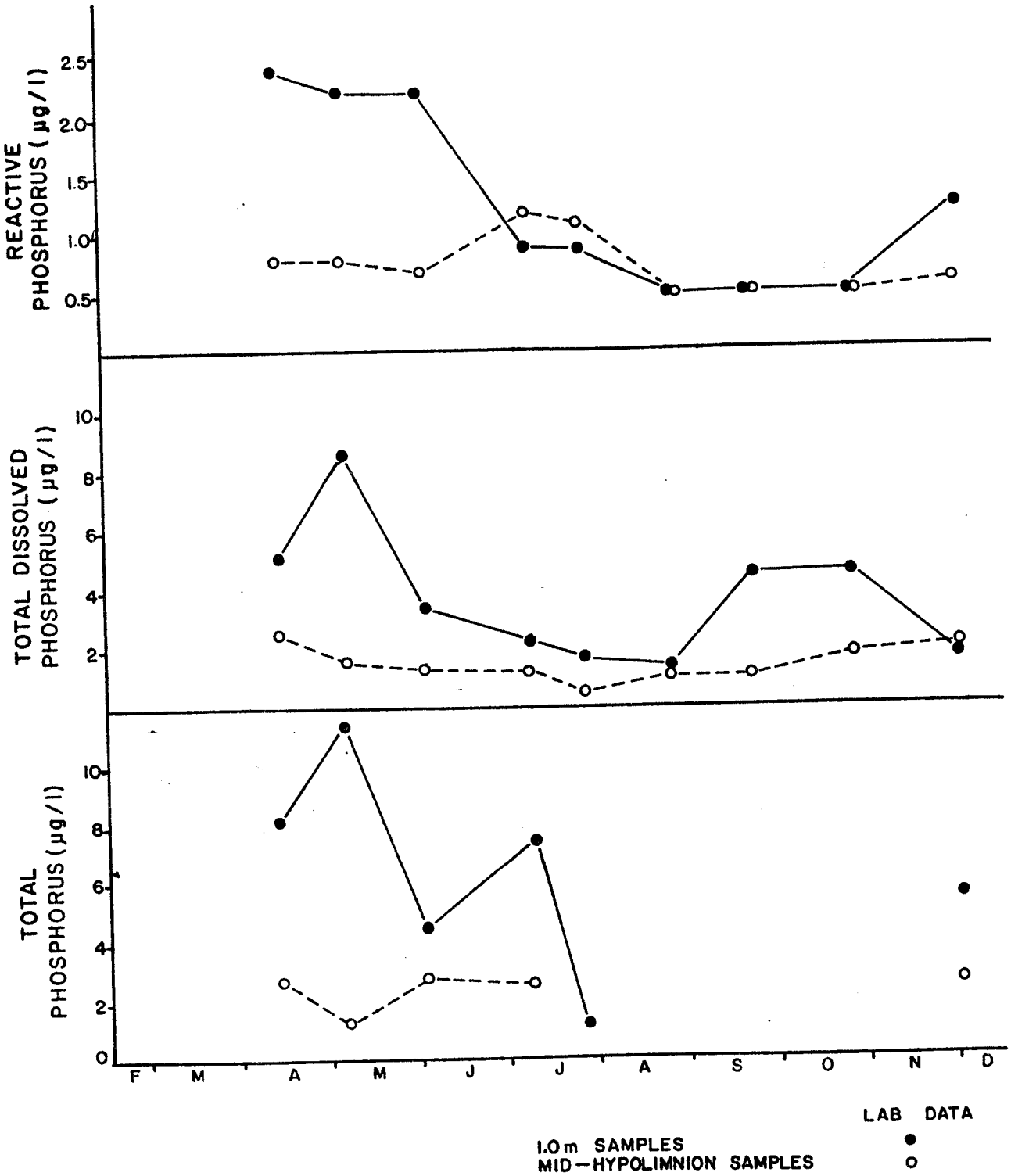


