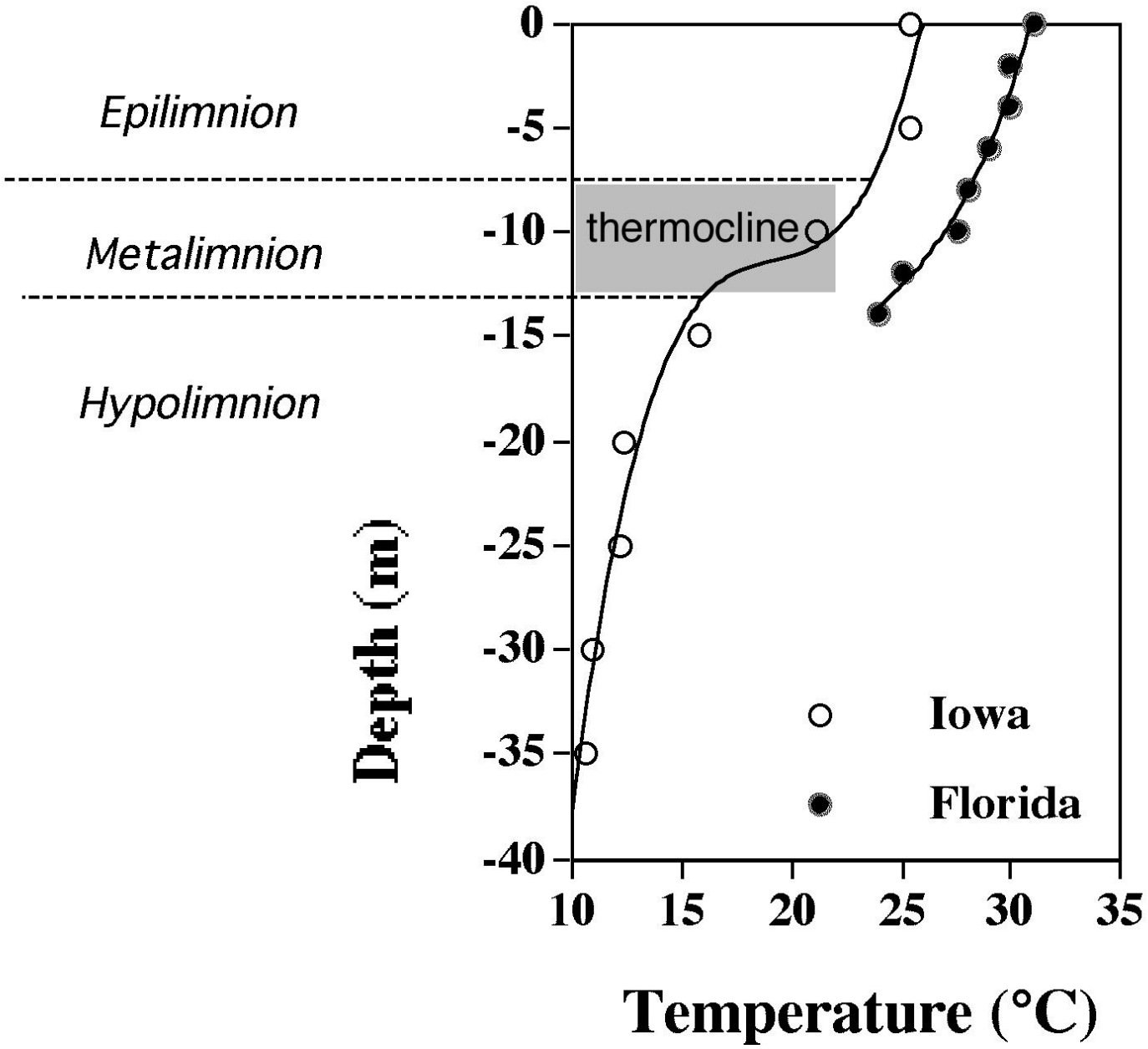
LIMNOLOGY 10

Prof. Dr. Nilsun Demir

Summer stratification

- Increasing water temperature on the surface causes formation of water bodies with different density. Stratification begins in the water column.

