

LIST OF FRESHWATER ALGAE FOUND IN BRACKISH PONDS.

Teller, Alaska.

Bernard harbour, N.W.T.

Chroococcus turgidus
Eudorina elegans
Pediastrum Boryanum

Pediastrum Boryanum
Pediastrum integrum
Enteromorpha intestinalis
Ulothrix variabilis

Microspora sp? (fragments)
Spirogyra inflata ? (no spores)

Closterium striolatum
Cosmarium granatum
Cosmarium punctulatum

Cosmarium granatum
Cosmarium punctulatum
Cosmarium humile var. *striolatum*
Cosmarium radiosum (one only)
Staurostrum punctulatum
Oedogonium sp? (fragments)
Bulbochacte sp?
Ophiocentrum majus

Oedogonium sp? (fragments)

In addition to these numerous diatoms were found including *Epithemia turgida*, *E. gibba*, *E. Sorcx*, species of *Cymbella*, *Eumotia*, *Navicula*, etc.

After a consideration of the local climatic and geographic factors, I think that the explanation of the presence of these distinctly freshwater plants in water which is brackish to the taste is that the ponds contain two distinct floras which flourish at different times during the short summer season - a freshwater flora of green algae and freshwater diatoms which flourish in the earlier part of the season, and a marine diatomaceous flora which flourishes in the latter part of the season.

The freshwater flora becomes active with the advent of summer. The fresh water, melted on the slopes further inland, probably flowing through bogs or pools of fresh water, would bring freshwater algae to the brackish ponds where the surface ice would be beginning to melt. The resting stages of algae, left near the margin of the pond by evaporation the previous year, would begin active life again as fast as the rising water covered them. These plants, and those brought in by the influx of fresh water, would flourish during the earlier part of the summer. By the middle of June, when all the ice of the pond had melted, a brackish or marine flora would become active and remain so until arrested by the approach of winter.

The evaporation of the surface waters would leave many freshwater algae stranded, whilst others would cease activity under the influence of the slowly increasing salinity of the water. The stranded plants, in most instances, would assume or form some resting state which would enable them to survive the adverse conditions of winter and take up active life again the following year.

Many of these typical freshwater forms must be subjected to some extent to brackish conditions and yet they survive. Probably many can exist in slightly brackish water, with a slightly retarded metabolism, as long as the season lasts. As the salinity increases, some may be induced to develop spores and rest until the influx of fresh water the following summer. Judging by the number of individuals, I think that certain species, e.g., *Pediastrum Boryanum* and *Cosmarium punctulatum*, can adapt themselves to a nearly normal existence even in parts of these ponds where the water is distinctly brackish. Experimental observations under natural conditions would be of great value, if carried out; but, unfortunately, laboratories cannot be established readily in arctic swamps.