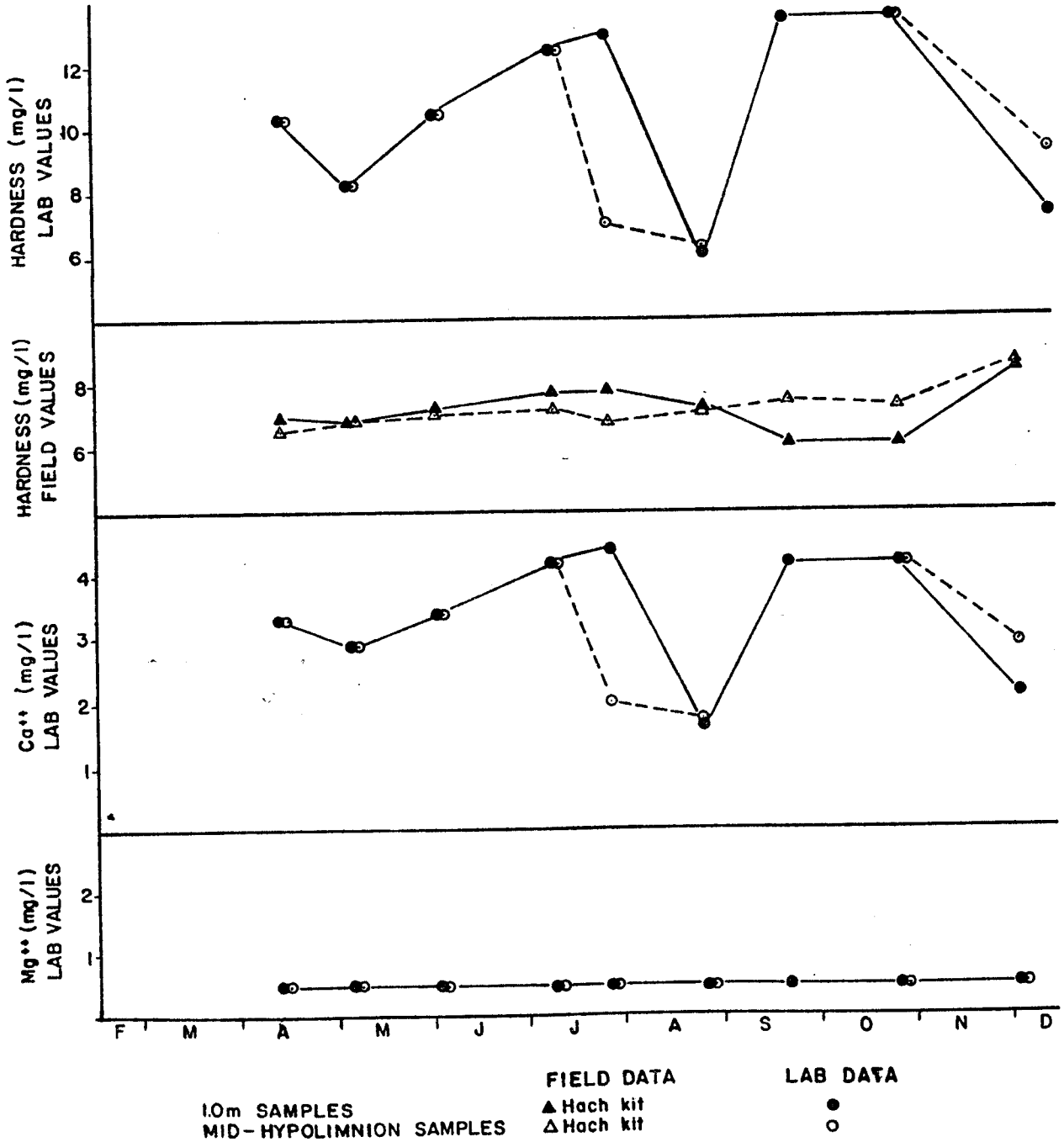
Smiley Lake; [illegible] 1981.