Summer stratification in lakes

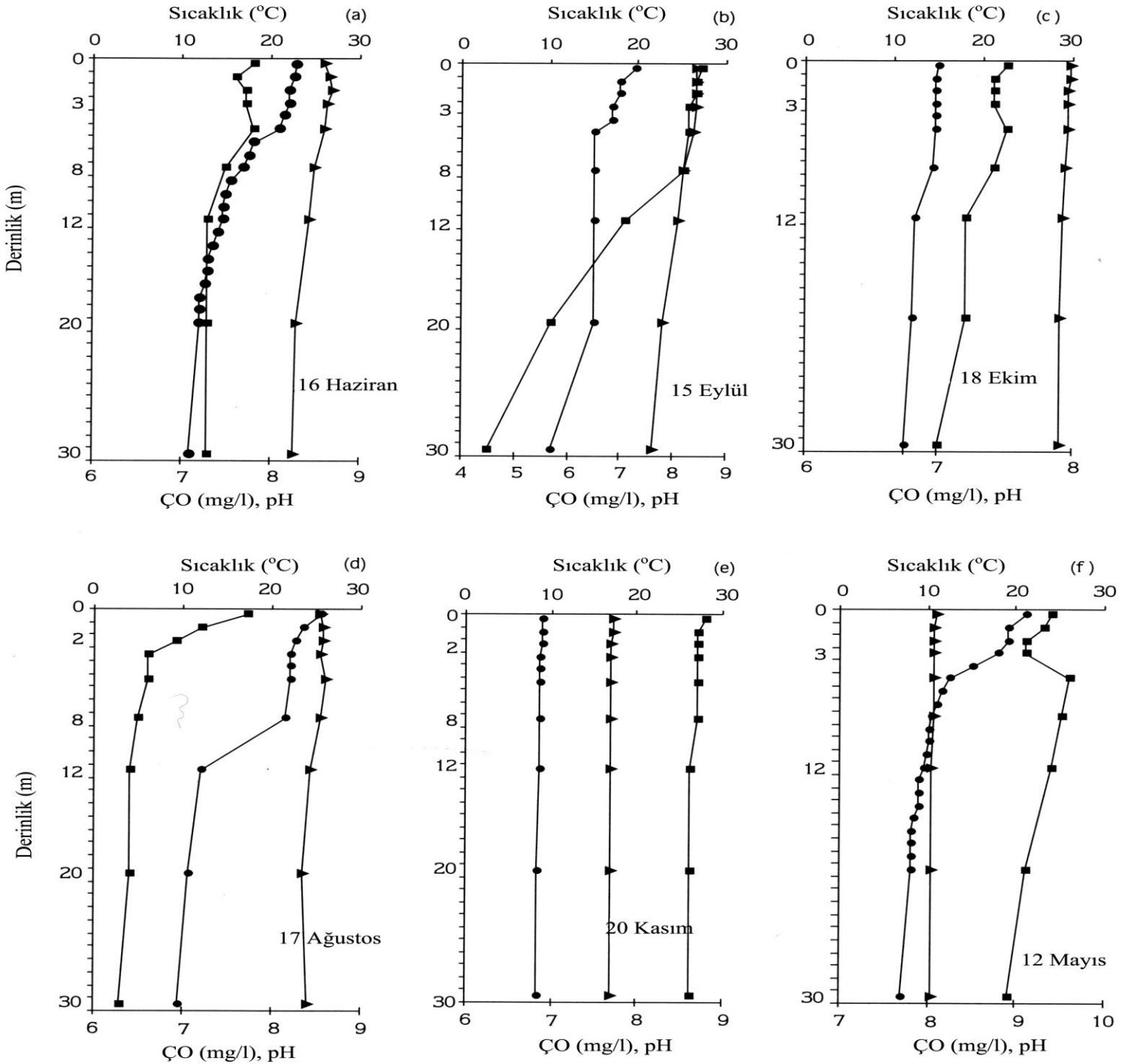


Autumn overturn

- As the water temperature decreases in the surface layers at the end of summer, the density differences decrease in the water column and the water column begins to mix again with the effect of the winds. During this period, diatom increases are seen.

Winter stratification

- In the lakes where the water surface is frozen during the winter months, there is a layer just below the ice where the water temperature is 2-3 °C and the density is less.
- Below this is a uniform water layer at +4 ^{o}C from surface to bottom.
- This condition is called winter stratification.
- In the lakes rich in organic matter in winter, anoxia (lack of oxygen) may develop with the decrease of oxygen in the bottom waters and mass fish deaths are observed.


Sıcaklık (°C)
(a)
Derinlik (m)
16 Haziran
ÇO (mg/l), pH
Sıcaklık (°C)
(b)
15 Eylül
ÇO (mg/l), pH
Sıcaklık (°C)
(c)
18 Ekim
ÇO (mg/l), pH
Sıcaklık (°C)
(d)
Derinlik (m)
17 Ağustos
ÇO (mg/l), pH
Sıcaklık (°C)
(e)
20 Kasım
ÇO (mg/l), pH
Sıcaklık (°C)
(f)
12 Mayıs
ÇO (mg/l), pH

Lake types according to their thermal properties

- Amictic lakes, constantly frozen lakes that never mix
- Holomictic lakes, fully mixed lakes (Monomictic, dimictic, polymictic)
- Meromictic lakes, partially mixed lakes

A meromictic crater lake