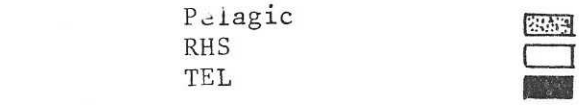
These were Daphnia rosea, D. retrocurva, Diaphanosoma leuchtenbergiana, and one Bosmina sp. This list agrees with the data of Clark and Carter (1974). Other zooplankton inhabiting the lake were copepods and rotifers.

Figures 5 and 6 show the abundance of cladocera and the copepods in the two littoral zone sites and in the vertical transect during the periods of fish sampling. The variation between sites appeared to be rather large. In figure 7 these seasonal abundances between sites have been averaged to give a better indication of general trends in the lake. The Bosmina population was very high in May but was negligible in July and absent from September samples. Copepod populations were also high in May. These later dropped to concentrations nearer to those of Daphnia spp. in July and September.

The size distribution of Daphnia spp. individuals collected from the population in July are presented in figure 8. Individuals between 0.5 and 0.9 mm were clearly more abundant than individuals of other sizes. Larger individuals between 0.9 and 1.5 mm were all equally abundant but at a level almost one third that of the most abundant size class. Figure 9 is presented to compare the sizes of Daphnia consumed by yellow perch (average of all three

Figure 5. Population abundance of D. schodleri (a) and D. retrocurva (b) at various sampling sites on fish collection dates



