

INDUSTRIAL COMMUNITIES OF THE SUDBURY BASIN

Copper Cliff, Victoria Mines
Mond and Coniston



Victoria Mines, Club House and manager's residence (in background), 1901. (see P. ii)

SUDBURY AND DISTRICT HISTORICAL SOCIETY.

971. 3133 I

**INDUSTRIAL COMMUNITIES
OF THE
SUDBURY BASIN:**
Copper Cliff, Victoria Mines, Mond and Coniston

Papers presented to the Sudbury & District
Historical Society and published with
the aid of a grant from the Ontario
Heritage Foundation

Publication No. 2

Sudbury:
Sudbury & District Historical Society
1986

Copyright © 1986
Copyright is held by the
authors of whom application
should be made for permission to reproduce

ISBN-0-920-919-00-6

Front Cover — Victoria Mines Club House and
manager's residence (in background) 1901.

Published by Sudbury and District
Historical Society
c/o Sudbury Public Library
200 Brady St.
Sudbury, Ontario Canada
P3E 5K3

Printed by Journal Printing Company
Box 307
34 Fir Lane
Sudbury, Ontario Canada
P3E 4P2

CONTENTS

Introduction	
F. A. Peake.....	v
Copper Cliff: The Pioneer Period.....	
Eileen Goltz.....	1
The Mond Nickel Company and the Communities of Victoria Mines and Mond	
W. H. Makinen.....	23
Coniston	
Michael Solski.....	45
Bibliography.....	57
Index.....	60
Acknowledgements.....	64

LIST OF MAPS

Sudbury and District: Geological Features and mining and smelting sites.....	vii
Copper Cliff Mine: A Surface Plan, 1887.....	5
Copper Cliff, 1904.....	16-17
Copper Cliff Today.....	21
Location Map of Mond-Victoria Mines and Region.....	25
Mond-Victoria Mines Setting.....	26
Victoria Mines Townsite c. 1905.....	30
Mond Townsite c. 1917-18.....	34
Plan of Proposed Smelting Plant at Coniston, 1911.....	47
Coniston in the 1970's	55



Bakery in Copper Cliff, early nineteenth century.

INTRODUCTION

The three papers contained in this volume were originally presented at meetings of the Sudbury and District Historical Society. They deal with the early development of three of the mining communities in the area. In publishing them we hope not only to preserve an important aspect of local history but also to make a contribution to the study of industrial villages or company towns and their part in urban development.

In the communities studied there are similarities. These include the ownership or control of natural resources and real estate by the companies concerned; the exclusion, where possible, of all competition; and the development of the town sites.

Since the mines were in undeveloped territory, it was necessary to bring workers to the sites. In all instances these workers included both Anglo-Saxons and a significant number of those of other races. In general, the former held supervisory and managerial positions and the latter were engaged in transient general labour. Some housing was provided by the company concerned although mainly for the more permanent Anglo-Saxon employees. With the advent of electricity, power was provided to these houses. It would be some time before restrictions were placed on the keeping of livestock and provision was made for water mains and sanitary sewers. Because Victoria Mines developed somewhat later it was blessed with tapwater if not sewers at a much earlier stage.

Unlike company towns in more settled areas, such as in the United Kingdom or the United States, the towns studied here were surrounded by unsettled or unclaimed lands. Some workers were thus able to take up residence as squatters on land adjoining the land held by the company — a circumstance causing some difficulty as settlement developed and local government was organized.

In addition to housing there was also a need for commercial and social facilities. Stores of various kinds appeared as they were needed but, contrary to practice elsewhere, they were not operated or controlled by the company. The 'company store' was unknown. There were efforts, however, to prevent the sale and distribution of alcohol and with the inevitable results. The colourful story of bootlegging might well form the topic for another paper. Responsibility for schools and places of worship was perfunctorily acknowledged but little was done about it. In 1889 the Canadian Copper Company set aside land in Copper Cliff for school and church and shortly afterwards a community hall was built which served for social, educational and religious purposes. Similar facilities were provided by the Mond Nickel Company at Victoria Mines and Mond. Coniston, a later venture, was a more sophisticated undertaking. From time to time the Mond Nickel Company and its successors also made grants for religious, educational and social purposes. As well, there was no lack of athletic activities.

The fluctuation in demand for nickel on the world markets and the companies' needs to modify their production posed social and economic problems for the communities which are discussed in the various papers. The paper on Victoria Mines and Mond also indicates the uncertain future of many industrial villages.

“Ghost towns” dot British Columbia and the Yukon but they are not unknown in Ontario. W. H. Makinen tells how “the community of Victoria Mines died in relative infancy” and many of the homes “were sawed into sections, numbered, and moved to (the adjoining communities) of Worthington or Coniston.” Perhaps this is one of the unavoidable risks attached to such undertakings. Equally significant was the number of mine accidents, often resulting in death or disability, about which surprisingly little is said in the present papers.

Eileen Goltz, M.A., M.L.S., who wrote the paper on Copper Cliff, is a native of Sudbury and a librarian at Laurentian University. She is at present on leave pursuing a doctoral programme in Canadian urban history at the University of Guelph.

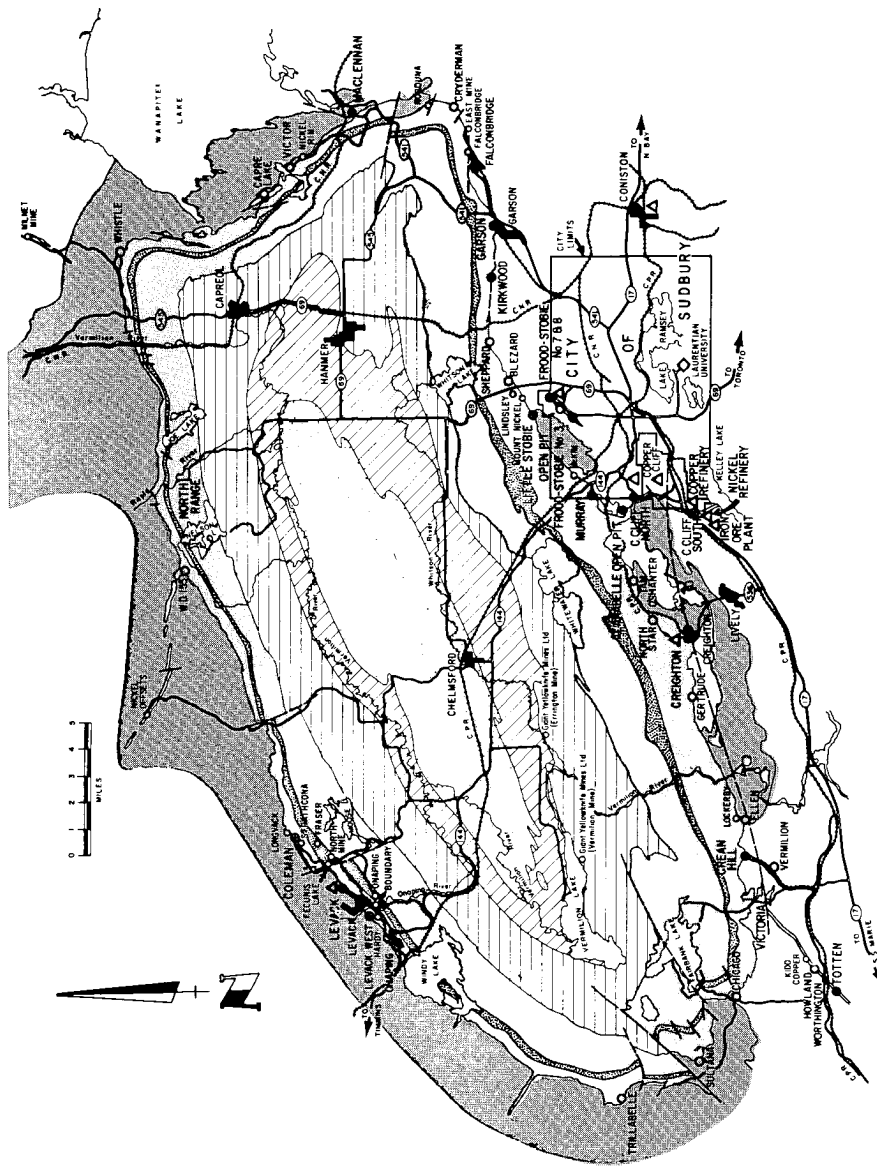
W. H. Makinen, B.A., M.Ed., who teaches at Lively District Secondary School, attributes his interest in the history of this area to the fact that his grandparents emigrated here from Finland at the turn of the century. He says, “dynamic transformation of the landscape via resource development and the creation of ‘ghost towns’, particularly those connected with my family history, is of particular interest to me.”

Michael Solski grew up with the mining industry, having gone to work with Inco Ltd on leaving school. In the years that followed he rose in the company’s ranks and was active in labour union affairs; he became Eastern Canadian Director of the International Mine, Mill and Smelter Workers Union. Later he entered local politics and served for several years as Mayor of Coniston and afterwards as Vice-Chairman of the Regional Municipality of Sudbury.

The thanks of the Society are extended to K. M. Brankley, M.A. who assembled and prepared the papers, to Dr. Curtis Fahey of the *Dictionary of Canadian Biography* for help in editing, and to Gwenda Hallsworth, M.A., who compiled the index.

We are also happy to acknowledge a grant toward editing and publishing from the Ontario Heritage Foundation.

F.A. Peake, D.D., F.R.Hist.S., President,
Sudbury & District Historical Society



Sudbury and District: Geological features and mining and smelting sites.

COPPER CLIFF: THE PIONEER PERIOD

By Eileen Goltz

I — ORIGINS

The origin of Copper Cliff lies in the 1883 discovery of copper in McKim Township. The Canadian Pacific Railway was then being built across northeastern Ontario and a construction camp had been established at what is now Sudbury. The townships of McKim and Snider had only recently been surveyed and the surveyors' reports provide interesting, though dismal, reading. Provincial Land Surveyor Francis Bolger described McKim township as a rough, rocky, swampy *brulé*, devoid of mineral wealth. Similarly, Isaac L. Bowman, another provincial surveyor, described Snider township as an area of rocky ridges, swamps, and burned-over land, containing no mineral of value. Despite the surveyors' reports, the Canadian Copper Company developed mines in both townships and the settlements adjacent to those mines later formed the town of Copper Cliff.

News of the copper discoveries spread quickly. However, there was no great influx of prospectors as had happened earlier in California and British Columbia and would happen later in the Yukon and Cobalt. Unlike gold and silver, copper cannot be mined profitably by individuals. Large amounts of capital are required for the initial extraction of the ore from the ground as well as for the later separation of the mineral from the ore. Therefore, prospectors seek to sell their claims to companies having access to sufficient funds. Frequently an entrepreneur serves as a catalyst, bringing together finance and resources for the purpose of development. Samuel K. Ritchie of Akron, Ohio, was the catalyst in Copper Cliff.

Ritchie was one of the first entrepreneurs in the new mining field. During the summer of 1885 he purchased mining claims in both Snider and McKim townships and the next year he organized the Canadian Copper Company with himself as president. As the name indicated, the company had been organized to mine copper. The presence of nickel had not then been determined. Early in 1886 Ritchie established a local company headquarters in Sudbury and appointed as superintendent of the operation his wife's brother-in-law, Lewis H. Ashmun. John D. Evans, who had worked for Ritchie in an earlier venture in Hastings county, became the company engineer.

No road connection existed in 1886 between Sudbury and the Canadian Copper Company's mining claims five miles west. There was, however, the abandoned Sault (or Algoma) branch of the CPR. This line, which was in a state of disrepair, could not sustain regular traffic. During the first year of mining operations a handcar and trailer were used to transport men and materials bet-

Editor's Note: Footnotes have been omitted for purposes of this publication but readers seeking further information may consult the select bibliography. In addition the author's thesis is available at Laurentian University or on microfilm through inter-university loan.

ween Sudbury and the mine site, and the right-of-way was used as a path.

Trails, surveyed and cut by Evans in 1885, extended from the branch line through burned-over pine forest and thick undergrowth to the mine sites. The Copper Cliff mine, located a mile north of the branch line and the Evans mine, located half a mile south of the branch line, were among the sites served by the trails. Rough completion of a road between the Copper Cliff mine and the branch line was a necessary prelude to the commencement of mining activity, so that blasting material, mining equipment, building and other supplies could be conveniently transferred from the tracks with horse-drawn vehicles. Thus, the first industrial activity undertaken at the mines by the Canadian Copper Company was the building of roads. Ashmun and Evans worked along with the road-building crew, chopping down trees, cutting them into manageable lengths, and building bridges across creeks and ravines.

With ground cleared at the Copper Cliff mine, operations began in May, 1886 and crews were directed to build a shanty, a powder magazine, and a blacksmith shop. By the end of May, the Canadian Copper Company had a work force of approximately 25 in the area, excluding company officials. These men were engaged in a labour-intensive operation using picks, bars and hammers to pry the ore from the ground. They then transferred it to dump sites using wheelbarrows and shovels. Powder, fuse, and dualine (an explosive composed of nitroglycerine, fine sawdust, and nitre) were the blasting materials used to loosen the ore. Ten-hour shifts were the norm, and during the first year of operation Evans paid the men each week. He prepared the pay envelopes at the Sudbury office and the employees travelled to Sudbury via handcar and trailer on Saturday evening to collect their earnings. By December, 1886 the work force numbered 65 and included Finns and people of British descent. Some French Canadians were living in McKim township at the time and it is possible some worked for the



View of Copper Cliff, 1889.

company. Most of the work force lived near the Copper Cliff mine in two distinct settlements which developed during the first year of operation. Company officials lived in the village of Sudbury, where room and board was readily available, and walked the five miles to the mines each day.

From the beginning the two settlements, Shantytown, south of the mine, and Copper Cliff, north of the mine, exhibited different characters. Immigrant labourers, who held inferior positions, lived in Shantytown and built their homes from whatever building materials they could procure. There is no evidence that the company was involved in any planning in the settlement prior to 1890. The Copper Cliff settlement, on the other hand, was a direct result of company planning. It was built to house Anglo-Saxon employees, company officials, and a business district.

Shantytown, the first community to appear, developed southeast of the Copper Cliff mine along the wagon or tote road (later Balsam street) which curved in a northeasterly direction from the Sault branch line around the bluff that marked the Copper Cliff mine, thence north towards the Clarabelle group of mines. In May, 1886 Evans had ordered the building of a sleep-shanty and, as the work force increased, more such structures appeared. It was from these crudely built shelters that the area derived its name.

In 1885 a log house had been erected in Shantytown, probably by Evans' survey crew, and in August, 1886 the company hired Thomas Johnson of Bay City, Michigan, to operate it as a boarding house. It is unlikely that the company would have brought in a boarding house keeper to cater for the 50 or 60 men who worked in the mine. They would have been expected to provide their own meals. There was, however, an increasing complement of professional and technical personnel, and it was this group that patronized Johnson's boarding house.



The first house at Copper Cliff, on Balsam Street pictured in 1886. Tom Johnson wearing apron can be seen standing in doorway with a friend.

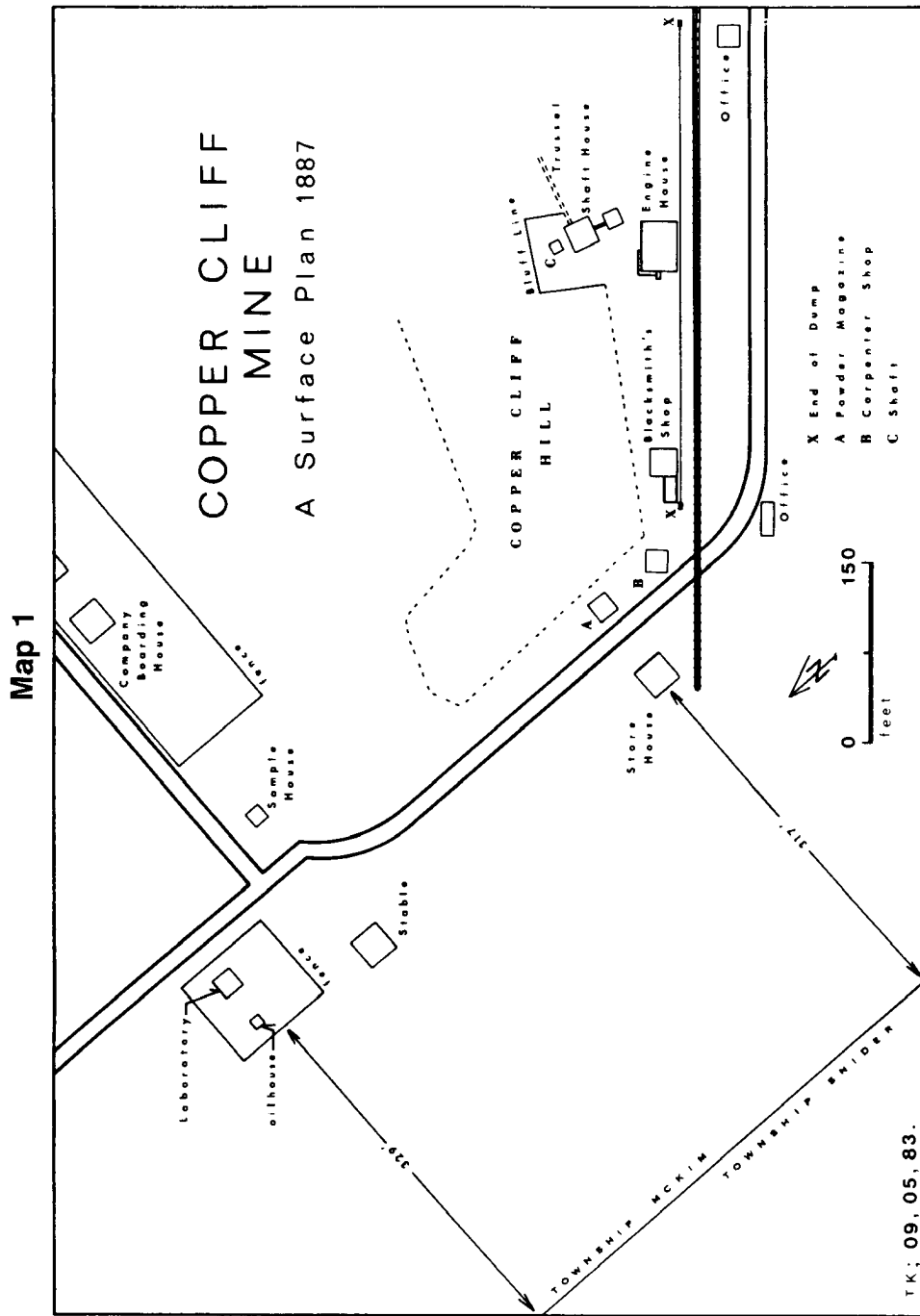
The settlement of Copper Cliff grew around the axis formed by the northerly extension of the wagon road (later Granite Street and still later Godfrey Drive) where it joined the western end of a road later called Serpentine Street. A laboratory had been built in the summer of 1886 on the west side of the wagon road at the intersection of Serpentine and Granite streets. This was the first structure to be built in the settlement and in August, 1886, street and lot lines were surveyed near it. After completion of the survey, boarding houses and semi-detached family dwellings designed by Evans were built along Serpentine Street by the company. These were provided for the accommodation of non-labouring personnel, and Thomas Johnson was moved from the Shantytown boarding house to one of the new establishments on Serpentine Street.

