

Photosynthetic Organisms in Subarctic Lake Ice¹

While sampling No-name lake, which is located in the Tanana Valley, Alaska, at 63°48'N., 144°35'W., we observed numerous bubbles containing mixed populations of photosynthetic bacteria and algae (Fig. 1).

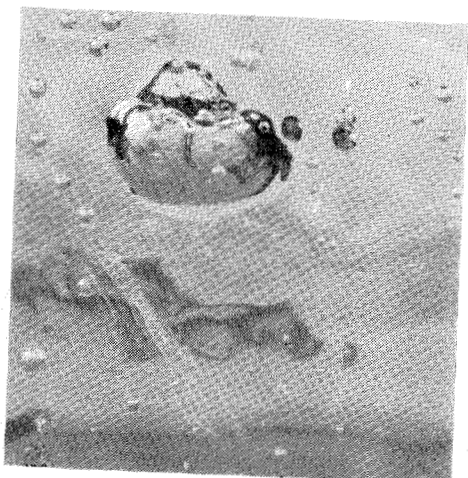


FIG. 1. Clumps and strands of green pigmented organisms in the water layer between the large bubble (upper left) and the surrounding ice. Pigmented material also appears in association with several smaller bubbles. (Magnification 4X)

Most of the material consisted of purple, pink and green colonies of bacteria. Few algae were present, and those were primarily life-cycle stages of *Chlamydomonas*, but the population was dominated by photosynthetic bacteria. This occurrence of large numbers of organisms in complex populations differs substantially from previous reports of organisms in lake ice.

The ice environment was somewhat unusual in that numerous overflows had occurred during the winter. In these circumstances the rate of accretion at the bottom of the ice sheet is much reduced, temperatures remain close to the freezing point and free water can occur within the ice. The water below the ice was anoxic and this, in combination with the favourable physical factors and presence of bubbles, may have been responsible for the unusual occurrence of organisms in the lake ice.

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The Squatter on the Resource Frontier*

INTRODUCTION

Beyond the agricultural fringe in Western Canada and on the Shield in the east is the area at present termed the "resource frontier". The settlement pattern consists of many isolated towns, which are single-enterprise or single-resource communities. These northern communities have been experiencing rapid growth during the past two decades and seem to be particularly vulnerable to squatting and squatters. Unfortunately, the seasonal employment available throughout much of the North serves to attract numerous Euro-Canadians and native peoples. Without adequate housing being available to them, they are virtually "forced" to squat and then are viewed by the mainstream of society as being backward, parasitic, or both.

Squatting has always been a part of frontier settlement. As a result of the growth of squatting in the developing parts of the world, numerous social, economic, physical, and political problems have arisen. The few available studies of squatting in Canada would seem to indicate that the apparent costs involved are very high. Development programs have had to be postponed; bitter enmities have arisen between the squatters and the government; costs of municipal operations have been increased owing to the pressures of uncontrolled fringe settlements; the dangers to natural resources have increased because of forest fires, poaching, pollution, etc.; and costs of school operation have increased due to the scattered location of squatters.

These problems have grown in magnitude and have caused serious difficulty because of:

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