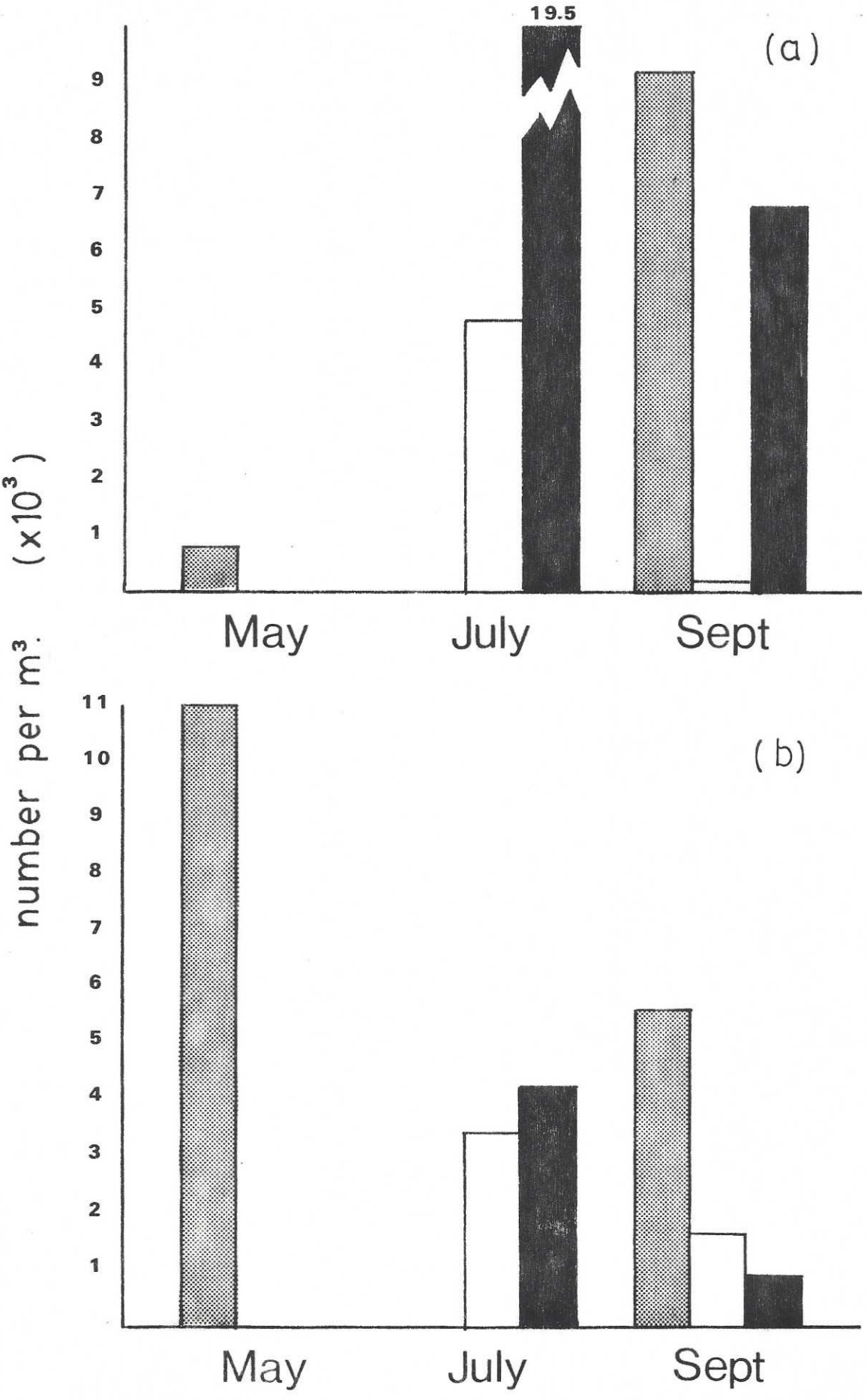

19.5
(a)
9
8
7
6
5
4
3
2
1
(x10³)
number per m³.
May
July
Sept
(b)
11
10
9
8
7
6
5
4
3
2
1
May
July
Sept

Figure 6. Population abundance of D. leuchtenbergiana (a) and Copepoda (b) at various sampling sites on fish collection dates

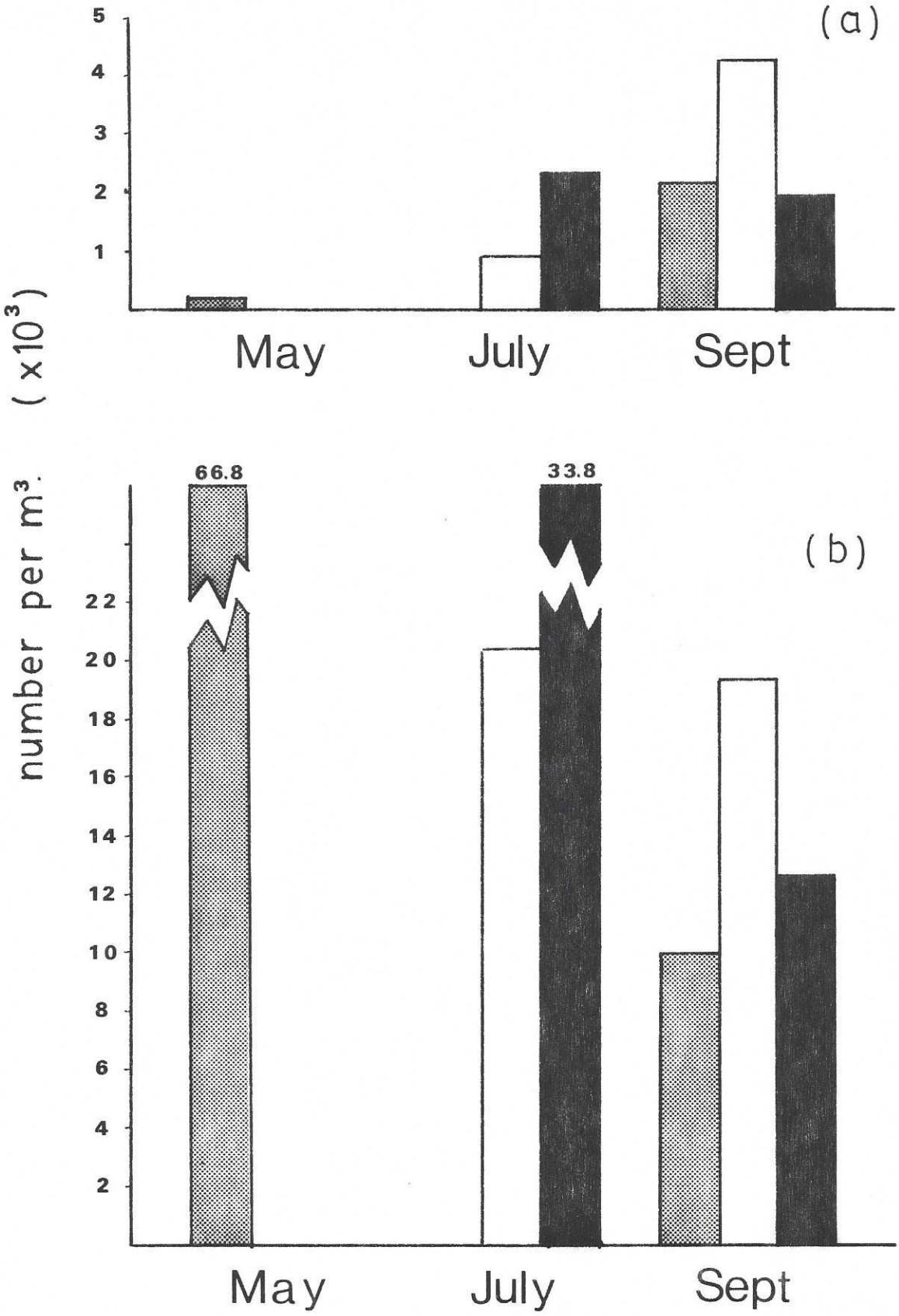
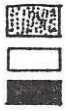