Operations began in the fall of 1886 at the Evans mine, located in Snider township, two miles southwest of the Copper Cliff mine, and this site became the focus of a third settlement. The company provided houses for the mine captain, foremen, others above the level of labourers and for some of the Anglo-Saxon miners. Immigrant miners tended to live in Shantytown and to walk the one and-one-half miles to the Evans mine.

The Canadian Copper Company shipped green ore from the Copper Cliff mine to the Orford Copper Company in New Jersey where it was smelted and refined, an undertaking which involved heavy freight costs. Ore was sent by way of a railway spur to the branch line which had been sufficiently repaired to permit an engine pulling a small load to traverse it at speeds of not more than eight miles per hour. The ore-carrying cars were then taken to the freight yards in Sudbury where they were held for varying periods of time prior to being moved to the United States.

During the smelting process it was discovered that the ore contained nickel as well as copper. In 1886 nickel was a relatively new mineral and commanded only a limited market. Moreover, there was no known economical method by which the copper and nickel contained in the Copper Cliff ore could be separated. A chemical method in use at the time was too costly to apply to the large quantities of ore being produced by the Canadian Copper Company. Thus, by 1887 the company faced three major problems: high freight costs, an undeveloped nickel market, and no economically feasible way to separate nickel and copper. The company ceased shipping green ore and sought solutions to the problems.

Samuel B. Ritchie was charged with the task of developing a market for nickel. The Orford Copper Company began experiments to find practical ways to separate the two minerals and the Canadian Copper Company sought ways to reduce the weight of the product being shipped from Copper Cliff. To accomplish this last objective, Dr. Edward Dyer Peters, Jr., a metallurgist, was appointed to replace Ashmun as general manager and to establish smelting operations which would reduce the ore to matte. This process allowed the separation of mineral from slag thereby reducing the weight of material being shipped. Before the ore could be smelted, however, its high sulphur content had to be reduced. To this end open-air heap-roasting was begun in August, 1888, in a roastyard operated by contractors. The contractors were paid a flat rate per ton of ore treated, and



From a map found in the Inco Archives, prepared by T.M. Kirkwood, one of the Canadian Copper Company Technical employees.

they in turn hired a work force to operate the yard. The labourers working on that project were not employees of the Canadian Copper Company. Ore was transported to the roastbeds from the nearby Evans and Copper Cliff mines, and also from the more distant Stobie mine, five miles north of Sudbury. Thus, the new facility was not solely dependent on ore from nearby mines. The establishment of a primary processing facility provided a sense of permanence and paved the way for an influx of families. The advent of the smelter initiated the metamorphosis of Copper Cliff from a collection of mining camps to an industrial village.

II — INDUSTRIAL VILLAGE

Work in the roastyard and smelter, like work in the mines, was labour-intensive. During the roasting process the ore formed large clinker-like masses which were reduced to manageable size by workmen wielding picks and shovels. The burned ore was then loaded into wheelbarrows and transported to railway cars for shipment to the smelter. At the smelter, ore, fuel, and flux entered the building on an elevated track and were directed to the furnaces. Molten matte was channelled from the furnace to a settling pot, thence into moulds where it solidified. It was later dumped out, broken by sledge hammers, weighed and loaded via wheelbarrows into railway cars for shipping.

The smelter was built one and one-quarter miles east of the Copper Cliff mine. The roastyard was situated between the smelter and the mine. The smelter, completed in late 1888, became fully operational in January, 1889, and the first matte was shipped from the facility in March. The construction activity associated with the smelter and roastyard resulted in an expansion of the work force, and the number of employees was further augmented when industrial operations began at both projects. These provided the focus for a fourth settlement, referred to as the Smelter, or Smelter City, and later as the East Smelter, or the Old Smelter. (See Map 2).

Construction at the East Smelter hamlet had begun in the summer of 1888 from plans which Evans had prepared for boarding and lodging houses and for single-family, semi-detached homes. One of the semi-detached houses was reserved for James McArthur, the smelter superintendent, and his family. Prior to this time, men in supervisory positions had not been accompanied to the Copper Cliff area by their families. Although labourers were expected to provide their own accommodation, the company did assist by providing them with construction materials and by permitting them to pay for these materials in monthly

instalments. The same privilege was extended to roastyard labourers although they were not company employees. Some of these men built their homes on land leased from the company while others purchased adjacent, privately-owned lots. Many, however, chose to live in Shantytown and walk to and from work each day. A boarding house, located at the smelter and operated by the roastyard contractor, catered primarily to Anglo-Saxons.

The work force, which included many family groups, settled not only at the smelter and in Shantytown but also at the Copper Cliff settlement and at the Evans mine. The company's house-building programme was, therefore, extended to both these locations. There is no indication that any company housing was built in Shantytown during this period. In the spring of 1888, as part of the building programme, six log houses were built along the northern extension of the wagon road where it curved to the east. This was later known as Clarabelle road and afterwards as Godfrey Drive. These houses, like all those in the Copper Cliff settlement, were inhabited by Anglo-Saxon employees.

By 1888 the opening of a roughly built road between Sudbury and Copper Cliff provided an alternative to the Sault branch line for those who travelled between the two communities. Company officials had continued to live in Sudbury and commute to and from Copper Cliff each day. In the fall of 1888 Evans prepared plans for a boarding house in Copper Cliff for the accommodation of these officials. The boarding house, completed in the fall of 1889, was located at the corner of Granite and Serpentine streets, thereby reinforcing the exclusive nature of the Copper Cliff settlement. It was first known as the Club House and later as the Yellow Club. The term club house was used throughout the history of Copper Cliff to describe Anglo-Saxon, non-labouring class facilities at which room and board were provided. The Club House, which was used as an hotel for visiting company personnel and other dignitaries also served as a home for single officials. These men were able to provide leadership hitherto lacking in the social and political life of the village.

During this period, the name Copper Cliff was applied to the village and included the settlements of Shantytown, Copper Cliff, Evans Mine, and the Smelter. A small part of the village was located in the unorganized township of Snider; the larger part had been built in the organized township of McKim, which assumed political responsibility for it. The arrival of families in 1888 and 1889 created a demand for schools and churches. School and church facilities were all located in Sudbury, and people from Copper Cliff had either to travel to Sudbury or wait until an itinerant clergyman came to the community. To remedy the lack of schools in Copper Cliff the McKim township council, in the spring of 1889, established School Section Number Two, known locally as the Copper Cliff School Section. It included lots 10, 11, and 12 in concessions I, II, and III of McKim township. The Evans Mine settlement, in the unorganized township of Snider, being outside the boundary, was not taxed for school support. However, the children from that settlement were expected to attend the Copper Cliff school and the site chosen for the school reflected that expectation.

The school house, planned by Evans, and approved by the head office of the

Canadian Copper Company in Cleveland, Ohio, was built at the intersection of what is now Balsam Street and Evans Road. This was considered to be the most accessible site. The building, measuring 25 feet by 40 feet, with 12 foot ceilings, was designed to be multiple purpose and was the most important non-industrial structure the company had yet built. It served as a school, a place in which to hold religious services, and public entertainments. It had a seating capacity of 100, could be partitioned into two rooms, and became the central point for community activities.

The new school house was primitive, not unlike many other Ontario village schools of the late 19th century. A wood stove provided heat, and drinking water was hauled each day to the building, where a common drinking cup was provided. Toilets were in outdoor closets at the rear of the school and coal oil lamps provided light when necessary. Janitorial services were limited to the sweeping and scrubbing provided by a local woman. Maps, blackboards, a numeral frame, and a globe were the first teaching aids. School desks were not immediately available and chairs and benches were supplied by the company.

III — THE 1890s

No market for nickel was secured until the 1890s when Ritchie aroused the interest of the United States Navy in the possibilities of nickel-strengthened steel armour plate. Until that time copper-nickel matte had been stored in the East Smelter yard, and by 1889 it amounted to 9,000 tons. That year only 3,274 tons had been sold, and the Canadian Copper Company alone had produced twice as much nickel as had been produced in the entire world in the previous year. Another of the company's problems was solved in 1892 when the Orford Copper Company perfected an economical method of separating nickel from copper. The system involved the repeated smelting and solidification of the matte until complete separation was achieved.

During the 1890's, in anticipation of an enlarged nickel market, the Canadian Copper Company expanded its operations in the Copper Cliff area. The roastery was enlarged in 1890 and the following year a Bessemer plant was added to the smelter. The Bessemer operation removed iron from the matte, further reducing its weight prior to shipping. The increased work force required for the expansion precipitated another house-building programme. At the East Smelter, a more prestigious home for the McArthur family, a dwelling for the Bessemer plant foreman and a frame, four-house block, or terrace, were built. Evans, still the company engineer and surveyor, noted in his diary for 24 April, 1890 that streets were being located in Shantytown; on 10 May, 1890 he wrote that he was "blocking out lots" in Shantytown and at the Copper Cliff settlement. These entries are the first indication that company planning was being extended to Shantytown.

Despite the building programme and the extension of planning to Shantytown, village residents were uneasy about the future of the area. This uncertainty continued through the 1890s prompted by a number of factors, foremost of which was a depressed copper market and slow growth of the nickel market. Coupled with, and partly caused by, these market conditions was the company's limited treasury. Mindful of these problems, the company insisted that the expense of operations in the Copper Cliff area be reduced.

A number of measures were adopted to this end including the employment of boys to work at the sorting tables in the rock houses. Rock was hoisted from the mines, crushed, screened, and directed on to oscillating tables where sorters picked out and discarded the poorer quality ore. In reporting to the Cleveland office, Evans explained the advantages of the move: boys worked more quickly, their small size meant that more of them could work at the tables, and, most important, they commanded lower wages. The employment of boys was not an unusual industrial practice in Canada during the 19th century, and in his 1890 report the provincial inspector of mines noted the presence of workers aged 15 to 17 at the Sudbury area copper and nickel mines.

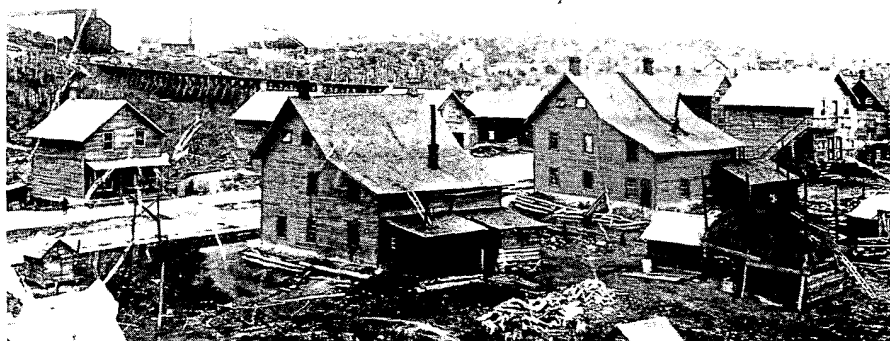
Another economy practised was the reduction of industrial activity for the winter season. During these months, men were dismissed, roastery operations halted, and mining activity severely curtailed. Employees laid off were re-engaged in the spring as production was resumed; if they were not available others took their place. However, there were also summer shutdowns. For example, the cessation of work during the winter of 1890-1891 extended to a complete suspension of company operations that lasted until the fall of 1891. This situation resulted



Company General Office, February 1891.

from a lack of markets rather than a lack of operating funds. From 1892 until 1896 a series of mine and smelter closings and reopenings caused disruptions among the work force. Many left the area and those who remained were compelled to accept employment at reduced wages.

A power struggle within the company in the 1890's further exacerbated the area's depressed economy. Ritchie's unorthodox financial management had caused dissatisfaction among the company's board of directors. In 1887, this body had removed him from the presidency, and in 1891 he had been eased from the company entirely. In response, Ritchie had launched a series of harassing law suits against his former associates. These unsuccessful suits were blamed by the *Sudbury Journal* for the winter shutdown of 1892-1893. A casualty of the litigation was John D. Evans, who had been appointed general manager in late June 1890. He had testified on behalf of Ritchie in 1893, thereby incurring the hostility of the company. He was forced to resign and shortly afterwards returned to his home in Trenton, Ontario.



View of Serpentine Street, Copper Cliff, 1898.

The business district established along Serpentine Street grew as the Copper Cliff settlement developed. The company leased land to individuals who wished to start businesses, and in this way it controlled the type and number of businesses which were permitted to operate in the village. Until 1889 many of the leases were verbal agreements and the terms were simple. The sale of liquor was forbidden and the lease could only be transferred to parties acceptable to the company. The first option on buildings for sale had to be offered to the company. If the company had no use for it the lessee could then sell his lease to some other acceptable person.

By 1890 there were in the Serpentine business district general stores, butcher shops, grocery stores, barbers, tailors, and even a pool room. Boarding houses,

an important feature of Serpentine Street during this period, provided accommodation for single Anglo-Saxon miners and surface workers. Business districts as such did not develop in the other settlements although general and grocery stores existed in Shantytown and at the East Smelter. Boarding houses were common to both these settlements and to the one at the Evans Mine, and were important to the social life of all the settlements. Finns, Poles, Ukrainians, and French Canadians operated boarding houses in Shantytown and the East Smelter where immigrant and French Canadian labourers lived. At these establishments people of similar language and customs gathered and socialized. Anglo-Saxon boarding houses, located at the Evans Mine, Copper Cliff, and the East Smelter settlement also served a social purpose. Local groups used them for concerts, dances, and other entertainments until the opening of the school house provided a better facility. In 1894 a second storey was added to the school house, enhancing its role as a site for community activities. Most of the early stores and some of the boarding houses had been privately built on land leased from the company and were of frame or log construction. A company store, often found in company towns, never existed in Copper Cliff.

The close of the 19th century brought a larger measure of prosperity to the village of Copper Cliff. The company opened two new mines in the vicinity in 1898 and a year later erected a new smelter. In 1900 the Orford Copper Company built the Ontario Smelting Works. Each of these smelters became a focal point for new settlement. The Number One mine in Snider township, located one-half mile southwest of the Copper Cliff mine, was worked for one year only. However, the Ontario Smelting Works, which furthered refined Canadian Copper Company matte, was built a few hundred feet south of this mine and provided the impetus for the continuation of the settlement, known by then as the Orford settlement.

The Number Two mine, in McKim township, was situated less than one-half mile north of the Copper Cliff mine. On a hill in the vicinity of that mine a settlement, appropriately known as the Crow's Nest, began to develop. The new or West Smelter was built 300 feet southwest of the Number Two mine and three-quarters of a mile northeast of the Copper Cliff mine. This facility augmented the capacity of the East Smelter until 1903 when the latter was dismantled. The work force was enlarged to accommodate these operations and the new roastery which in 1900 was established southwest of the Copper Cliff mine. Many of the smelter and roastery employees moved into the Crow's Nest settlement, which expanded into an area known at first as Italy and later as Little Italy, in recognition of the immigrants who settled there.

Following the cessation of mining operations at the Evans mine in 1899, the community began to disintegrate, although some people remained and walked to and from work at the Copper Cliff mine. A similar dislocation occurred at the East Smelter settlement when operations at this older facility were curtailed in favour of those at the West Smelter. Supervisory employees moved out of the settlement and it too began to disintegrate. However, it did not disappear

for several years. It was still sufficiently vigorous in 1912 to petition the town council for exemption from compliance with a bylaw prohibiting the keeping of pigs in town.