CONDUCTIVITY (µmhos/cm)
DEPTH (m)
14 APRIL
6 MAY
3 JUNE
9 JULY *
27 JULY
26 AUGUST
22 SEPTEMBER
26 OCTOBER
3 DECEMBER
MULTIPARAMETER METER
BECKMAN CONDUCTIVITY METER
* MULTIPARAMETER METER DEFECTIVE
LAB DATA
BOTTOM

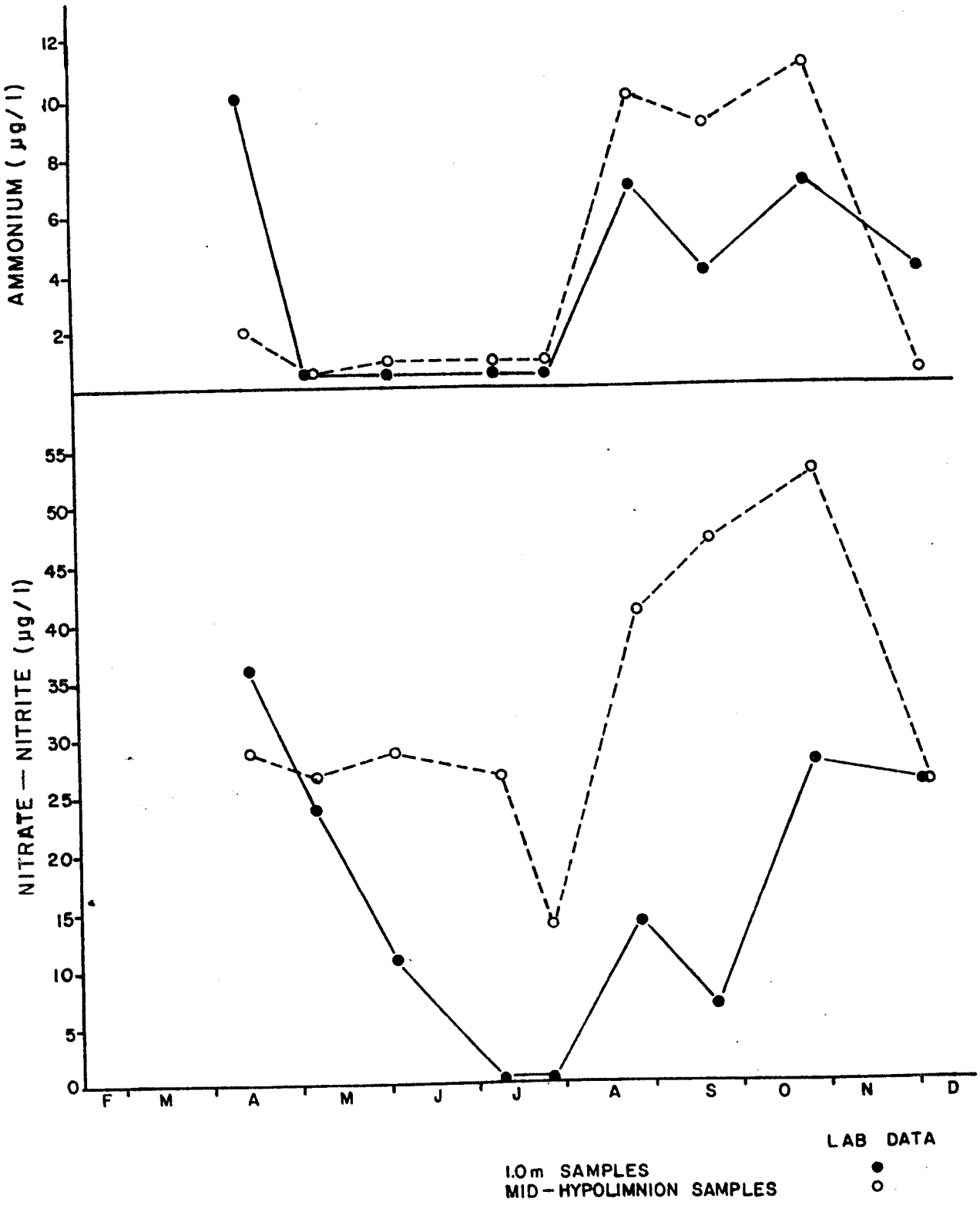


[illegible] lake [illegible] sampling station [illegible]