(a)
5
4
3
2
1
(x10³)
May
July
Sept
(b)
66.8
33.8
number per m³.
22
20
18
16
14
12
10
8
6
4
2
May
July
Sept

Figure 7. Averaged abundance of all sites for Copepoda Cladocera, and Bosmina populations on fish collection dates



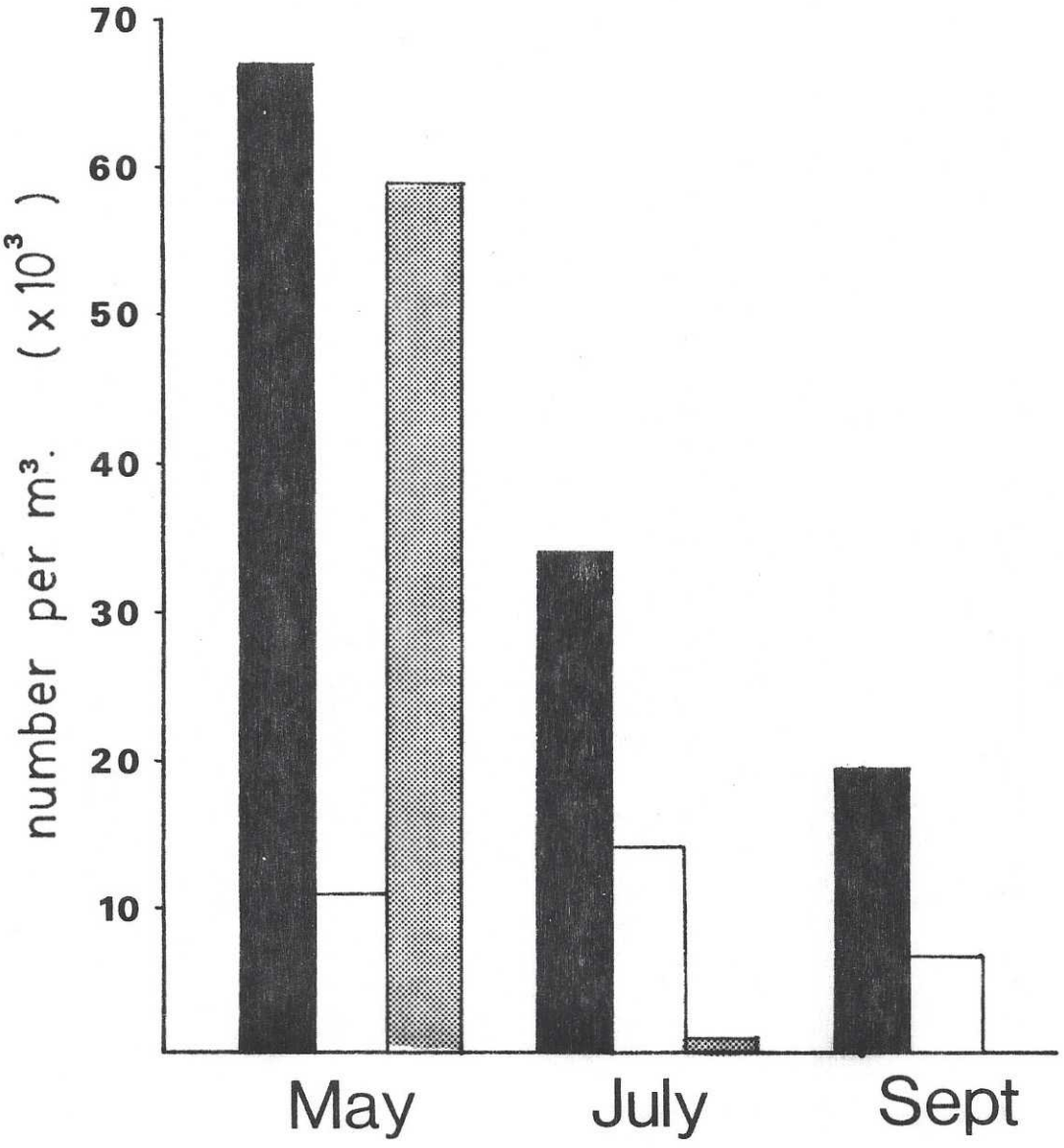

70
60
50
40
30
20
10
number per m³. (x 10³)
May
July
Sept

Figure 8. Size distribution of Daphnia spp. in Sunfish Lake

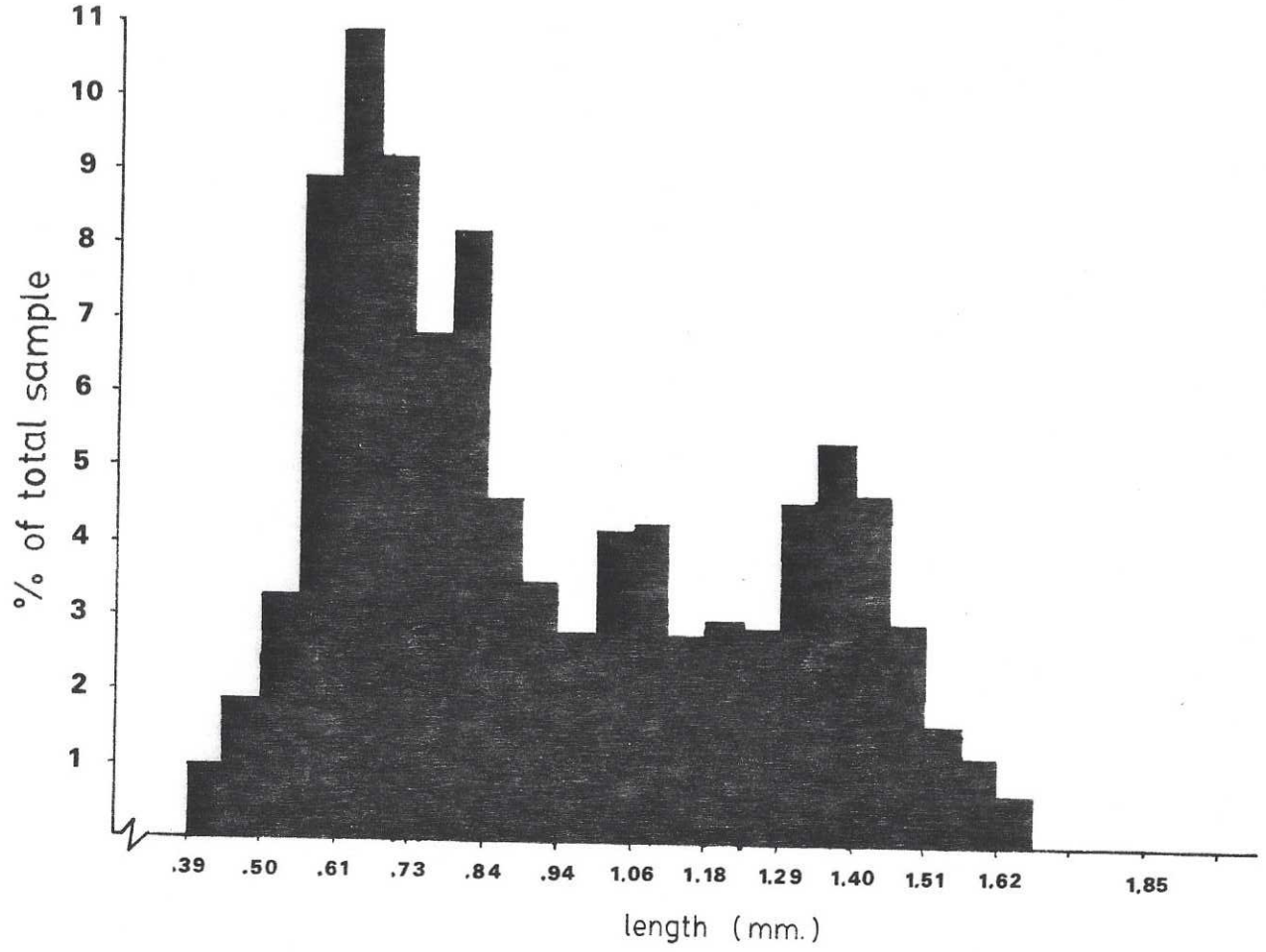
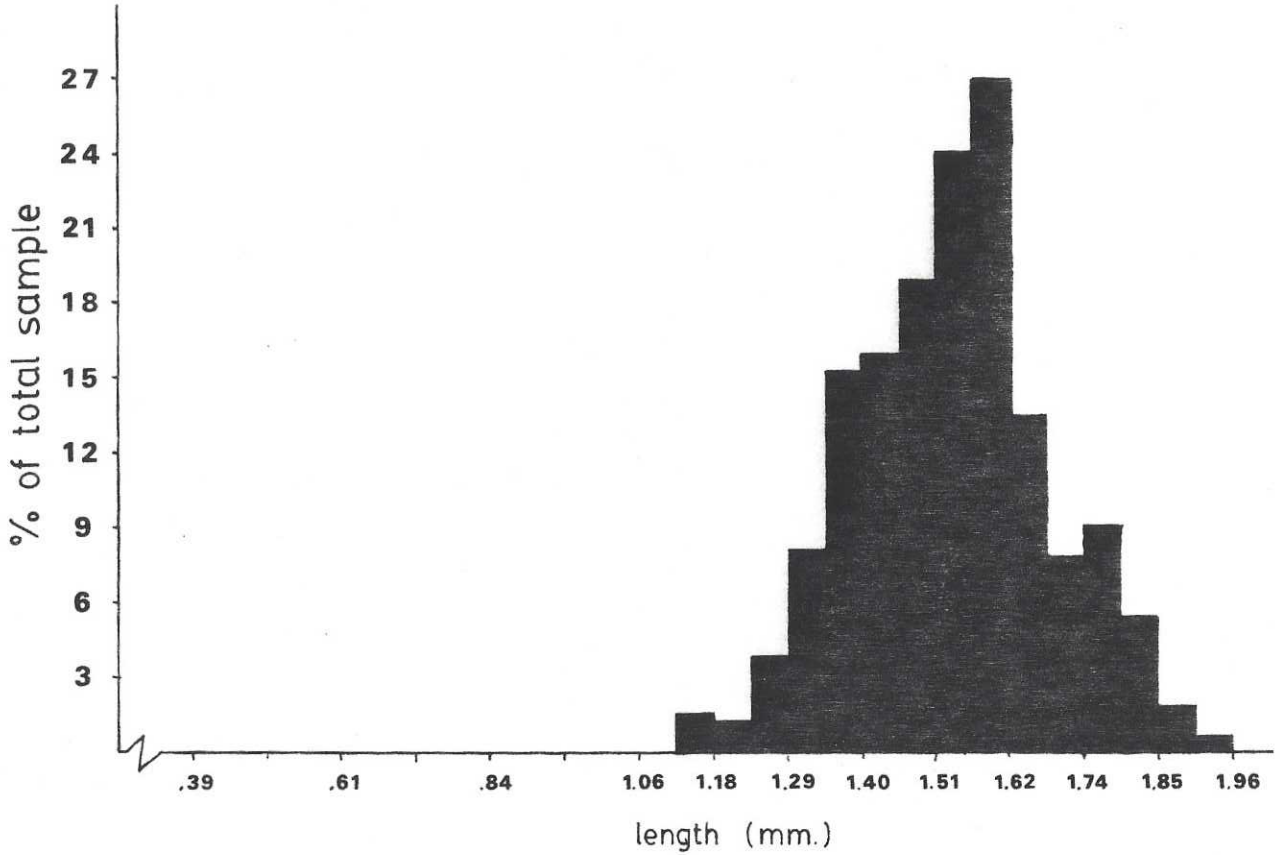

