

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).

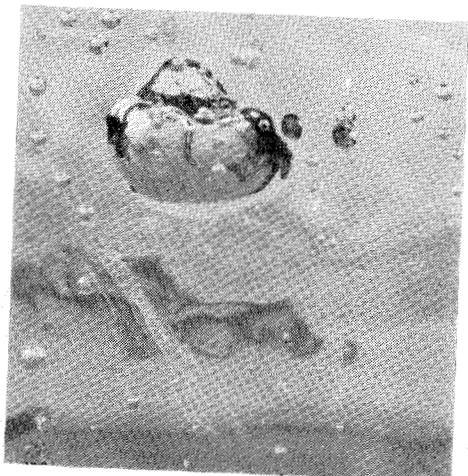


FIG. 1. Clumps and strands of green pigmented organisms in the water layer between the large bubble (upper left) and the surrounding ice. Pigmented material also appears in association with several smaller bubbles. (Magnification 4X)

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.

ACKNOWLEDGEMENTS

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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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- 1) The lack of control over the erection of structures on public or private lands in the provinces and territories;
- 2) The conflict of unregulated settlement with the principles of sound community planning, related to hygiene, sanitation and various public and social services;
- 3) Lack of detailed information on squatters, their origin, numbers, location, attitudes towards relocation, etc.;
- 4) Insufficient knowledge being available on the techniques of handling squatters in a manner satisfactory to the individuals concerned and to the public interest¹.

REASONS FOR SQUATTING

Areas to the south experience the same type of problems; however, there are great differences in economic magnitude between the two areas. The south and the agricultural areas have been more of a "little man's frontier", where individuality (identity) and job failure are not regarded seriously. If a man fails in one area, he can simply pick up and look elsewhere².

In the north the frontier has always been a big-company, corporate, or federal-frontier. The isolation of many such communities leads to what might be termed incipient urbanization by both white transients and native peoples. Neither group wishes to commit itself to either permanent residence or permanent employment. Both groups seem to have strong anxieties that they do not "fit" well into the local social strata.

Laing has told us that "the Indian population is rising rapidly" and "that it is apparent that the reserves cannot support the Indian people"³. From this we can assume that there is and will be a tendency for the native peoples to cluster around the new settlements.

Such settlement is difficult for all concerned. Without adequate financial support, the general tendency is to seek temporary employment and to build a temporary house on the periphery of the townsite. Their commitment to employment is usually not permanent. Not being accustomed to job work, they become disillusioned, quit their jobs and are known as poor job risks⁴.

If they do complete their labours, they stay in town, no longer wishing to go back to the old way-of-life, or perhaps being unable to do so; yet because of their lack of acculturation, they are unable to survive in the social and economic world to the south. The alternative is to remain as a squatter and attempt to draw some form of relief. This is not to say, however, that it is impos-

sible to remove oneself from the squatter areas and seek change⁵. They can move if the money, the will, and the desire are present. Since money is not always available, and whatever capital they have may be invested in a house, other alternatives must be sought.

Squatters represent a kind of "lowest order" settlement. Until very recently, such uncontrolled settlement was rarely regarded as anything but a temporary problem of limited scope and tenure. They have been ignored in regional development plans because either their existence is not known or it is believed that they will pose no problem when it comes to the implementation of regional or municipal development programs.

The characteristic of squatters is that they usually settle only temporarily in one place. For a variety of reasons they do not want to put down permanent roots. However, they frequently get trapped in one area and lose their mobility. The experience with the Whitehorse squatters would seem to indicate that squatting represents a good adaptation to living in an area with an unstable economic base. In many cases if squatters are approached by a non-governmental agency, by people whom they feel are sympathetic to their plight, they can be convinced of the necessity to become mobile and to move either into existing settlements (with the help of a wide variety of government programs) or to turn their squatter settlements into orderly, legal villages¹. The three R's (alternatives) of squatters then seem to be: remove, replace, or renew. Unfortunately, however, many government officials seem to believe that complete removal (the bulldozer method) is the only solution to squatter problems.

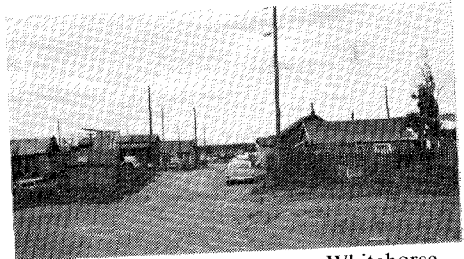


FIG. 1. Squatter settlement, Whitehorse.

In the vicinity of Whitehorse, where the squatter areas have enjoyed a tenure of nearly thirty years (see Fig. 1 as an example), attempts to clear and relocate them have had a moderate degree of success. Whiskey Flats, where many problem families were located, was cleared for a city park. The residents

of the Wye area gained title to their land and thus were removed from the squatter dole.

During the last four or five years, the Whiskey Flats program had been at a standstill due to political pressures and the inability of people to find a place to live. However, during the last two years it became apparent that many of the Whiskey Flats people were not owners, but tenants of absentee landlords living in other parts of the city. As in most cases of this nature there is also a humorous side to the story. One occupant, after signing the necessary papers and being paid to relocate, moved away. The next week when the bulldozer arrived to clear the site, someone else was in the house. This person had moved in with his wife and made it clear that, although he did not own the house nor was paying rent, he wanted a settlement for moving out⁶.