Canadian Copper Company, Copper Cliff. Matte yard, West Smelter as it was in 1902. The buildings were destroyed by fire June 14, 1904.

IV POPULATION PROFILE

The population of the industrial village of Copper Cliff can be described with greater accuracy than is possible for the population of the mining camps. In 1890 Dr. Peters noted in a communication to the Cleveland office, that Finns were resident in the village and that some Ukrainians had settled in the East Smelter area. In 1895 Poles were well established in Shantytown and the 1896 wedding of a Copper Cliff Pole and his newly arrived fiancée was attended by 75 of his compatriots. However, the largest proportion of employees continued to be Anglo-Saxon.

The Canadian census for 1891 provides data on religious affiliation but not ethnicity. The geographic area described is, however, the townships of Blezard, Broder, and McKim, which were combined for enumeration purposes. Neither Sudbury nor Copper Cliff had been incorporated in 1891 and, therefore, did not appear as separate enumeration districts. Blezard and Broder townships were both sparsely populated in 1891, and the population of McKim was for the most part divided between Copper Cliff and Sudbury, with the larger part living in Sudbury.

Table I
Religious Affiliation, 1891
Blezard, Broder and McKim townships

Angl	Bapt	Jewish	Luth	Meth	Presb	R.C.
270	41	11	63	221	405	1,335

Table I indicates not only that the Roman Catholic church had the largest number of adherents, but that the membership of this church was larger than that of all the others combined. The relative sizes of congregations in Copper Cliff itself is difficult to determine. The Anglican, Methodist, and Presbyterian congregations had used the school house for services since its opening in 1890. Neither the Roman Catholics nor the Lutherans chose to make use of the building and each made other arrangements. The Roman Catholics held monthly services at the home of a church member until the fall of 1892 when they remodelled a dwelling house near the East Smelter for use as a church. The Lutherans, most of whom were Finnish, organized as a congregation in 1897 and held services in the Temperance Hall, built in Shantytown in 1895 by a Finnish temperance society.

The Roman Catholic congregation built the first actual church in the village in 1898. Named St. Stanislaus Kostka, it was located in Shantytown and served Poles, French Canadians and Anglo-Saxons; in later years it also served Italians as well as Ukrainian Greek Catholics. French-speaking Jesuits from Sudbury ministered at the church. In 1899 Presbyterian and Methodist churches were built in the Copper Cliff settlement. The small Anglican congregation built a church in Shantytown in 1901, designed to accommodate 75 people. The Presbyterian church, large by comparison, seated 264.



Copper Cliff mine and miners, 1893.

The population expansion of the 1890's is revealed in the census figures of 1901. This census provides a better picture of the Copper Cliff population since by that time Sudbury had been incorporated as a town and most of the township population was then concentrated in Copper Cliff. In 1901, before the incorporation of Copper Cliff, the population of McKim township was 2,939. In 1902, following incorporation, it had fallen to 498.

Table II
Religious Affiliation, 1901

	Ang.	Bapt.	Grk. Orth	Jewish	Luth.	Meth.	Presb.	Rc.
McKim	268	5	nil	nil	357	464	392	1,453
Snider*	34	2	nil	nil	33	70	116	427
Sudbury	277	29	7	71	10	193	330	1,095

*includes Waters township, which in 1901 was a slowly developing farming area. Most of the population lived in the Copper Cliff area.

Table II reveals the large number of Roman Catholics in the Copper Cliff area and that the Lutheran adherents noted in 1891 were residents of Copper Cliff rather than Sudbury.

The village of Copper Cliff, which in 1901 was anticipating incorporation, was a cosmopolitan place. Table III indicates the presence of large numbers of Anglo-Saxons in the townships of McKim and Snider and in the town of Sudbury. A significant French Canadian group was a secondary force. There is, however, no explicit reference to the Finnish, Polish, and Ukrainian populations living in and near the village of Copper Cliff. Neither Finnish nor Ukrainian was recognized as a nationality for census purposes until 1921. In 1901, therefore, these population groups would have been included under other headings. Although the designation Polish appeared in the 1901 census, there were no Polish people recorded in the McKim, Snider, and Sudbury reports. They, too, must have been included elsewhere.

Table III
Ethnicity

	Brit.	Fren.	Austr.	Ger.	Ital.	Pol.	Rus.	Scan.	Chin.
McKim	1,395	803	11	152	233	nil	392	22	2
Snider*	238	204	nil	15	96	nil	8	3	nil
Sudbury	1,139	702	1	58	48	nil	nil	14	2

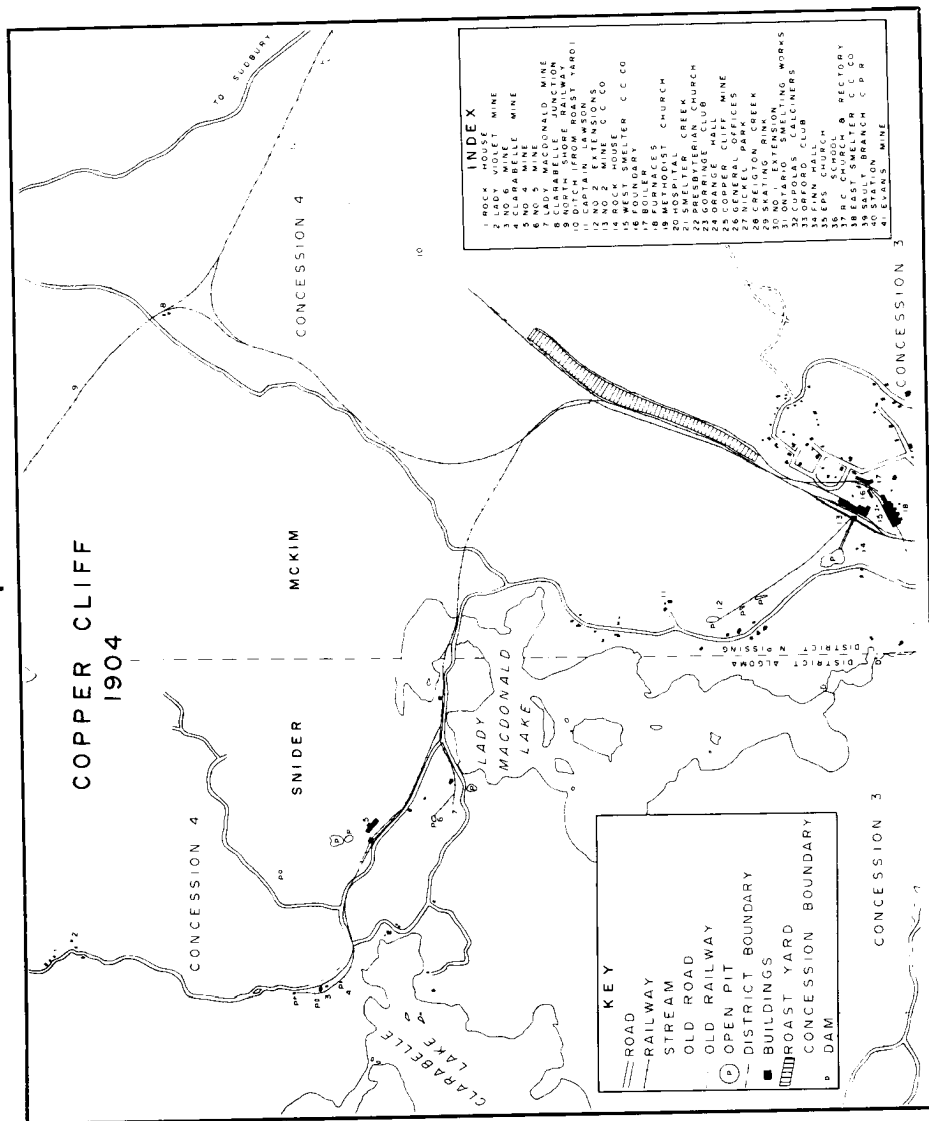
*includes Waters township.

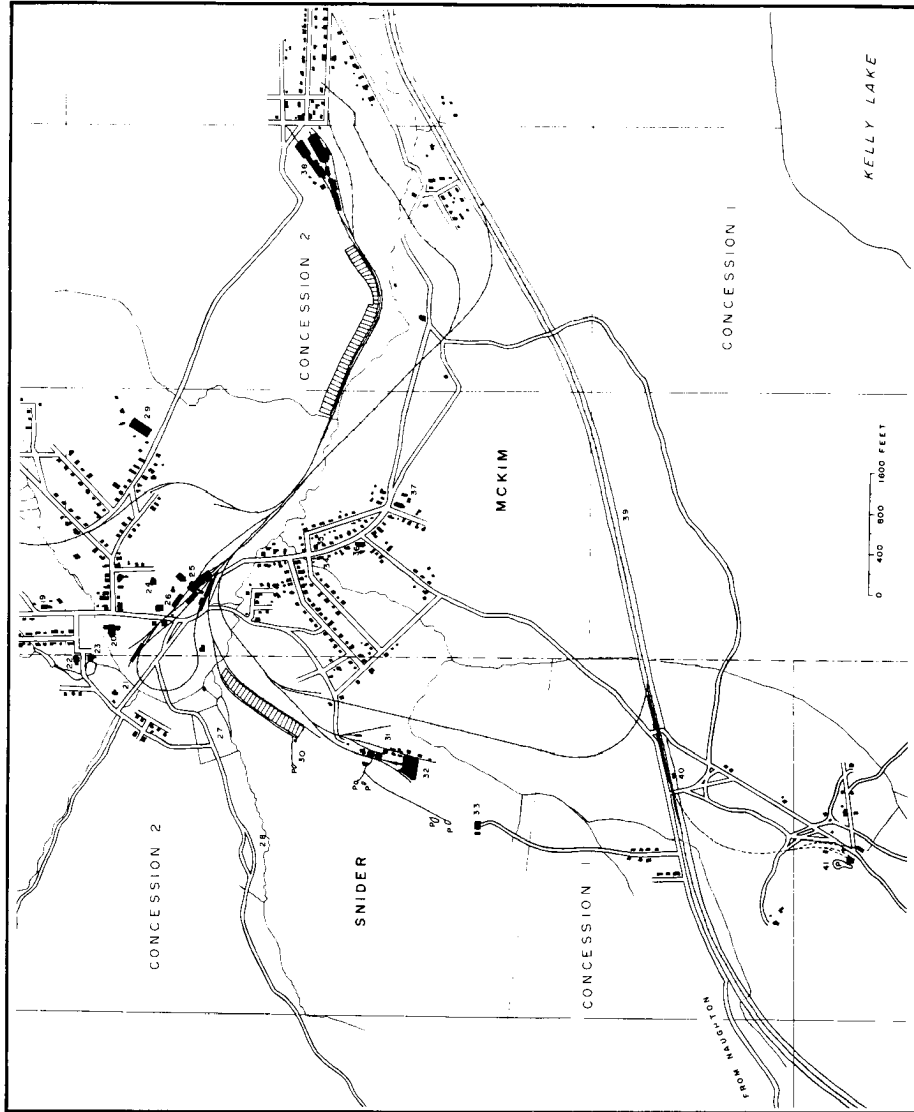
It is possible to locate Copper Cliff's Polish, Finnish, and Ukrainian residents in the 1901 census by determining the state from which these immigrants had issued. If the state were dominated by, or annexed to, a foreign power, the immigrant was considered to be a national of that power. This political and geographic definition was accepted and used by the census division. Thus, the Poles who had emigrated from a homeland divided among Russia, Germany and Austria, were considered to be either Russians, Germans, or Austrians, depending on their province of origin. Since many of the Poles in the Copper Cliff area had emigrated from German-held provinces, it is reasonable to assume that they would be included with the German segment. Similar reasoning may be applied to Finnish immigration. Finland had been a province of Russia since early in the 19th century. Finns were consequently included within the Russian segment although some Finns may have been counted as Scandinavians.

Locating Ukrainians in census data is more difficult. The western Ukrainian provinces of Galicia, Bukovina, and Sub-Carpathia were part of the Austro-Hungarian Empire; the eastern Ukraine was ruled by Russia. It was from the Austro-Hungarian provinces that most Copper Cliff Ukrainians had originated. Thus, they would have been classified as Austrian. However, there is a complication in the case of Ukrainian immigrants. They referred to their homeland as "Rus," an ancient name for the Ukraine, and from this the term Ruthenian developed and was applied to Ukrainians. But the word "Rus" was thought by Anglo-Saxons to be a diminutive of the word "Russia." Thus some Ukrainians may have been counted by the census takers as Russians. There is further confusion. From the 16th century Poland had controlled the Ukraine, and Polish officials had been installed in positions of authority there. The presence of large numbers of Poles in elite positions had resulted in the assimilation of many Ukrainians, who adopted the language and culture of the overlords while retaining vestiges of their own. They would have considered themselves to be Poles. Most of the Ukrainian population resident in McKim and Snider townships would have been included under the designation Austrian, with a few being counted as Russian or Polish.

In summary then, the population of the village of Copper Cliff in 1901 included Anglo-Saxon, French Canadian, Finnish, Italian, Polish and Ukrainian, inhabitants divided among six distinct areas of settlement: Shantytown, Copper Cliff, Crow's Nest, Orford, and the disintegrating settlements at the Evans Mine and the East Smelter. Segregation along ethnic lines was apparent in occupation and place of abode. Office, managerial, and supervisory personnel, as well as some of the miners were Anglo-Saxon. These people lived in the Copper Cliff, Evans Mine, and Orford settlements. Labouring jobs in the smelter, at the roastery, and in the mines were usually held by European immigrants and French Canadians, many of whom spoke no English. Of these non-Anglo-Saxons, the Finnish, Polish, and Ukrainian groups lived in separate sections of Shantytown. The Italians had settled in the Crow's Nest; French Canadians and Ukrainians lived at the East Smelter.

Map 2





V. THE TOWN OF COPPER CLIFF

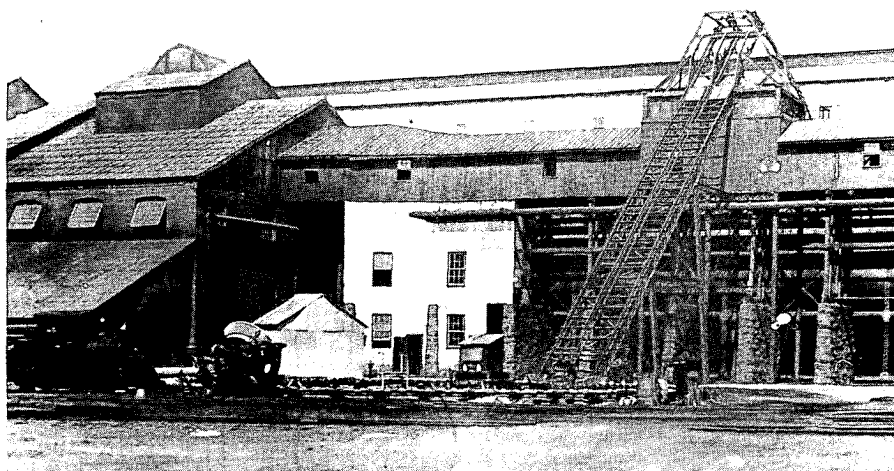
Copper Cliff was incorporated as a town on 15 April 1901, and was thus separated politically from McKim township. The village of Copper Cliff had, because of the size of its population, dominated township politics since the incorporation of Sudbury in 1892. However, Copper Cliff, or more accurately the Canadian Copper Company, had provided the tax base on which the McKim township council operated. Incorporation meant that taxes were no longer paid to the township and the contribution derived from the Canadian Copper Company could be applied solely to Copper Cliff. Company officials hoped that taxes would be reduced, or at least not increased drastically. At the time, the incorporation of a company-owned town was rare. Indeed, as late as 1953, according to a study published that year by the Institute of Local Government at Queen's University, only one-third of company-owned towns in Canada had been incorporated, and each of the councils in these towns was controlled by a single industrial concern. Such was the case in Copper Cliff, where the Canadian Copper Company, the largest tax-payer, retained direct control of municipal affairs. Mayors and councils were usually acclaimed and they always represented company interests.

The new town of Copper Cliff was stark and ugly. As early as 1893 writers had commented on the lack of foliage and grass, and had blamed the desolation on sulphur fumes emanating from the roastyards. Visitors quoted in the *Sudbury Journal* were no more charitable in 1902 when the town was described as being without grass, trees, or flowers, its backyards "as bare and forbidding as a billiard table before the green baize is glued on". To add to the general squalor of the area, most of the houses were small, unpainted, frame or log structures. Privately built shacks and lean-to's contrasted sharply with the more substantial company-built homes. Although most buildings, including the smelter, were wooden, there was no fire protection. As well, there was no local law enforcement agency, and cows, pigs, chickens, and dogs ran at large. Sanitation control was also absent. Outdoor privies, built by the householder, were placed where convenience, not drainage, dictated. Hence, wells, the usual source of water, were often contaminated. Garbage and other refuse was often dumped outdoors, usually in backyards, where it rotted and attracted pigs and dogs. Typhoid, small pox, diphtheria, scarlet fever and tuberculosis were common.