% of total sample
11
10
9
8
7
6
5
4
3
2
1
.39
.50
.61
.73
.84
.94
1.06
1.18
1.29
1.40
1.51
1.62
1.85
length (mm.)

Figure 9. Size distribution of Daphnia spp. consumed by yellow perch


% of total sample
27
24
21
18
15
12
9
6
3
.39
.61
.84
1.06
1.18
1.29
1.40
1.51
1.62
1.74
1.85
1.96
length (mm.)

classes) to the size distribution found in the lake. It appears that perch consumed only the larger individuals in the population even though these were not the most numerous.

FISH GROWTH DATA

Yellow perch grow between May and September. Very little, if any, extra length is added during the winter months (Coble 1965, Jobes 1952). Therefore, September and May data have been pooled for growth analysis with May data (prior to spring growth) being placed within the same age class as fish from the previous September. July fish have not been used in length-age calculations because they would be in various stages of growth depending upon the individual. This would tend to obscure potential trends.

Figure 10 shows the size distribution of the yellow perch of Sunfish lake. Distinct age class distributions were not evident due to small sample sizes. In addition, the younger age classes were probably under represented due to biases in the sampling techniques employed. Size ranges for each age class are also indicated in figure 10.

Figure 10. Size distribution of yellow perch collected from Sunfish Lake. Year, class limits are also indicated