It may seem paradoxical that people who move into an empty land like the Yukon Territory should settle in and around the towns and villages, but this is where the employment opportunities can be found. The problems in Whitehorse illustrate what can happen in a region with a tenuous economic base, where attractive land and housing is scarce near the townsites: The climate restricts movement, and man's propensity to gather so that he may enjoy the amenities of community life tends to create problems for the planner⁷.

PROGRAMS AND POLICY

When provincial policy is to ignore squatting, illegal settlement will usually flourish. Euro-Canadians will continue to be mobile and will seek out communities where they can fulfil their individual needs. The native peoples will be caught up in the dichotomy of Federal proposals and provincial realities. The present government proposals are designed to end the isolation of Indian people from the rest of society⁸, but this cannot be accomplished by the propagation of squatter communities.

"Acquiescence in a trespass ripens it into a prerequisite, and once a sufficient number of squatters have established their stakes, their political power may be enough to defeat any corrective program..."⁹.

If policies are established for the control or elimination of squatting, they cannot be uniform in their nature. Each squatter "colony" differs not only in geographical location, but also in size, nature, and economic *raison d'être*.

In a cursory evaluation of squatter behaviour it has been observed that there are dif-

ferences in attitudes, tastes, motivations and perceptions. The way they live, where they live and their tenure seem to indicate an element of choice. In using observed location factors as an index, five distinct categories can be recognized:

- 1) Insular squatters — isolated bands of squatters totally outside established communities.
- 2) Partite squatters — squatters totally within a community, but living in distinct neighbourhoods.
- 3) Arterial squatters — squatters who show a preference for squatting along the major roads leading in or out of a townsite. These are usually outside the political boundaries, but within the social and economic sphere.
- 4) Peripheral squatters — squatters who form a belt around the developed parts of the townsite.
- 5) Bush squatters — those who wish to be within the social and economic sphere of influence, but prefer to remain apart and unseen in the bush away from the townsite^{10, 11}.

The numbers of squatters in or around a community may also be important in determining policy. It would seem that the fewer the numbers involved the greater the opportunity for assimilation into the community; and conversely, the greater the numbers the fewer the chances of assimilation — and the greater the possibility of *apartheid*. It is common for former squatters to have gained land title or otherwise to have moved into the mainstream of society when the opportunity presented itself, and thereby to have become socially acceptable in the community. It is also common for the squatter village to grow to the status of a sanctuary containing well over 50 per cent of the total community, and thereby to be unacceptable by the community proper. So policies must differ.

Where the squatters are relatively few in number, they may be easy to handle by simply allowing them a grace period for moving, or perhaps by defraying their moving costs. In the more established communities, it may be necessary to place more formal sanctions against the squatters. In other cases, it may be necessary to eliminate any thought of removal and in its place give thought to aiding the squatters by helping them to improve their conditions and to become a part of the community.

CONCLUSIONS

Squatting and uncontrolled fringe settlement are often the product of would-be set-

ters whose housing needs are inadequately served. Avoidance of squatting seems to be a more important issue than dealing with the problem after it has become firmly entrenched. The lack of control over squatters in many areas has made it necessary to pass laws and to place sanctions against them long after they have established a foothold in an area.

Existence on the resource frontier can be socially and economically very difficult. This predicates the continuance of squatting on the Canadian frontier. One might say that with present policy the existence of squatter populations is the heritage of the manifest destiny of the frontier.

Growth is going to take place on the resource frontier; but there must be some measure of responsibility imposed to see that the community grows not only in size, but also in good health.

Squatting can be avoided by anticipating the movements of peoples onto the resource frontier and making land or housing available to them, or simply by preparing for their advance. To affect a *laissez-faire* attitude towards the problem of squatters would be like posting a "squatter's welcome" sign. Such a welcome would magnify the problems of regional and community development that already exist on the resource frontier.

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The Admiral Richard E. Byrd Polar Center

The Polar Center was incorporated as a non-profit organization under Massachusetts law in July 1968 by a group of Bostonians interested in carrying on Admiral Byrd's life work of advancing man's knowledge of the polar regions and in the creation of a memorial to the Admiral and his men.

Nearly a year was spent in determining how the Polar Center might best carry out its mission and, without duplication, coordinate its activities with work already in progress. Initially over fifty people were interviewed, people in the government and the universities of Canada, the United States, and Europe, people with arctic and antarctic experience, many of whom had worked with Admiral Byrd; all of whom had an interest in the polar regions.

It became evident that not enough could be said to emphasize the importance of these regions and that not enough was being said. They have bestirred men's imaginations in time gone by; they can again, and the Polar Center proposes to participate actively in this process.

To this end the Center is attempting to focus public attention on these regions and stimulate polar awareness, in an effort to provide a substantial base of public support for all kinds of study programs that will broaden and intensify our knowledge of these areas, their problems and their wealth. It proposes to be the means for attracting young scholars to the field of polar studies. It has established contact with most of the polar oriented institutions, both government and academic, in the United States, Canada, and abroad. It proposes to work closely with all of them in order to advance the research and international cooperation so necessary to intelligent polar development.

To do these things it will build a permanent Polar Museum, the first of its kind in