The fortunes of the town were, as always, tied to those of the company and both began to improve in 1902 with the incorporation of the International Nickel Company. This was a holding company established to assume control of a number of mining enterprises, among which were the Orford Copper Company and the Canadian Copper Company. The firm's American headquarters was in New York and the Canadian headquarters was at Copper Cliff. The name Canadian Copper Company continued to be used for the Canadian operation. The new holding company had greater resources at its disposal than had been available to the Canadian Copper Company, and, although financial restraint within the Canadian operations was still a watchword, the town of Copper Cliff benefited from the new arrangement. A modern smelter, built half a mile east of the West Smelter in 1904, replaced both the West Smelter and the Ontario Smelting

Works. This new facility added to the economic security of Copper Cliff and marked a significant turning point in the town's development. The Smelter, as it was called, with no qualifying adjective, was designed to be operated electrically. The power required was generated by a central steam plant until the power plant on the Spanish river at High Falls came into operation. It was the advent of electrical power which effectively ended Copper Cliff's pioneer phase.

The Canadian Copper Company, which previously had expended little money on the town and had provided little direction beyond planning and building in the Anglo-Saxon settlements, began to show a new interest in the environment in which its employees lived. Wooden sidewalks were built, water mains installed and electricity supplied. Although a sewage system was planned, it was not built for a number of years; in the interim, maintenance of privies was ordered and enforced. The keeping of dogs, domestic animals, and poultry was regulated by bylaw and a garbage removal system instituted. Ostensibly these improvements resulted from initiatives taken by the town council. In fact they originated with, and were financed by, the company. Wooden buildings persisted, and with them the constant danger of fire. A volunteer fire brigade was organized in 1902 and fire-fighting equipment was purchased. No fire hall was built until 1909 when the town council provided the plans and the structure was built by the company. The town then paid for it over a five-year period from revenues received from the company in the form of taxes. A local police force was established in 1902, and a temporary lock-up was provided pending the erection of a permanent jail in 1903. A Board of Health was established, and the company began the construction of a hospital on the site of the old laboratory (later the general offices) at Granite and Serpentine streets.



Copper Cliff smelter. Note locomotive at left, c. 1912.

VI. CONCLUSION

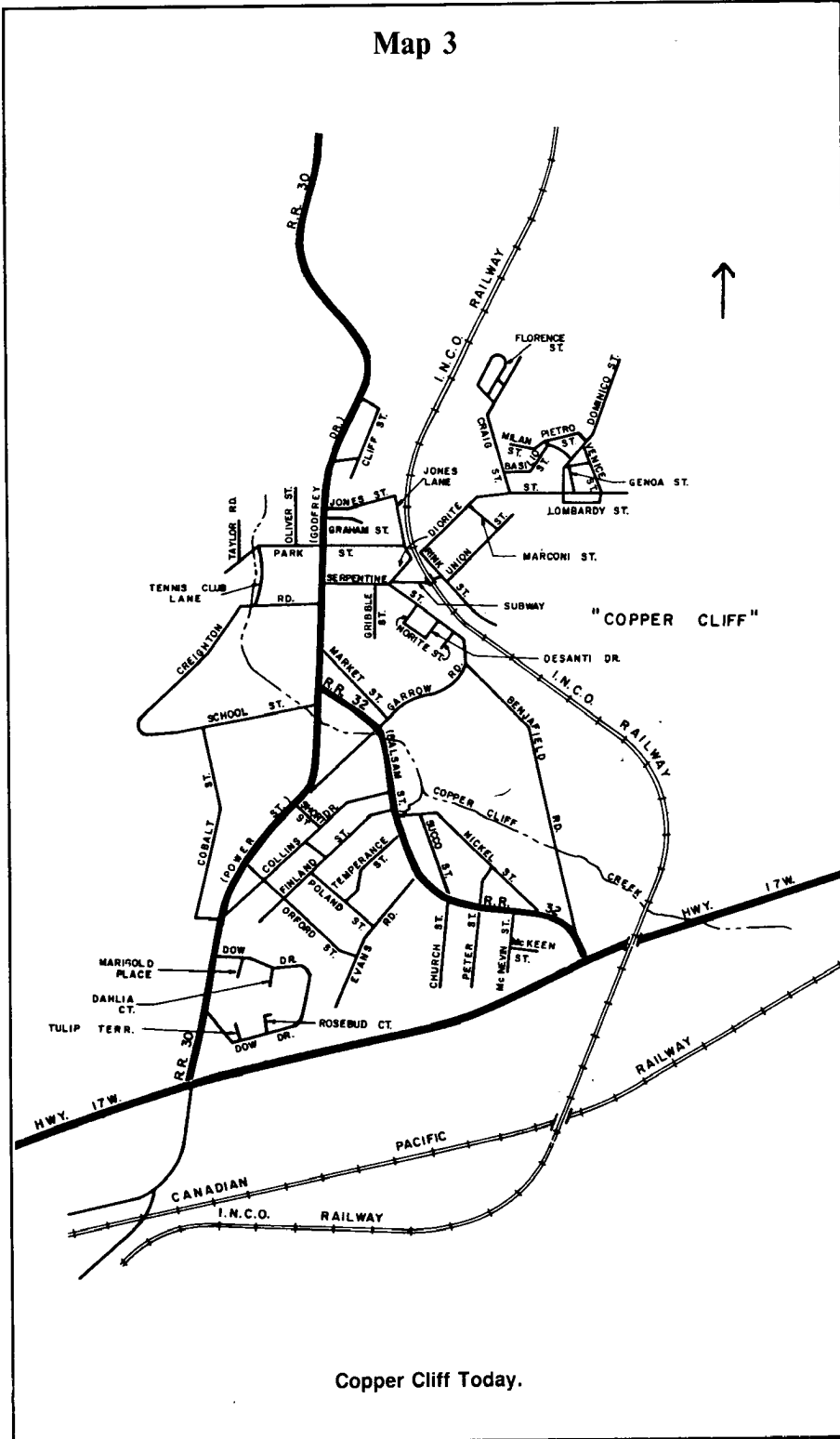
In conclusion, the pioneer period in Copper Cliff included a mining camp phase, which ended in 1890 with the introduction of primary processing, and an industrial village phase, which ended in 1901, with municipal incorporation. The pioneer period, however, continued until 1904, when electrical power was introduced into the primary processing operation. Even before Copper Cliff was incorporated, it had been a company-town in every sense. The Canadian Copper Company owned all the land and provided some of the housing occupied by its personnel. Planning during the pioneer period was, however, selectively applied to particular settlements.

The settlements followed industrial development and the first two began in the vicinity of the Copper Cliff mine. Shantytown, which was located south of the mine, was ignored by the company. Copper Cliff, north of the mine, was planned from the beginning. The settlement at the Evans mine was also planned. At the East Smelter a planned area was set aside for company personnel; the labouring element provided its own accommodation in an unplanned adjacent development. The Crow's Nest was unplanned and the Orford settlement was, like the East Smelter, partially planned. During this period, company planning was limited to doing what was necessary to ensure that the Anglo-Saxon work force, especially the managerial staff, remained in Copper Cliff.

From the start, the population was heterogeneous although dominated by an Anglo-Saxon majority which held all supervisory, clerical and managerial positions. The Finnish, Polish, Ukrainian, Italian, and French Canadian segments of the population held labouring jobs at the mines, smelters, and roastyards. The Copper Cliff settlement was populated by Anglo-Saxons, including company executives. Shantytown population included Finns, Poles, Ukrainians, and a few French Canadians. Evans mine was an Anglo-Saxon settlement and the varied population of the East Smelter settlement included Ukrainians, French Canadians, and Anglo-Saxons. Crow's Nest, originally Anglo-Saxon, later became Italian, and the Orford settlement was populated by both Anglo-Saxons and Italians.

Throughout the pioneer period, the population was completely dependent on the Canadian Copper Company. No building could be erected without the company's consent and no business could be established without its endorsement. The economic well-being of the village was dependent upon the economic health of the company, which in turn was at the mercy of world markets. Thus, the village existed precariously, and the population fluctuated with the markets. The economic situation improved after the formation in 1902 of the International Nickel Company. The finances of the holding company were more stable than had been those of the Canadian Copper Company and this stability was reflected in the town.

Map 3



Copper Cliff Today.



Room of the Club House at Victoria Mines, 1901.

THE MOND NICKEL COMPANY AND THE COMMUNITIES OF VICTORIA MINES AND MOND

by W.H. Makinen

(This article is based on a presentation made by the author and Douglas Santala to a meeting of the Sudbury and District Historical Society in February 1981. Much of the information, particularly on the communities of Mond and Victoria Mines, was derived from the recollections of former residents of these ghost towns. The author wishes to thank Mr. J. A. (Sandy) Butler, Mr. Olavi Mattinen, Mrs. Tyyne Tolmonen, Mrs. Aino Mumford, Mr. Earl Mumford, the late Mr. Vaino Manninen, Mr. Norm Anderson, and the late Mr. John Hill for their contributions. The map of Victoria Mines is based on an original by J. A. (Sandy) Butler and that of the Mond townsite is based on an original by the late John Hill. The originals are possibly the only ones of their kind in existence.)

An historic interview with Dr. Ludwig Mond in Ottawa was recorded in the *Sudbury Journal* of 8 November, 1900. In it Dr. Mond stated:

I have recently discovered a process by which perfect separation of nickel and copper can be obtained in their most valuable forms and at a much lower cost than any other process can be applied. I have just had it patented in every country in the world and I regard it as the most important of my different discoveries. It will doubtless result in the operations in Sudbury being carried on a great deal more extensively than otherwise would be the case.

The process referred to by Mond, a British metallurgist and industrialist, was the carbonyl process which he and a company chemist, Dr. Karl Langer, had discovered in 1889. The basic principle in the carbonyl process was as follows: nickel with carbon monoxide forms a compound which is volatile and thus capable of being vaporized, and which, when heated to 180 deg. C, is split up into essentially pure metallic nickel and carbon dioxide.

The Mond process was offered first to British steelmakers and later to the Canadian Copper Company, but all declined. Mond then further improved the refining process and went ahead with plans for a refinery in Clydach, Wales. He also began to investigate sources for nickel ore. Unlike the Canadian Copper Company, the Mond interests had a process for refining nickel before they had the ore. For that commodity, Ontario had become the source. After exploratory work, the site which was to become Victoria (Mond) mine was purchased in 1899, and on 20 Sept., 1900 the Mond Nickel Company was incorporated as a British firm under the Imperial Companies Act (1). The saga of the Mond Nickel Company in Canada lasted until January 1929, when Mond merged with the International Nickel Company as a subsidiary.

This paper will consider the company's operations throughout Northern Ontario but will concentrate on those at the Victoria mine, the Victoria Mines smelter, and the Mond roastery, the hub of the Mond Nickel Company's industrial activities in the province during the early years of the century. Further, it will focus on the life and times of the associated communities of Victoria Mines and Mond, particularly the latter.

As the Royal Ontario Nickel Commission *Report*, 1917, indicates, Mond Nickel was able to establish itself in spite of the fact that, until the turn of the century, mining in the Sudbury area had been monopolized by the Canadian Copper Company and the Orford Copper Company. In the early years there were perhaps 300 workers in Mond's Sudbury operations and by 1918 there were 1,522 workers in all the company's Ontario mines and smelters. Other mining companies failed in the early 1900s. The Drury Nickel Company, the Lake Superior Power Corporation, the Dominion Mineral Company, the Dominion Nickel-Copper Company, the Hamilton Nickel Company, the Great Lakes Copper Company, the Vivian Company, and R. R. Gamey were all examples of mining ventures which failed to survive. Mond survived because of its discovery of a nickel refining process, its access to British capital, and its avoidance of competition with the Orford Copper Company. Mond's interest, unlike those of Orford, did not lie in selling nickel or copper to North American markets.

In 1902 powerful financial interests in the United States consolidated a number of mining companies, including Canadian Copper and Orford, as the International Nickel Company. International Nickel's Canadian operations retained the name Canadian Copper Company. By 1911 the Canadian Copper Company and the Mond Nickel company were the only major firms in the Sudbury area. In 1916 the Canadian Copper Company operated the Creighton, Crean Hill, Copper Cliff No. 2, and Vermilion mines and the Dill quartz quarry. Mond's Victoria mine was in close proximity to the Canadian Copper Company's Crean Hill mine and to the Vermilion mine (See Figure 1).

As well as Victoria (Mond) mine, Mond had several other mines in the Sudbury area. Lake Hill mine, managed by W. J. Mumford, was located one-half mile southeast of Victoria mine. The first shaft at Lake Hill was sunk to 40 feet in 1900 and stoping had been carried to a depth of 100 feet by the end of 1922. Little Stobie mine was bought by Mond in 1901, North Star in 1903, Frood Extension, adjoining the Canadian Copper Company's Frood mine, around 1910, Levack and Kirkwood in 1913, and Worthington in 1914. Mond also took an option on the Blezard mines in 1916 and began diamond drilling. It was Garson, however, which began shipping ore in 1908, that eventually became the top Mond producer, with 987,571 tons compared to 675,735 for Victoria mine by 1916. In 1928 it averaged 700 tons a day and had an average work force of 315. By comparison, the Levack mine produced 413,000 tons of ore in 1928. In 1927 Mond began to redevelop the Frood Extension to replace the Victoria mine which had been closed in 1923. By 1928 it had a daily work force of 128 men and a four-compartment shaft to 3,350 feet. For converter flux the Mond Nickel Company also operated the Coniston quartzite quarry, one-half mile southwest of

the smelter, from April to December 1922. The silica in the quartzite helped to remove the iron oxide in the matte as a slag. To the west, on the north shore of Lake Huron, Mond mined copper at Bruce Mines until 1921.

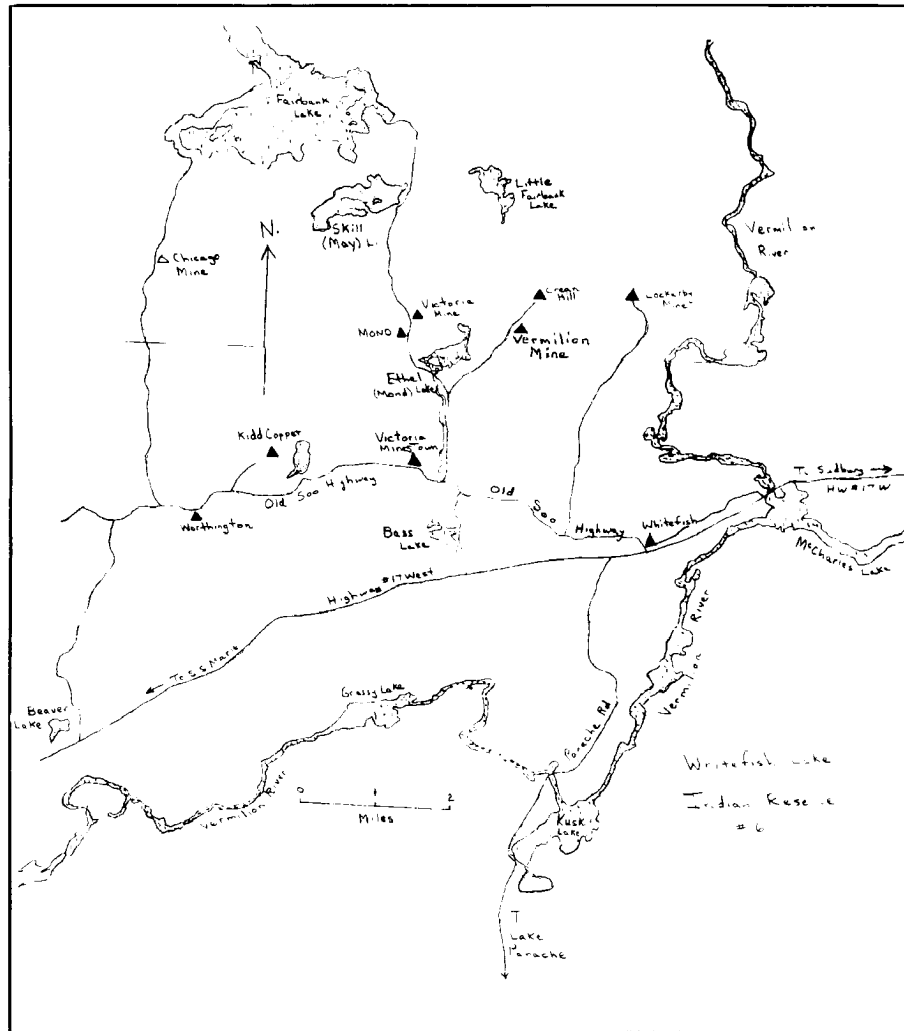


Figure 1. Location Map of Mond-Victoria Mines and Region
B. Makinen

The Bruce Mines location had some copper but no nickel and the siliceous ore went to the Coniston smelter, mainly as a flux, with 5,439 tons in 1921 alone. Mond also purchased small amounts of ore from the Alexo, Howland, and Mount Nickel mines, the first being in the Temiskaming district and the latter two in the Sudbury district.

The Victoria mine was originally named the Denison mine or the McConnell mine and was located 34 miles west of Coniston on lot 8, concession 4, Denison township. In 1886 Henry Ranger had prospected on behalf of Rinaldo McConnell and discovered the gossan ore. The land was purchased in 1887 by Emma McConnell, Alexander McIntyre and Joseph Riopelle and developed to some extent. It was sold to Dr. Mond in 1899 and mining operations were undertaken from February 1901 to September 1923, Mond may have named it Victoria Mine in honour of the British monarch, but it is also claimed that it was named after a French woman who lived in Victoria Mines. It was also known locally as the Mond mine. The village of Mond grew up in close proximity to the mine site.