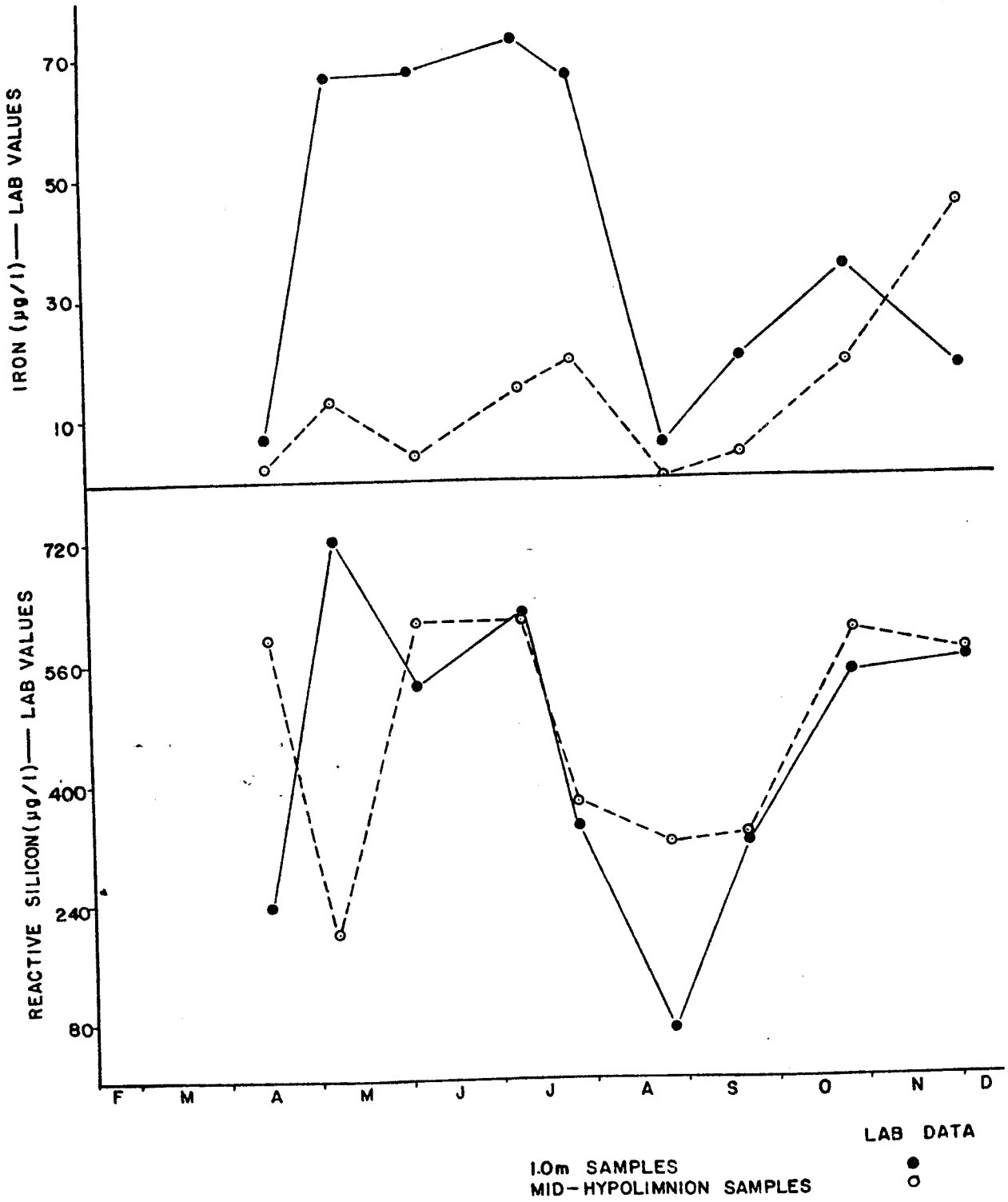

REACTIVE PHOSPHORUS (µg/l)
2.5
2.0
1.5
1.0
0.5
TOTAL DISSOLVED PHOSPHORUS (µg/l)
10
8
6
4
2
TOTAL PHOSPHORUS (µg/l)
10
8
6
4
2
0
F
M
A
M
J
J
A
S
O
N
D
LAB DATA
1.0m SAMPLES
MID-HYPOLIMNION SAMPLES


HARDNESS (mg/l) LAB VALUES
12
10
8
6
HARDNESS (mg/l) FIELD VALUES
8
6
Ca++ (mg/l) LAB VALUES
4
3
2
1
Mg++ (mg/l) LAB VALUES
2
1
F
M
A
M
J
J
A
S
O
N
D
FIELD DATA
LAB DATA
1.0m SAMPLES
MID-HYPOLIMNION SAMPLES
▲ Hach kit
△ Hach kit
●
○