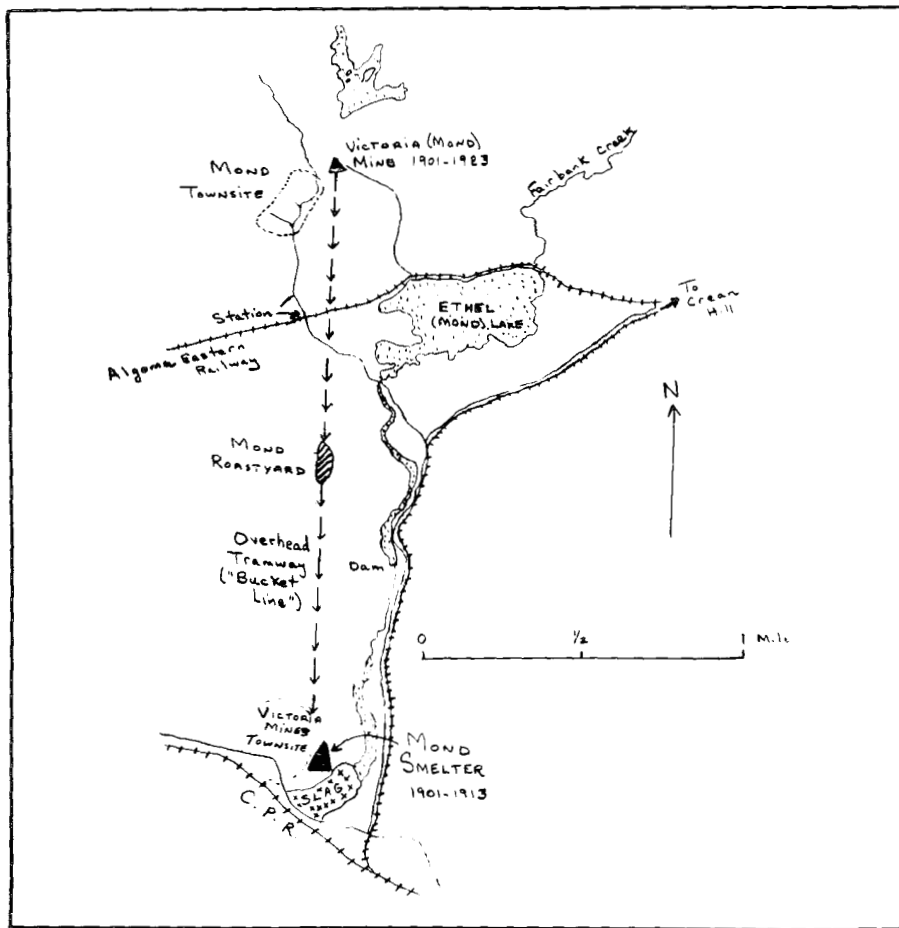
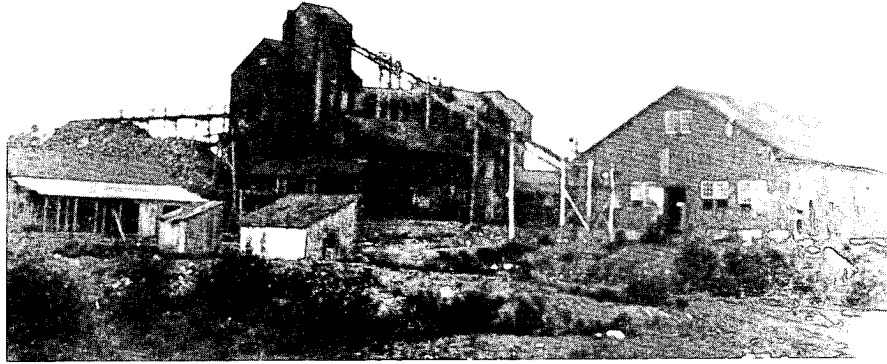


Figure 2. The Mond-Victoria Mines Setting
B. Makinen

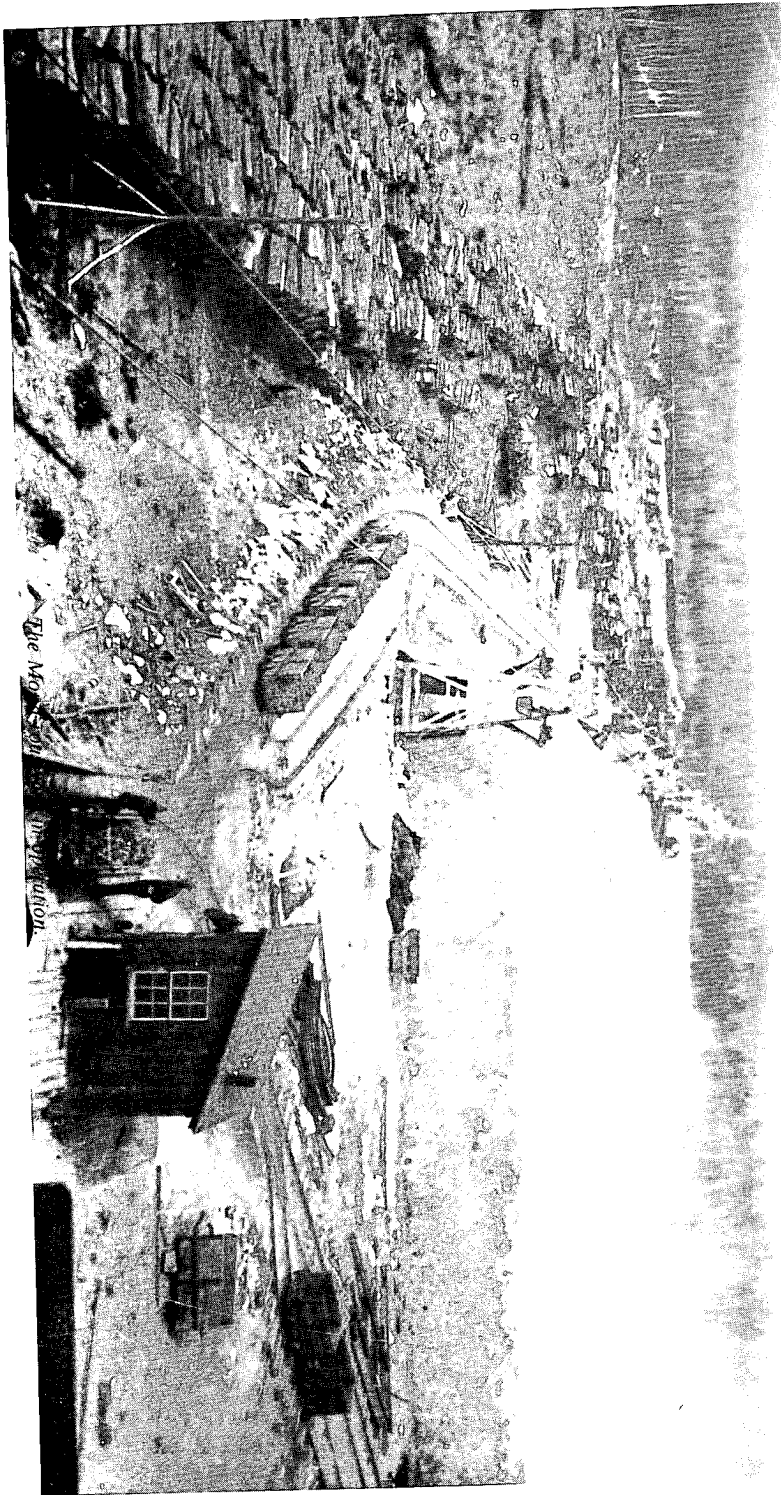


Victoria (Mond) mine, 1913.

This mine supplied the bulk of the Mond ore for 10 to 15 years with an average assay of 1.62% nickel and 3.36% copper content (2). In 1915 production was 5,000 tons per month with about 25% of the waste removed by hand. The mine had 18 levels and a three-compartment vertical shaft measuring 6 by 15 feet. It was recognized as the deepest mine in Ontario for some time, having reached a depth of 3,012 feet by 1919. The *Sudbury Star* of 8 May, 1915, reported that a "new hoist house is being constructed, one of the largest in Canada; six carloads of machinery have been shipped from Milwaukee." However, in 1922 production of ore dropped to 32,737 tons and the labour force to 78 men.

For many years Victoria Mines was the site of the Mond Nickel Company's smelter, handling not only the company's ore from Victoria mine, Garson, and Worthington, but probably some of the ore from the Canadian Copper Company. The smelter was located there because of its proximity to the Victoria mine, to the Canadian Pacific Railway line, the availability of fresh water from Ethel (Mond) Lake by way of Fairbank Creek, and local wood supplies for the steam boilers and roastery. The smelter operated on steam power until 1909, using cordwood boilers. Hydro-electricity arrived in 1909 from the Lorne Falls (Wabageshik) station on the Vermilion river and in 1916 from Nairn Falls on the Spanish river. The capacity of the smelter under steam was 60,000 tons of ore per year, but after it was remodelled for electric power in June 1909 the capacity was increased to 140,000 tons. A Bessemer matte containing 80% nickel and copper in nearly equal parts was produced. The smelter operated until 1913, although owing to circumstances connected with the refinery in Wales, it shut down for two years, from December 1902 to the end of 1904, except for a few months of operation in 1903. In 1911 the smelter employed 200 men.

Mining was carried on at the Victoria mine and the smelting of the ore at the townsite of Victoria Mines, two miles to the south. Between the two was



the Mond roastyard. The method used to roast "green" ore from the mine was heap roasting similar to that used in other roastyards in the district. The Copper Cliff roastyard, which closed in 1904, and two others immediately east of Copper Cliff, which closed in 1916, are examples of roastyards using a similar process. The green ore was transported by an aerial tramway or "bucket line" from the mine to the roastyard where it was roasted for three to four months or more in order to reduce the sulphur content in the copper-nickel sulphides from 25-30% to 7-10%. In 1910 green ore even came to the Mond roastyard from Garson via the tramway from the Victoria Mines smelter. The size of the roastbeds was perhaps up to 60 x 100 x 8 feet, the measurements of those at O'Donnell, near Creighton, which operated from 1916 to 1931. The fuel used was wood such as dead pine, much of which was stacked like cordwood beside the roastbeds. Ore was usually piled on the bed in order of texture, from coarse on the bottom to fine on the top. The "fines" regulated the speed of combustion in the heap; coarse ore comprised about two-thirds of the heap.

The tramway was controlled from the smelter at Victoria Mines. The metal buckets had a 1,000 pound capacity and came down the middle of the roastyard, between the roastbeds and the fuel wood, where they were unloaded. A railway line ran along each side of the roastbeds for use by the "jimmy cars". These small railway cars, as seen in the photograph, were approximately 4 x 6 x 5 feet, had an eight-ton capacity, and were pulled by horses. They were used to haul green ore on to the roastbeds and later to haul the roasted ore to the weigh scales, located at the south end of the roastyard, prior to its being "bucketed" to the smelter, one mile to the south. The Mond roastyard had no "bridge" as did the O'Donnell roastyard, for spreading the ore. A small work force of perhaps 18 to 20 men did the loading and unloading, receiving 22 cents per ton for their efforts. A hoistman, Michael Butler, and a stableman, teamster, blacksmith, and weigh scale operator worked at these suffocating roastyards, whose poisonous fumes destroyed all vegetation around them and where, on occasion, "one had to lay down on the ground to catch one's breath." The huge piles of cordwood were hauled to the roastyard by horses.

This location for the roastyard was chosen because of the presence of level land, a midway position between the source of ore at Victoria mine and the smelter to the south, and because of a local wood supply for fuel and water from nearby Ethel Lake. The danger of fire was very real; part of the aerial tramway, between the smelter and the yard, burned down in August 1907, necessitating the closing of the smelter until the tramway was repaired. The roastyard operated from 1901 to 1913, at which time a new yard was built near Mond's new smelter in Coniston (3). The Mond roastyard remains today a barren, desolate scar, devoid of vegetation, (Heap roasting in the Sudbury area was a doomed operation in 1929, when the International Nickel Company installed mechanical roasters at its Copper Cliff smelter. These reduced the sulphur content in the ore to seven per cent, prior to further processing in the reverbatory furnaces.) After smelting, first at Victoria Mines until 1913 and then at Coniston, the matte was shipped to Clydach in Wales for refining. Appendix II contains a report from the time, analyzing the reasons for refining in Wales rather than in the Sudbury area.

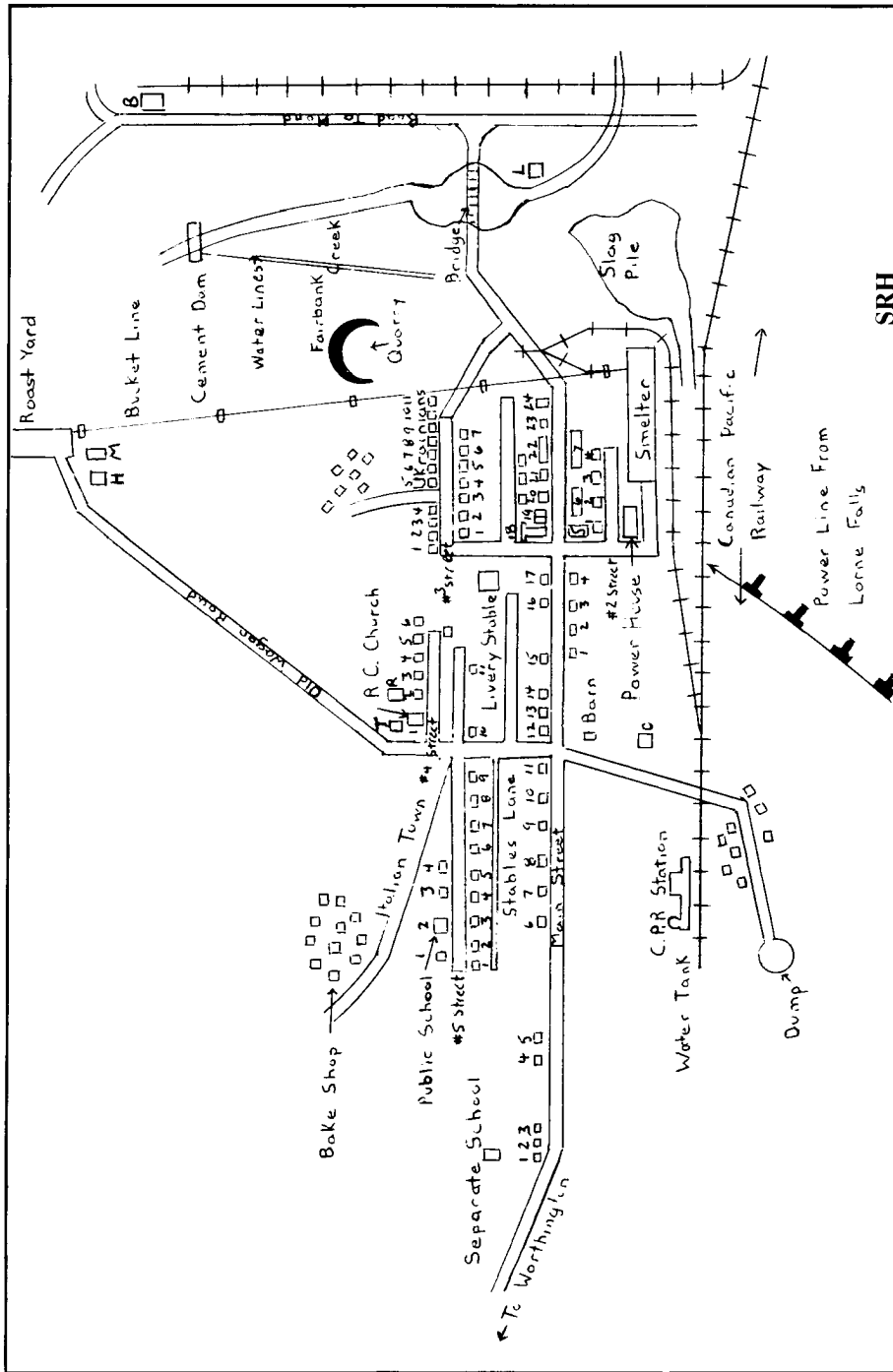


Figure 3. Victoria Mines Townsite c. 1905 - as per Mr. J.A. (Sandy) Butler

**Figure 3. Legend. Victoria Mines Townsite c 1905
Notations from original by Mr. J.A. (Sandy) Butler**

Main Road (or #1 Street)

NORTH SIDE

1. Maltais ?
2. Cardinal, Dan
3. Duschene, Tom
4. Coloton, Reg
5. Geofery, Jim
6. Cullen, Dan
7. Comerford, Tim
8. Griggs, John
9. McDonald, Wm
10. Paris, Tom
11. Robertson, John (Cement)
12. Walsh, Mickey
13. Thomas, Dan
14. McDougal, John (Apts.)
15. Nagel, Henry
16. Allard (Bowling Alley)
17. Barbeau (Room and Board)
18. Olivier, Elie and Darcy (Drygoods and Grocery)
19. Bennett. (Double tenement)
20. Tuttle, Chas (Team Rental)
21. Barton, Harley
22. McKormack Boarding House
23. Lytle Boarding House
24. Jail

SOUTH SIDE

1. Cripps, Wm.
2. Nagel, Henry (Butcher Shop)
3. McDougal Apts. (Barber Shop)
4. Pelltier, Harry (Grocer and Drygoods)
5. McDougal, Alex (Drygoods and Grocery)
6. McRae, Sleep Camp
7. McRae Dining Doom

#2 Street

1. Official's Clubhouse
2. Doctor's Office
3. Richardson, Robert
4. Mond Nickel Company General Office

3 Street

NORTH SIDE

1. Nicholis, Len
2. Menard, Chas
3. Allard, Joe
4. Lafrance, Nap
5. Jaworsky, Joe
6. Ukrainian
7. Ukrainian
8. Ukrainian
9. Ukrainian
10. Ukrainian
11. Ukrainian

SOUTH SIDE

1. Johnston, Jack
2. Rochon
3. Allard ?
4. ?
5. ?
6. Blake, Jim
7. Jolicoeur

#4 Street

1. Roman Catholic Church
2. Jackson, Jim
3. Creswell, Jim
4. ?
5. ?
6. Calhoun, Alex

#5 Street

NORTH SIDE

1. Scafe, Dan
2. Public School
3. Presbyterian Church
4. Ross, Thomas

SOUTH SIDE

1. Stevenson, Fred
2. Stevenson, Frank
3. Meurhead, Sam
4. Winks, Dan
5. Simms, Dan
6. Cripps, Wm
7. Chapman, Harold
8. Comerford, Tim
9. Nelson, Harry
10. Olivier, Elie
11. Phillips, Bill

C Corless and Hickson (Supt's)

T Tessier

R Roger

H Hales

M Morrow

B Ballard

L Lizotte

The Mond Nickel Company decided to move its smelting operations to Coniston, eight miles east of Sudbury, because it would be closer to other Mond mines, especially those at Garson. Furthermore, Coniston was on the main Canadian Pacific Railway line, the Toronto branch of which was only a short distance to the west. Coniston was also near the main line of the Canadian Northern Railway.

As the Royal Ontario Nickel Commission *Report*, explained:

From 1901 until 1913 the company conducted its smelting at Victoria Mines, but with the final perfection of its refining plant, and good prospects of increasing business, the limitations of the Victoria Mines site, which was not adapted to further expansion, were felt to hamper the company's operations. There was railroad connection with but one line, and after the purchase of additional mines, the smelter was found to be too far from the centre of the ore supply.

Mining continued at Victoria mine until 1923. Interestingly enough, in 1969 the International Nickel Company began pumping out the 100 million gallons of water which had collected over the 47-year period of closure, and in 1973 began mining at the 2,000 foot level. By 1975 a new ore body was being developed at the mine but it was closed again in 1978 as being uneconomical. From 1901 to 1978, 1.5 million tons of ore were removed from the mine. No buildings remain at the site today.

The Victoria mine had contributed to the birth in 1901 of the settlement of Victoria Mines, 22 miles west of Sudbury on the Sault branch of the CPR. The residents of Victoria Mines numbered from 300 to 500, a total that included some "floating population." Hector "Toe" Blake, coach of the Montreal Canadiens, was born in Victoria Mines. Figure 3 is a plan of the townsite of Victoria Mines based on a map drawn from memory by J. A. (Sandy) Butler.

The community of Victoria Mines died in relative infancy, after a short existence from 1901 to 1913. Its sudden death is an excellent example of the power of corporate decision-making in a one-industry town. When the smelter closed, company houses were sawed into sections, numbered, and moved to Worthington or Coniston. Private homes were torn down and taken to other locations. Sandy Butler's parents moved their home to Kathleen Street, Sudbury, where it later burned down. Today only two buildings remain in Victoria Mines, one of them the old separate school. Both are used as private homes.

The village of Mond had a longer existence than did the Victoria Mines townsite. The Victoria (Mond) Mine provided the *raison d'être* for the village of Mond and its lifespan coincided with that of the mine, from 1901 to 1923, although the last house was not removed until 1936. Of note is the fact that

early Garson was named "Mond", as probably was Levack. The village of Mond was located two miles north of old Highway 17 West and about three miles south of Fairbank Lake in Denison township. It had a rolling, well-drained site with a small creek running through the village. Gravel underlay much of the site, providing a reservoir of fresh water, and today a gravel pit bites deeply into the southwest part of the former townsite. The site and the surrounding area was originally well forested; logs in the homes reached two feet in thickness and stumps left by the logging firms, which had earlier worked the land, are as much as three to four feet in diameter. The nearby lakes, Ethel (Mond), Fairbank, and Skill (May), provided many recreational opportunities. Mond was located within easy walking distance of the mine, and the C.P.R. and the Algoma Eastern ("Agony") Railway provided access to Sudbury.

Estimates of the number of residents vary, but the population was probably at the lower end of the 300-500 range with both a permanent and a transient element. Males seem to have outnumbered females. According to the *Sudbury Star*, 8 May 1915:

A few of our young bachelors have begun batching it this week and have occupied an up-to-date bachelor's club house, all nicely furnished and cleaned, but unless a few more fair damsels come to town, they will become confirmed devotees of single blessedness.

Ethnically, Mond was a "League of Nations," with Finns, Ukrainians, Poles, Italians, French and British among the population. The Finns and Ukrainians had their own halls. A former resident claimed that there was no "class distinction" but that the Finns sometimes kept to their own "classes" at dances. Muckers, for example, tended not to socialize with machinists at these functions. On the whole, the many ethnic groups got on well together even though they could not always understand each other. Language was a natural cement within the various ethnic groups; it is claimed that Matti Manninen, a Finnish shift boss, had all the Finns on his shift, and that Ballantyne, another shift boss, had mainly British workers under him.

The town plan as of 1917-1918 based on a map drawn from memory by the late John Hill is shown in Figure 4. The streets had no names although the "main drag" was remembered by Vaino Manninen as Front street. It ran east-west and Leonard's store was located there. The main corner was Dunlop's Corners, with the school located just to the south. Buckner's Corners was in the north end of the town, close to the mine. The original road running through the town to Fairbank Lake was much narrower than the present road and had more bends. Public buildings in Mond included two general stores, a school, the Finnish and Ukrainian halls, two Mond Nickel boarding houses, a Slovak boarding house, and Finnish boarding house with a pool room. The stores were owned by Albert Leonard (later by Mr. Juneau) and Mr. Rozumney: the latter establishment included an ice cream parlour.

Most of the houses were constructed of pine logs or were frame buildings with "lap siding." The Mond Nickel Company owned some of them, as many as twelve at one point after 1913, but most were privately owned and built on land leased

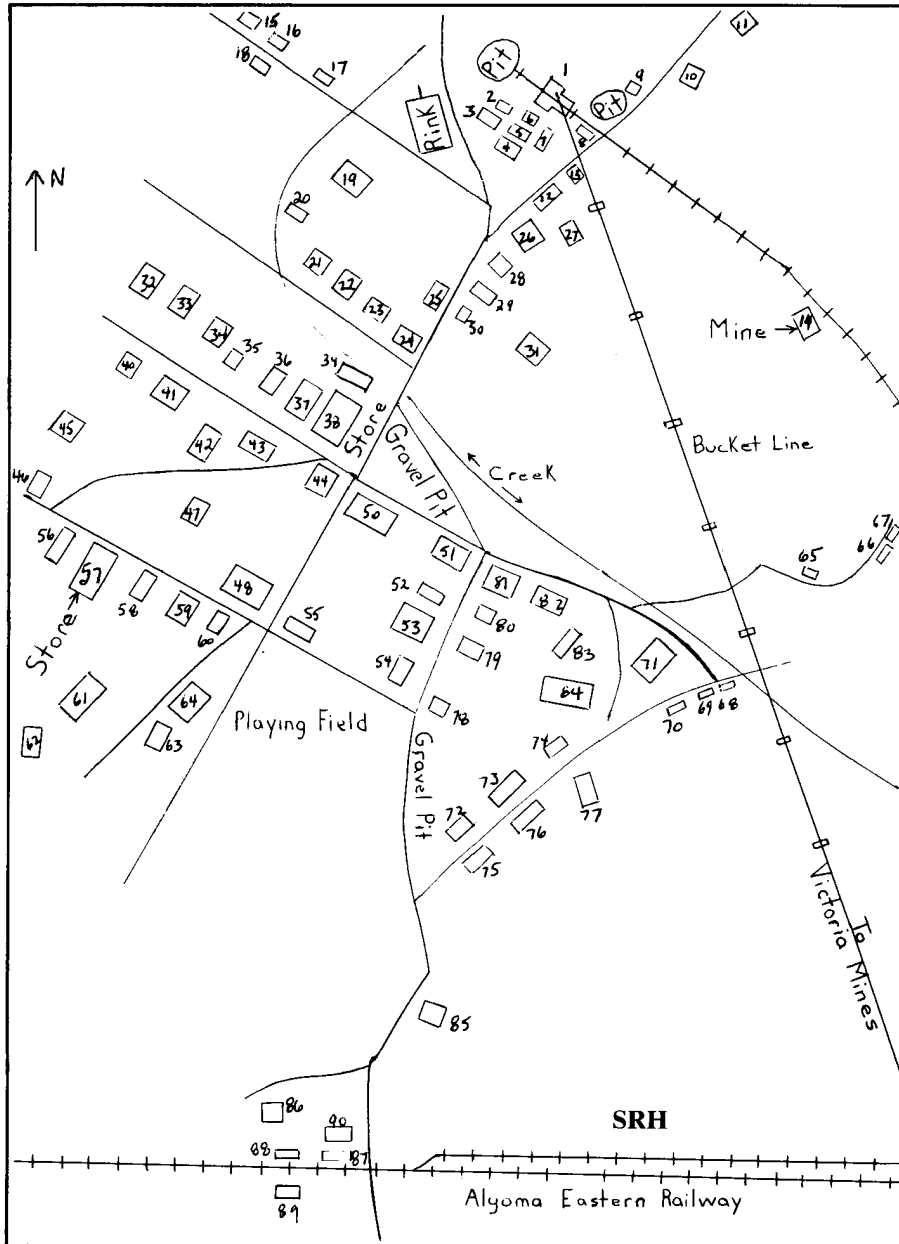


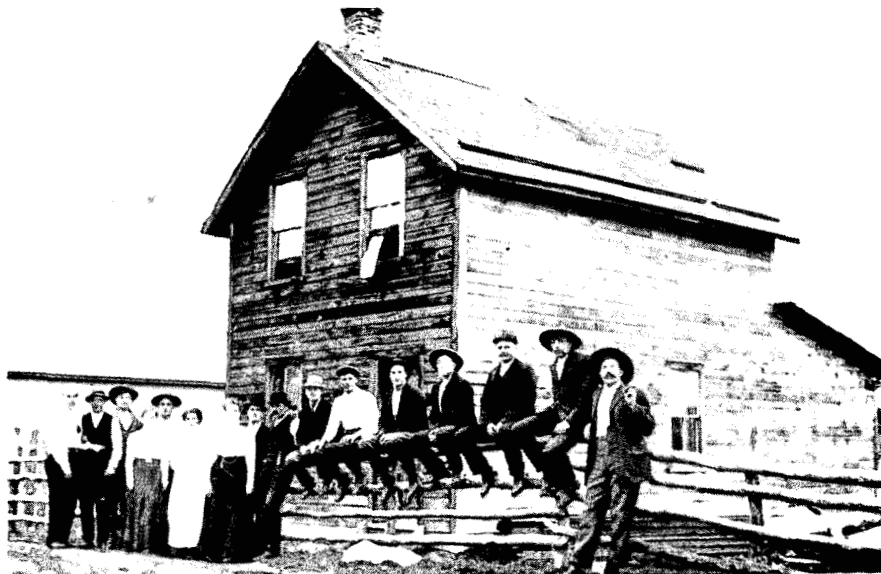
Figure 4. Mond c. 1917-18
as per Mr. J. Hill

**Legend. Figure 4. Mond c. 1917-18,
Notations from original by John Hill**

- | | | |
|-----------------------------|-----------------------------|----------------------------------|
| 1. Victoria Mine | 32. Morris | 63. ? |
| 2. Old Dry House | 33. Langdon | 64. Lane |
| 3. New Dry House | 34. Hill | 65. German father and son |
| 4. Hoist House | 35. Tacharuk | 66. C. Lewkoski |
| 5. Compressor Room | 36. McKerrow | 67. ? |
| 6. Boiler House | 37. Store Warehouse | 68. ? |
| 7. Machine Shop | 38. Leonard's Store | 69. Tymshuk |
| 8. Blacksmith Shop | 39. Their Ice House | 70. Cadieux |
| 9. Fuse House | 40. Jodoun | 71. Boarding House |
| 10. Dynamite Thawing | 41. Thomas | 72. H. Walker |
| 11. Dynamite Storage | 43. Leonard's Barn | 73. P. Walker |
| 12. Office and Warehouse | 43. Leonard's Residence | 74. Rose |
| 13. Carpenter Shop | 44. Jodoun Sr | 75. Bayliss |
| 14. Victoria #4 Mine | 45. Niemi | 76. ? |
| 15. Ballantyne | 46. ? | 77. Sandberg |
| 16. Maki | 47. Passi | 78. Prime |
| 17. Seyser | 48. Kilby | 79. Kilpinen |
| 18. Buchner | 49. ? | 80. Manninen |
| 19. T. Lemchuck | 50. Constantineau | 81. Hall |
| 20. P. Martin | 51. Villeneuve | 82. Boarding House and Pool Room |
| 21. O. Jarvi | 52. Potti | 83. Stable |
| 22. M. Manninen | 53. School | 84. Finn Hall |
| 23. Mattinen | 54. Boarding House | 85. McGee |
| 24. Myllynen | 55. ? | 86. Burton |
| 25. Wiltshire | 56. Collins | 87. Station A E R |
| 26. Mr. Mumford (Mine Supt) | 57. Store (Rozumney) | 88. Section Foreman |
| 27. His Barns | 58. Boarding House (Slovak) | 89. Section Hands |
| 28. Electrician | 59. Anderson | 90. Burton's Shop (Lineman) |
| 29. Humphrey | 60. ? | |
| 30. ? | 61. Elliot | |
| 31. Heikilla | 62. Burns | |

from the company. Some of the log houses were built by the Finns in their "talkoos" or bees. Kalle Sillanpaa's log house, for example, was built in this way. Basements were rare although a few houses, such as that owned by Matti Manninen, had them. Cement or concrete foundations were also uncommon. Leonard's store had a rock basement with mortar and v-joint fir siding. Houses were chinked with strips of wood, cow manure, and a plaster of lime and sand, and the interiors of many were whitewashed. In the early years of Mond some log buildings, such as boarding houses, were joined together to conserve heat and to provide easier passage from one to the other as in the third photograph. Only one sauna existed in the town and was operated by Mr. Fred (Francis)Laine. He provided Saturday night public saunas for 15 cents per person. After 1923 most of the homes were torn down as they were on company land and were not, for the most part, worth moving. Many were sawn up for firewood. Matti Manninen's house, however, made of v-jointed fir, was moved to Eyre Street, Sudbury, and superintendent Mumford's house was moved to Froot. After 1923 some of the "Mondites"went to live in Worthington and Froot. Olavi Mattinen's family was the last to leave, around 1936.

Nearly everyone had a barn with some cows, chickens, pigs and calves, and potatoes were grown; thus, some degree of self-sufficiency existed. Butter, cheese and milk were sold, though there was no pasteurization at the time. Vaino Manninen's father, in addition to working at the mine, had one of these "farms". The men worked 10 hours a day, 6 days a week for the company and had no vacation. Farming was, therefore, a family enterprise. These efforts represented a very important supplement to the family income at a time when, as in 1921, muckers received \$3.70 per day, drill operators (runners) \$4.20 per day, underground machinememen \$4.00 per day, and a rockhouse worker \$2.60 per day.



A Finnish boarding house in Mond.



Washday in Mond before the advent of electricity. Pictured are Mr. and Mrs. Sillanpää and a friend.

Electricity was unknown in the homes, with the exception of superintendent Mumford's. Kerosene lamps were the order of the day. The mine had steam driven pumps and pneumatic drills, using compressed air, until 1909, when electricity arrived from the Mond Nickel Company's power station at Lorne Falls on the Vermilion river. Another power generating station was opened at Nairn Falls on the Spanish river in 1916. The Wahnapiatae Power Company serviced the Coniston area. Power from the Mond hydro-electric plants was distributed by the Lorne Power Company, a wholly-owned subsidiary of the Mond Nickel Company. The investment in hydro-electric plants and transmission lines was over \$1.1 million. Home heating was accomplished mainly by wood stoves, although one former resident claimed that "everyone had a coal stove." Coal cost between \$8 and \$9 a ton. The company bought a carload of coal each fall for the Mond residents, who purchased it from the company. Firewood was cut in the bush with bucksaw and axe and was hauled by horse and sleigh; it was then cut into shorter lengths with a portable gasoline circular saw. As 40 to 50 cords were needed each year for heating and cooking, much work was involved.

Water from wells was in good supply because of the gravel site. Wells were, for the most part, individually owned and yielded heavily in low-lying areas. There was also a town well. Buckets were used and there was no running water. Water was heated on the kitchen stove as no electricity or hot water tanks were available. Sewage facilities were virtually non-existent. There were no septic tanks or field beds and dishwater was "heaved out the back door." Sinks were also rare. Outhouses provided toilet facilities and Mond employees served as "honeydumpers" or "scavengers." There were no telephones except at the mine. Nor, until 1919, were there any radios and then, as one resident recalled the best reception was after midnight.