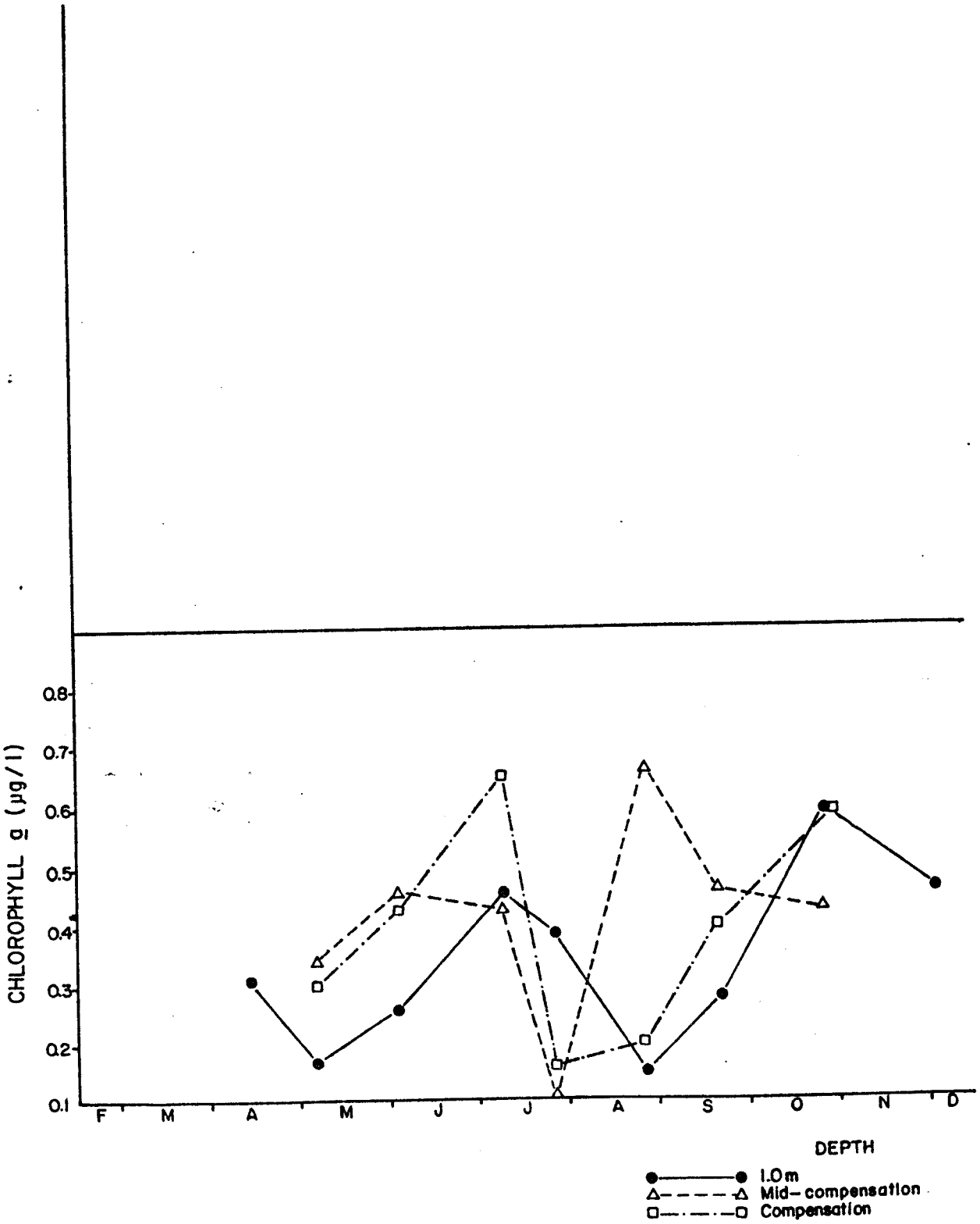
[illegible] Lake, [illegible] 1981



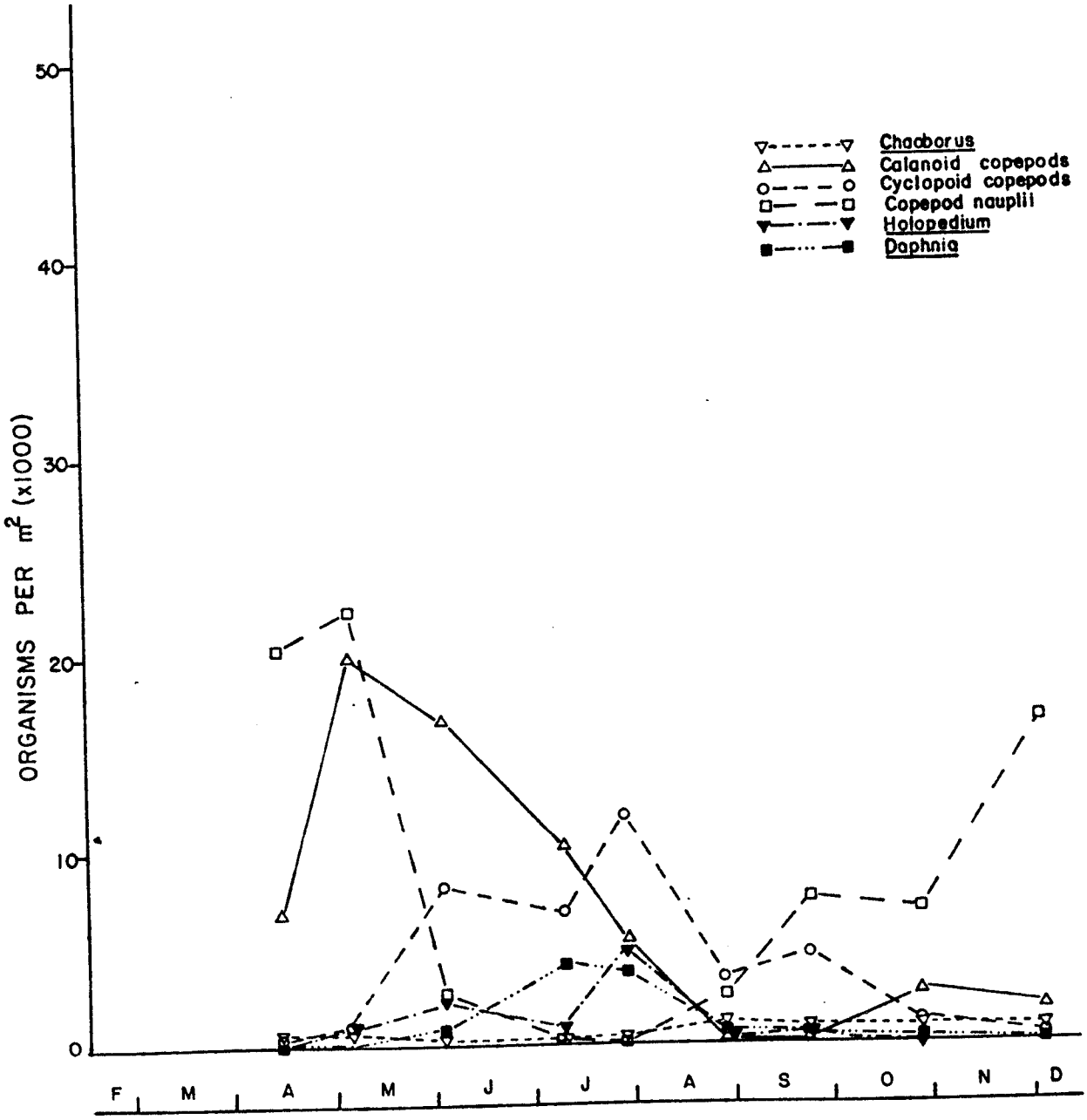
Cooley Lake ; X, sampling station ; 91



Smiley Lake; [illegible] sampling station; 1981.



Smiley Lake; phytoplankton chlorophyll a at X, sampling station; 1981



Smiley Lake; [illegible] density at X, sampling station, 1981.

Table 3. Zooplankton density in Smiley Lake in terms of number per m^2 and (per m^3) as estimated from vertical-tow samples, 1981.

Sample date	Tow Depth (m)	Sum of large and preferred zooplankters 2/	Amphipoda	Diptera	Copepoda			Cladocera		