The horse was essential to transportation in Mond, pulling buggies, wagons, and sleighs according to the season. A livery stable for the rental of horses in Mond was operated by Sam Anderson, who also had another one in Victoria Mines. The first motor car in Mond appeared in 1913. It was owned by Matti Manninen who used it as a jitney (taxi). By the time the mine shut down there were 13 cars in Mond, mostly Model T Fords ("Tin Lizzies"). To travel at 30 mph was "flying" in those days. A trip to Sudbury and back on the original corduroy road took all day. The highway was not passable in winter and usually not useable until late spring. Ploughing the highway did not begin until about 1937, and so the only significant winter driving was in Sudbury. The *Sudbury Star* of 8 May 1915 reported that:

There is some talk about automobiles and if the talk crystallizes into purchases a few of our miners will soon be motoring to work. Let us hope this is true, for as cars are very scarce in this part of the country, it would help liven things up a little.

The railway and steam engine played a significant role in transportation in the area. The Algoma Eastern Railway, originally the Manitoulin & North Shore Railway, was located immediately south of Mond, having reached there in 1911. A train went west in the morning and east in the evening and took more than one hour to get to Sudbury at a fare of one dollar. Passengers from Mond, using the railway, had to stay overnight in Sudbury. A box car served as the Mond station of the Algoma Eastern Railway and was located a short distance south of the village. The Algoma (Sault) branch of the CPR had been built through the future site of Victoria Mines earlier, in 1883 or 1884. There were two trains daily in each direction enabling a traveller to go to and from Sudbury in one day on this line. The CPR bought the Algoma Eastern Railway in 1930 and removed portions of its tracks during the next 10 to 15 years. In addition, the Mond company owned and operated 21 miles of railway, built at a cost of \$300,000 with a further \$150,000 invested in rolling stock, in connection with its mining and smelting operations. About three-quarters of this system was operated with company engines and crews.

A unique form of transportation to and from Mond was sometimes provided by the "bucket line"; occasionally individuals hopped a ride on it to and from Victoria Mines thus saving themselves a good half-hour walk. The buckets also carried mail orders from Eatons and Simpsons and groceries from Sudbury which arrived via the CPR at Victoria Mines. Travel was slow. John Hill's father travelled from Whitefish to Sudbury with a yoke of oxen, leaving at 4 a.m. and arriving ten hours later at 2 p.m. Mail arrived in Victoria Mines via the CPR and was then shipped north to Mond, by horse and sleigh in winter, and by horse and buggy in summer.

Few services were available to the residents of Mond, but people used what was there and otherwise "made do." There was an elementary school of two stories and two rooms, with approximately 45 students per room. The left side was for boys and the right side for girls. Grades 1 to 8 were taught by two teachers and the "basics" such as history, spelling, composition, grammar, and literature were



Mond on Victoria Day, 1923. White building on the right is the schoolhouse.

stressed. The teachers included a Mrs. Black, who taught in Mond before 1914, Harley Barton and his wife, the former Miss Williams, who taught there after 1918, Lola McNaughton in 1919, and Miss Ingram. Mr. Christie was the inspector around 1920. Boys usually stayed home on Monday mornings to carry the laundry water for their mothers. Chores, such as carrying wood and water, were plentiful for the young boys. After the public school in Victoria Mines closed in 1913 the children travelled the two miles to the Mond school until about 1927. Life was not without incident as when a new "student" enrolled one day. Maria and Matti Kuula's cow somehow found its way upstairs; it was later lowered back to earth with ropes. No secondary school was available locally so students travelled to Sudbury. They had to pay \$10 per month for tuition and this was reimbursed by the Mond Nickel Company. Although there were no church buildings in Mond, itinerant ministers occasionally held services in the school. There were no permanent medical facilities in town but a doctor came once a week from Victoria Mines, and later from Worthington. The Mond Nickel Company's physician in 1901 was Allen Roy Dafoe and Joan Thomas was the visiting nurse. During the flu epidemic in 1918 the school became a hospital. Victims included the strong and healthy, who usually died of pneumonia because they did not take care of themselves after initial contact with the disease. Pine coffins were made at the mine. Mrs. Tynne Tolmonen's father, Mr. Fred Laine, took 21 victims from Mond to the cemetery during the epidemic. There was often no time for a proper burial ceremony or for the making of a tombstone. The public cemetery was in Whitefish near the new Highway 17 West.

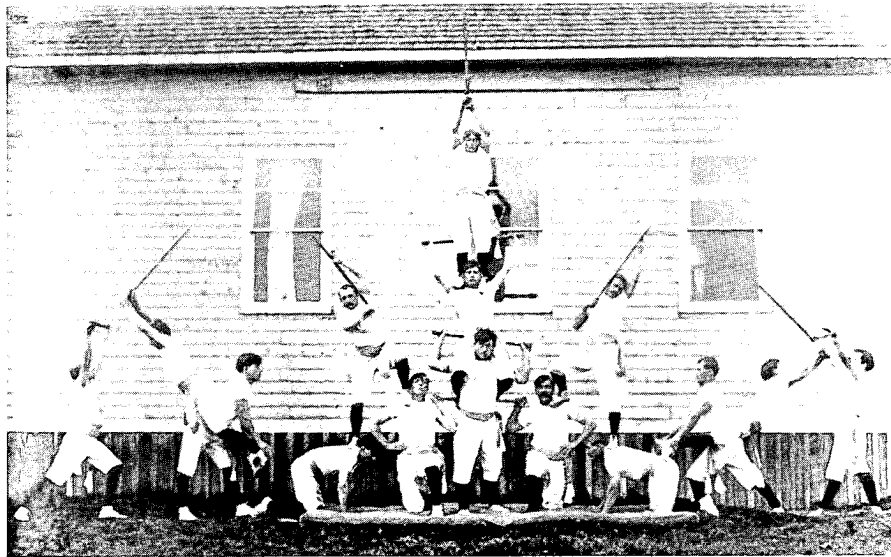
Mond had no policeman but was, in the main, a peaceful town with no dance-hall brawls or similar disturbances. Victoria Mines and Worthington had police employed by the Mond Nickel Company. A sheriff and jail were to be found in Victoria Mines, and Crean Hill had its own sheriff. Complaints against fellow

citizens in Mond were made to the mine superintendent who, in effect, “ran the town.” Mond was a “dry” town with no bootlegging. Some men would go to Crean Hill to play cards and buy beer in gallon tins from bootleggers since prohibition was in effect from 1916 to 1927. The only serious crime recalled was a charge and conviction of attempted murder in a dispute over a woman; the guilty party was sentenced to five years in Kingston penitentiary.

It seems that culturally and athletically, Mond was an active community. The *Sudbury Star* reported in May, 1915:

Football is again flourishing in this little mining town of the nickel district and we feel confident that we have a much better team this year than last season and can give any team in the league a race for the Shield. The Mondites are going in strong for sports this year and it is hoped they will win a few championships, before the season is over. Tennis, high jumping, running, boxing, etc. are being taken up. Tennis nets are stretched across the street every evening as our tennis court is not finished yet, but when completed it will be one of the finest of its kind in New Ontario. Boxing has been progressing fairly well. It will probably be a useful science for our football players when away from home. At present a few of the local sports are carrying beautiful black eyes.

The Finns had a *Voimestula Seura* or athletic club which included an active gymnastics team.



Mond gymnasts outside the Finnish Hall.

The “higher class” Mond Club, which was a renovated log cabin on one of the corners, had an orchestra which included pianos and violins. Teacher Harley Barton played the violin in this orchestra. The Ukrainians provided their own

music in their own hall. Band music, plays, gymnastics, and dances featuring accordion music were among the activities carried on at the Finnish hall. The Finnish band was directed by Vaino (Eino) Hamari who later moved to Detroit. Another band member, Jallu Hamari, was to start the Melody Music store on Durham Street, Sudbury.

Amusements at Mond were characterized by active participation. In winter, toboggan parties for the whole family, skiing, snowshoeing, sleigh rides, and skating on the rink near the mine were typical pastimes. In summer, Sunday picnics at Ethel Lake, blueberry picking, croquet, baseball, and tennis were enjoyed by the "Mondites." Hunting and fishing in and around the nearby lake areas were enjoyed in their seasons. Also popular were the Victoria Day parade, the summer fair on 1 July, and the fall fair. The fairs were held at the picnic grounds on the south side of the town and included games, races, and baby shows. Softball competitions took place against Crean Hill and Worthington.

All events were newsworthy in such a small community and the report in the *Sudbury Star* in May 1915 is typical:

Mr. Sam Anderson, formerly of Sudbury, is now a Mondite. He began work in the blacksmith shop here recently. Mr. Robert Sims of Coniston is now in Mond for a few weeks assisting Mr. Walker in the warehouse. Mr. William Thompson and son Wesley were in Sudbury on business last week.

The ever-present possibility of accidental death hovered over mining and smelting communities of the time and Mond and Victoria Mines were no exception. The *Ontario Mining Journal* of 1901, 1909, and 1911 reported the following accidents at Victoria Mine and the Victoria Mines Smelter:

- (i) 9 June, 1901 — 10 p.m. — John Donnelly and John Frenchy were killed by a piece of timber falling on them from the top of the shaft.*
- (ii) 8 June, 1909 — 10:30 a.m. — Three muckers were crushed to death by falling rock.*
- (iii) 20 November, 1909 — A mucker was injured by falling ore — died on November 24th.*
- (iv) 18 December, 1909 — Steve Kat was killed while getting into the cage.*
- (v) 11 December, 1911 — John Baby was crushed beneath an overturned ladle at the smelter in Victoria Mines.*

All that remains today of the Victoria mine are two open shafts enclosed by fencing and full of water. Victoria Mines townsite has been reduced to two buildings and a large slag pile. Little else remains than the foundations of the smelter and of various other buildings. The community of Mond has virtually disappeared from the map, its former existence evidenced by little more than a few hidden foundations. Nature has been healing the marks left by man and,

with the exception of the Mond roastery, has proved to be a skilled physician. Nevertheless, the Mond-Victoria Mines area played an important role in the economic history and geography of the Sudbury Basin in the early part of this century and should not be forgotten.



One of the two remaining original homes in Victoria Mines, 1984.

1. By a voluntary liquidation the company was reorganized under the same statute and the new company was incorporated on 22 July 1914.
2. See Appendix I for a comparison of the ore production and average nickel and copper assay of the Mond Nickel Company mines to 15 September 1915.
3. By 1917 the Mond Nickel Company roasted only approximately 30% of its ore and only in winter, so as to reduce the effects of sulphur dioxide on the local populations and to minimize forest fires and crop damage.

Appendix I

MOND NICKEL COMPANY ORE PRODUCTION TO 30 SEPT. 1915
(from the Royal Ontario Nickel Commission, **Report, 1917**,
p. 487.

Producing Mine	Production (Tons)	Assay % Ni.	%Cu
1. Garson	796,011	2.3	1.9
2. Victoria	596,934	1.9	3.4
3. Worthington	74,033	3.0	3.4
4. Kirkwood	58,468	3.2	1.5
5. North Star	53,716	2.1	0.8
6. Levack	27,777	2.8	0.5
7. Little Stobie	1,585	-	-

TOTAL —

to the end of 1915* 1,608,524 tons

to the end of 1916 2,027,713 tons

*information from Mond Nickel Company

Additional ore treated by Mond Nickel Company to the end of 1916 (tons):

(i) Alexo	34,650
(ii) Bruce Mines	26,487
(iii) Mount Nickel	13,348
(iv) Howland	486

Aggregate of ore smelted to the end of 1916 —

2,065,504 tons (95.3% waste)

to produce

96,591 tons of matte (18% waste)

containing

39,006 tons of nickel, and
40,125 tons of copper.

Appendix II

WHY REFINING IN CANADA BY MOND PROCESS NOT FEASIBLE
Synopsised from Royal Ontario Nickel Commission, **Report, 1917**

- I) The annual temperature range in the Sudbury area was too large for the delicate temperature differences required in the refining process.
- II) A skilled labour supply was available in Wales, better able to handle such problems as leaks of the deadly poisonous "nickel carbonyl gas" through maintenance of a gas-tight volatilizing plant.
- III) Fuel for the refinery, in the form of anthracite coal, was available in Wales.
- IV) Cheap chemicals, needed in the refining process, were produced in Wales.
- V) Raw materials, other than matte, were less expensive in Britain than in Canada.
- VI) Clydach already had a costly plant and, if it were closed, jobs would be lost. The plant could already produce 5,000 tons of metallic nickel a year, as well as copper sulphate and nickel sulphate. No metallic copper was produced. British investment in Canada would be discouraged since time would be needed to build new facilities and thus investors would have to wait longer for returns on investment.
- VII) Cheap sea transport of the finished products was available via Swansea in Wales. Copper sulphate, being about 75% water and weighing about twice as much as the matte, would be expensive to ship across the Atlantic to markets. It would be 2 1/2 times as expensive as shipping the matte alone and consequently markets would be lost because of the increased price.
- VIII) Clydach had the facilities for shipping copper sulphate to the vine-growing Mediterranean nations, where it was used to prevent blight on the vines. Quick transport was required during the short season in which it was needed — Canada was too far distant for sufficiently quick transport.
- IX) The Mond Nickel Company was already contributing to the development of Canada and to the provision of jobs via its mining, roasting, and smelting operations, and was successfully working the mines of firms which had previously failed.



Post Office and General Store in Coniston, c. 1910. Pictured are Dennis O'Brien with daughters Margaret, Inez, and Ann and Mary Seeley.

CONISTON

by Michael Solski

Coniston is located in Neelon township east of the city of Sudbury. After the reorganization of the Sudbury area into a regional municipality in 1972, Coniston became one of the constituent communities of the town of Nickel Centre. The topography of Coniston is typical of the Cambrian Shield, with extrusions of the Laurentian mountain chain to the north bordering the valley-like area of the town. A crescent-shaped ridge of similar geological structure lies to the south. The hilled rock formations slope to the flats, roughly bisecting the town in its eastern-central area. This natural division explains much of the socio-economic development of the townsite.

Coniston has an unusual history with agriculture, lumbering and mining contributing to its development in a particular way. The area later to be known as Coniston saw its first flurry of activity in the early 1880s when surveying began. In 1883 the Canadian Pacific Railway's main line to the west was pushed through the region. When the land surveys were completed, the area was incorporated as Neelon township, after Sylvester Neelon, member of parliament for the riding of Lincoln.

The first family took up residence in 1902 when John and Peter Butler and their parents cleared the trees and developed a farm of approximately 18 acres on both sides of the creek which cuts across the present Highway 17. It is highly probable that the Butlers settled in the valley because of the large stands of timber, Colorado pine, Carolina poplar, and hemlock. By 1904 five other family farms had been established in the area, growing the so-called "cold crops" of hay, rye, and oats, which are most easily grown in the north.

In 1905 the Canadian Northern Railway (now the Canadian National Railway) started to build its line through what was to be East Coniston, not far from the CPR main line. Three years later the CPR began construction of the Romford-Toronto line through Coniston. There was great need of wood in railway construction, and tremendous amounts of timber were required for the open-bed roasters used for smelting in the Sudbury Basin. To help meet this need the St. Clair Construction Company began operations in Coniston and opened the Coniston Woodworks Lumber Mill.

Added to the farming population, then, were those involved in railway, lumbering, and construction. By 1905 the number of families had increased to 20 and there were also a number of single men. Settlement created a desire for identity and a petition was sent to Ottawa asking the federal authorities to establish a local post office. Without it residents were required to travel to Sudbury to send or receive mail. The request was approved and suggestions were invited for a name. Dennis O'Brien, one of the early settlers, undertook to find an appropriate one. He would have preferred the name Neelon but after receiving several ideas he settled upon the name of Coniston, suggested to him by T. Johnson, the

railway construction superintendent. Johnson had been reading a novel with its setting in Coniston, in the English Lake District. The post office was established and O'Brien was named as the first postmaster.

The village of Coniston received a major impetus to growth in 1913 when the Mond Nickel Company moved its smelting operation there from Victoria Mines. Unable to expand its Victoria Mines site, which had been in operation since 1901, the company decided to move to Coniston, attracted by the favourable terrain and the excellent railway facilities. The ore from all the Mond Nickel mines could be brought to Coniston for smelting and then shipped by CPR to Montreal for shipment to the company's refinery at Clydach in Wales. The smelter was large enough to process all the Mond ores, present and future, and the Garson and Frod Extension ore bodies could be used to full advantage.

In 1911 Sir Alfred Mond had negotiated for land and, according to the records, five family farms were sold to the company for approximately \$6,000. These lands totalled some 3,700 acres and their sale brought to an end the agricultural orientation of the community.* At this time Mond's manager in Canada was Dr. C. V. Corless, formerly a lecturer at McGill University. A very astute individual, he was largely responsible for the Mond expansion programme including the acquisition of the Frod Extension in 1911 and the Levack property in 1913. He saw too that Coniston, as a company town, would be a successful venture in its own right.

Mr. Edgar T. Austin was appointed by the company to survey the town and plant sites. The townsite was to the north of the CPR line and the smelter was roughly one mile to the south. Austin blue-printed a "model" community with all the modern conveniences. Many of the first company houses were shipped by rail from Victoria Mines. The construction of the new Coniston townsite began with the provision of services such as streets (on a grid pattern), sidewalks, drainage, a water distribution system, and fire protection.