			Gammaridae	Chaoborus 2/	Calanoida	Cyclopoida	Nauplii	Daphnia	Bosmina	Holopedium
14 Apr 1/	40.0	7,540 (188)	0 (0)	660 (17)	6,836 (171)	168 (4)	20,290 (507)	44 (1)	0 (0)	0 (0)
5 May	48.0	20,621 (430)	0 (0)	754 (16)	19,868 (414)	1,019 (21)	22,247 (463)	0 (0)	0 (0)	1,019 (21)
3 June	48.0	17,835 (372)	10 (<1)	331 (7)	16,643 (347)	8,151 (170)	2,715 (57)	851 (18)	0 (0)	2,379 (50)
9 July	48.0	14,580 (304)	10 (<1)	306 (6)	10,188 (212)	6,791 (141)	341 (7)	4,075 (85)	0 (0)	678 (14)
28 July	48.0	9,542 (199)	25 (<1)	346 (7)	5,476 (114)	11,717 (244)	127 (3)	3,693 (77)	0 (0)	4,712 (98)
27 Aug	48.0	1,548 (32)	5 (<1)	779 (16)	168 (4)	3,653 (76)	2,888 (60)	596 (12)	0 (0)	341 (7)
21 Sept	48.0	637 (13)	5 (<1)	458 (10)	87 (2)	4,498 (94)	7,728 (161)	87 (2)	0 (0)	87 (2)
26 Oct	45.0	3,841 (85)	0 (0)	866 (19)	2,234 (59)	1,105 (25)	6,877 (153)	341 (8)	341 (8)	87 (2)
3 Dec	40.0	2,837 (71)	0 (0)	713 (18)	2,038 (51)	127 (3)	16,516 (413)	87 (2)	0 (0)	0 (0)

1/ Mean of two samples.

2/ Density values exclude early instar Chaoborus. Recounts and reestimates of Chaoborus densities, including early instars, are being made.