As early as 1906 the Wahnapiatae Power Company had built a generating plant on the Wahnapiatae river some two miles distant from Coniston. With the advent of the townsite in Coniston, the Mond Nickel Company negotiated a long-term purchase agreement for electrical power from that source. Mond Nickel obtained its water from the Wahnapiatae river. This was pumped through 6,000 feet of 10-inch steel pipe to a 100,000 gallon tank at the smelter. The village of Coniston was supplied by a branch from the main line. Water pressure was constant and assured in case of fire. The company had completed the water installations by 1913.

In the same year, 11 executive homes and 46 cottages were built by the company, and there was also a club house with accommodation for 40 or 50 men. The club house was destroyed by fire in 1943. A similar building, the Nickel Club, built in 1913, was destroyed by fire in 1923, and later rebuilt. Two three-room schools were built, one public and one separate. Prior to 1913, the only

* Early records indicated that the 1910 five-member council was composed of Reeve W. J. Quesnel, a farmer; and Councillors T. Rochon, Emerier Gauthier, and Joseph LaForest, farmers. The remaining seat was occupied by Ed Armstrong, a miner.

school in the vicinity had been a single-room log building at the south end of what is now Fourth Avenue, supervised by the hardworking Father Guillaume Lebel, s.j. A fire hall, a combined municipal building and jail, and a customs office were also built.

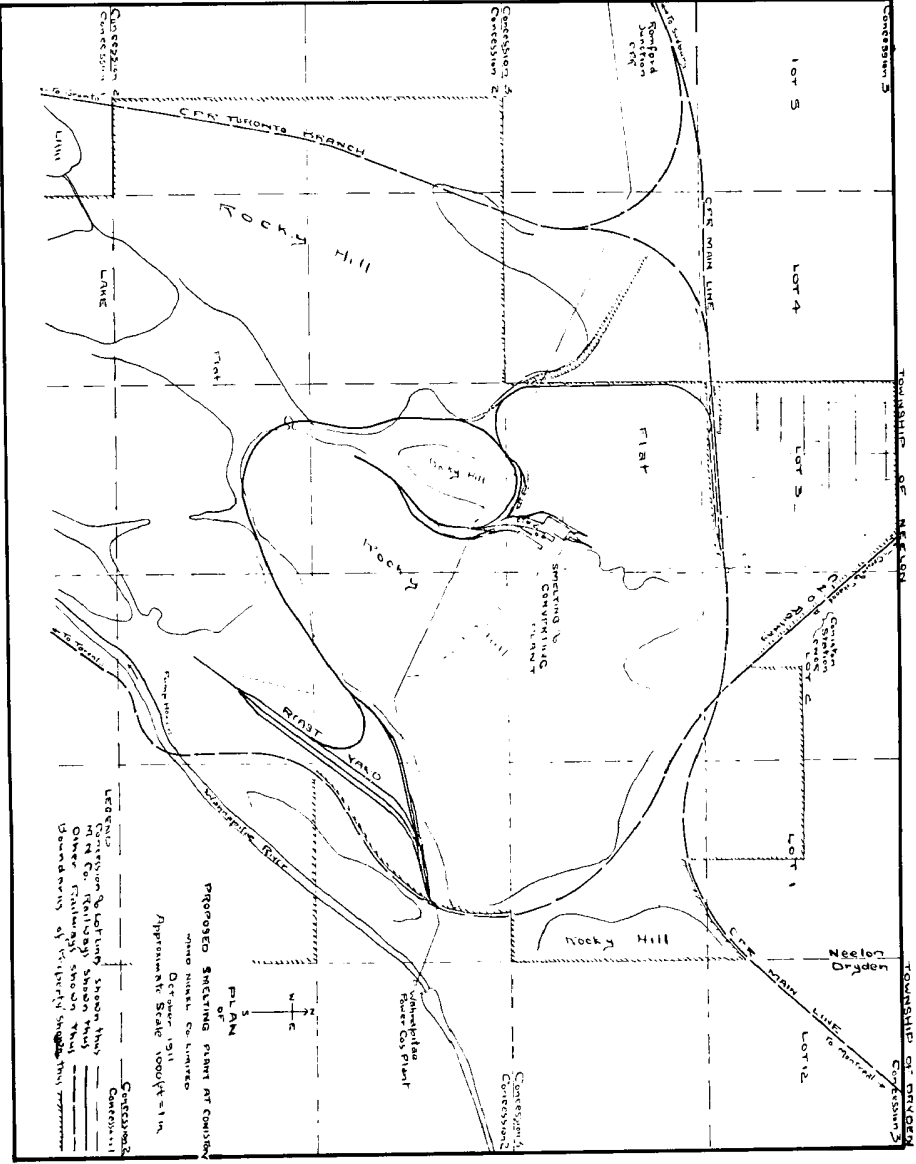
In the planned area of the town, the lands assigned for churches and commercial establishments were leased for 99 years. The building which housed All Saints' Anglican Church was brought from Victoria Mines and its first service in Coniston was held in June, 1914. St. Andrew's Presbyterian Church was opened in Coniston in 1914, the building also having been moved from its original site in Victoria Mines. The first Roman Catholic church was established on land given by Mr. W. Aubry, with the aid of Father G. Lebel who was in charge of missions both east and west of Sudbury.

The company welcomed retail merchants to the community during this period. Among the earliest were the Oliviers who came from Victoria Mines. D'Arcy Olivier later became clerk of the township of Neelon-Garson and the first town clerk of Coniston. Other merchants included the Norquay Brothers, Dan Chmara, and T. Pelletier, who operated the grocery store. In 1921 Antoine Michaud began business as a pharmacist.



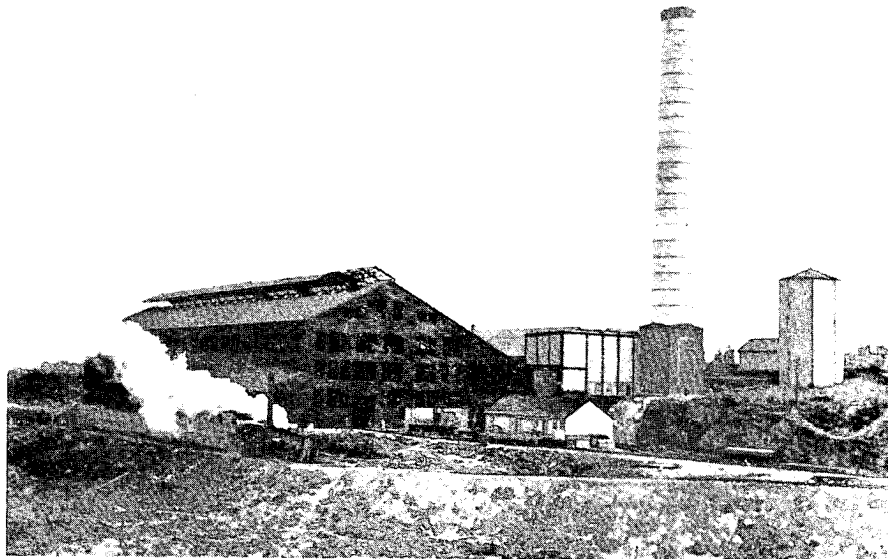
Second Avenue, Coniston, c. 1913-14.

Map 1



The new Coniston smelter officially went into operation on 13 May 1913, a month ahead of schedule. The smelter was unique for its time, being the first in Canada to be completely equipped with basic convertors instead of the traditional acid convertors. These were coupled with a new sintering process. At the beginning, the smelter produced a Bessemer matte of about 41% nickel, 41% copper, 17% sulphur, and less than 1% iron. After being poured into moulds and solidified, the matte was crushed, barrelled, and shipped to the United Kingdom.

In addition to the smelter itself there was also a roastyard located about a mile from the smelter. At the roastyard the ore was piled on about two feet of cordwood in large roastheaps of 32 by 100 feet, each containing approximately 2,500 tons of ore. Fine ore was then laid in layers on the top. When the cordwood was lit the sulphur in the ore was ignited and the heaps would burn for two or three months, oxidizing about one-quarter of the sulphur and iron content. The company owned about 10 miles of railway line in connection with the roastyard and smelter as well as ore cars, flat cars, slag cars, locomotives and two switching engines.



Coniston smelter, nearly finished, 1912.

Mond's decision to establish its operations in Coniston marked a dramatic turning point in the history of the community. Thousands of dollars were spent by the company in the construction of physical plant and development of the townsite. In order to provide for this expansion and to underwrite new mine purchases, the Mond Nickel Company doubled its capitalization in 1914. The

first world war created an immense demand for nickel and brought it to a position of primary importance in world markets. After the war there was a slump which brought difficult times and a need for readjustment. During the 1920s, however, the position of nickel improved greatly and strong industrial markets were secured, including those in the manufacture of automobiles, mining machinery and household appliances.

The 1920s in Coniston saw an expansion of housing. It was generally agreed that agriculture was not feasible because of the fumes from the huge roastheaps and the 143-foot smelter stack. The Boudreau farm in the west-central part of the town (now the Caruso-Allan Street area) was subdivided. In that subdivision new immigrants from Italy made their homes. A second subdivision formerly the Dubreuil farm centred about the area now occupied by Edward and William streets and was taken over largely by families of Polish and Ukrainian origin. The houses in these new immigrant communities were smaller and of lower quality than the company management homes. Nevertheless, reasonable private housing was still being built at a time when the average labourer's wage was only 45 cents an hour. By 1933, 343 men worked at the smelter but there were only 116 company houses. Boarding houses were a typical form of accommodation for the others. When times were booming the three or four such boarding houses were inadequate and the notorious system of "hot bedding" was used. Men slept in shifts at their respective boarding houses and their beds were never cold!

In 1925, after a number of additions had been made to the original school, the separate school board decided to erect a new school on nine acres of land at the northern end of Edward Street. With the help of grants from the province and from the Mond Nickel Company, a ten-room school was built at a cost of \$12,000. The old school was used as a high school until the end of the second world war.



Roastyard, c. 1920.

By 1928 Coniston had reached a period of stability under Mond's direction but changes were imminent. A merger of the Mond Nickel Company with the International Nickel Company of Canada was in the offing. After considerable discussion, the two companies failed to agree on the separate development of the rich Frood ore body which, they discovered, lay across their properties. To prevent costly duplication and competition they agreed to merge, with Mond becoming a subsidiary and Inco acquiring the Mond properties. From a business point of view the merger made excellent sense. The two companies had controlled the world's nickel market for more than 25 years as friendly rivals. Now, the new company was in complete charge and would be producing about 90% of the world's consumption of nickel.

When he put his pen to the merger document, Lord Melchett (Sir Ludwig Mond's eldest son, Alfred) was thought by many to be signing away the future of Coniston. Not only the merger, but changes in the smelter, geared to an integrated Inco operation, made the residents uneasy. Mond Nickel had planned to use Coniston as the company's Canadian headquarters, but now Copper Cliff became the Canadian headquarters for the Inco operations. Coniston was treated not as a subsidiary which could make money, which had been the old Mond approach, but as a company town whose growth must be restricted. Only management and maintenance costs were to be absorbed by the company.

Meanwhile, improvements were made in the refinery at Clydach, allowing the substitution of Inco material from Port Colborne; this contained more nickel and less copper than Mond's Bessemer matte from Coniston. Despite the fears of many town residents, however, the Coniston smelter continued to operate under Inco in much the same way as it had done under Mond. The copper-nickel was sent by rail to Copper Cliff instead of to Wales. In 1929 the original sintering plant was replaced by a new one and the number of sinter machines was increased. More fine ore was handled and the quality of sinter for the blast furnaces was improved.

In the following year the impact of the Great Depression reached Coniston. The company's first move was to reduce production, resulting in a large layoff. In 1930 the smelter was closed down. Part of the work force was offered two to three days work a week at the Copper Cliff smelter, which was operating on a reduced basis. Also in 1930, another shock was in store for the people of Coniston. The Wahnapiatae Power Company was sold to the Ontario Hydro Commission and the sale increased the fears of the townsfolk about their future.

To most, it was clear that the benevolent and growth-oriented Mond Nickel era was over. A new era of paternal neglect appeared to have set in. However, while suspicions about Coniston's future lingered, other positive events were taking place. By 1933 nickel production had surpassed the 1929 figures by 25 million pounds. Employment began to increase at the Coniston smelter. Although many workers were still on relief, conditions were improving and a new optimism was developing.

Something was needed, however, to consolidate Coniston as an identifiable community. A petition was circulated calling for its incorporation as a town.

The request was supported by the township council of Neelon-Garson and approved by the Ontario Municipal Board. The town of Coniston was incorporated under the Municipal Act, effective 1 Jan. 1934.

Edgar Taylor Austin, superintendent of the smelter and the original surveyor of the townsite, was elected mayor by acclamation. The six nominees to the town council were also acclaimed. Four were salaried supervisors for Inco, one was a smelter worker, and the other was the town druggist. The mayor was to be paid \$100 a year and the councillors \$75 each. From 1934 to 1944 the composition of the council and its committees varied little. The schedule for meetings tended to be erratic until 1947 when regular meetings were instituted. At a very early point in the history of the town a volunteer fire brigade was formed with the support of the community and the company. The town was policed by the Copper Cliff police force and 75% of the salaries were paid by Inco.

In 1934 the total assessment for Coniston was \$844,792. A budget of \$35,000 was set for the year — \$12,550 for the general affairs of the town; \$8,800 for the public school board; and \$13,650 for the separate school board. Although not legally taxable, Inco was the only major property owner and made a proportionate contribution to municipal finance. As a result, the property taxes paid by home and business owners in Coniston were minimal. As the town budget increased in the years that followed, the assessment of the smelter, with the consent of the company, continued to increase. The result was the maintenance of a low tax rate for the residents of the town.

During the 1930s the International Nickel Company opened one of the former executive homes at 44 First Avenue, as a community hall. The company paid the salary of the caretaker and maintained the building. Many of the social functions of the community were held there, as were meetings of church groups, Boy Scouts, Girl Guides, Wolf Cubs, Brownies, Y.M.C.A. and C.G.I.T. A small gymnasium was built at the back providing for badminton, basketball, and volleyball. The hall was also used as a polling station in municipal, provincial and federal elections. Medical clinics also used the same facilities.

Another former executive home, at 45 First Avenue, was later enlarged for use as a doctor's residence and clinic. The addition consisted of a waiting-room and examination rooms for patients. The resident doctor was a member of the Inco medical centre staff. This arrangement continued until the late 1960s when the company system was phased out.

Until about 1942 access to the smelter was by rail or footpath. When the smelter was first built supplies were brought in by rail and employees either walked over the numerous paths or travelled by the company's railway car from the CPR station near Government Road and Edward Avenue. No thought had been given to the construction of a road. At lunch-time, members of the staff who preferred to go home for their noon meal would board the railway car in front of the warehouse and return by the same means. By today's standards it was an unusual arrangement. At a later date a road was completed and a bus service, provided by a Sudbury firm, replaced the railway car.



Coniston Band, c. 1939.

The second world war brought a tremendous increase in nickel production. Other developments were significant as well. Between 1942 and 1944 there were changes in human relations at the smelter. The labour force became unionized, and Local 598, of the International Union of Mine, Mill and Smelter Workers Union was certified by the provincial authorities on 4 Feb. 1944. A collective agreement was soon negotiated.

One indirect result of the union presence was that hourly rated workers in the Coniston smelter felt sufficiently secure to run for municipal office. In 1944, nine candidates sought six seats on the town council. The town experienced the first real election for public office. Three new councillors were elected: John Carey, William Coppo, and Mike Solski, the present author. In 1946 Edgar Austin retired as superintendent of the smelter and also as mayor of the town. On 22 Nov. the assistant superintendent of the smelter, Roy L. Snitch, was nominated as mayor. He was unopposed.

In 1946 Inco decided to use the old acid plant situated north of the smelter as a pilot plant to experiment with the processing of nickel ores from New Caledonia and Venezuela. Towards the end of its first run, a switch was made to experiment with pyrrhotite containing a low amount of nickel. The feed was obtained from the Copper Cliff concentrator by selective flotation, and first results were promising. After a shutdown of the plant for renovations, it was reopened in 1947 with a longer run planned. Results were again encouraging. The pilot plant continued in operation for about six years and the end result of all the experimental work was the construction of the Iron Ore Recovery Plant at Copper Cliff, which housed the new metallurgical process developed in Coniston.

The early 1950s were marked by the emergence of a self-reliant community. The municipal outlook was directed primarily to the welfare of the town and its people. During the late 1930s and the war years, Coniston had suffered from the lack of a sewer system and treatment plant. Poor roads and flood control were serious problems, especially in the creek area. Work on sanitary sewers, a pumping station, and a sludge treatment plant was completed in 1958.

After the second world war, urban sprawl became a problem and the need for community planning was obvious. Municipal planning was begun in the Sudbury area with the formation of the McKim, Neelon, and Garson planning board in 1947. Coniston was never really part of that planning board which, however, set the tone for municipal planning in the Sudbury Basin.

The construction of a new smelter stack in 1954 provided cleaner air for Coniston and improved working conditions in the plant. It was 400 feet in height, and replaced two smaller stacks. The result was improved draft for the smelter exhausts and the effluent gases were better contained and more widely dispersed than previously. In 1959 a new 375-foot concrete stack was completed for the sintering plant, replacing a smaller and less efficient brick structure.

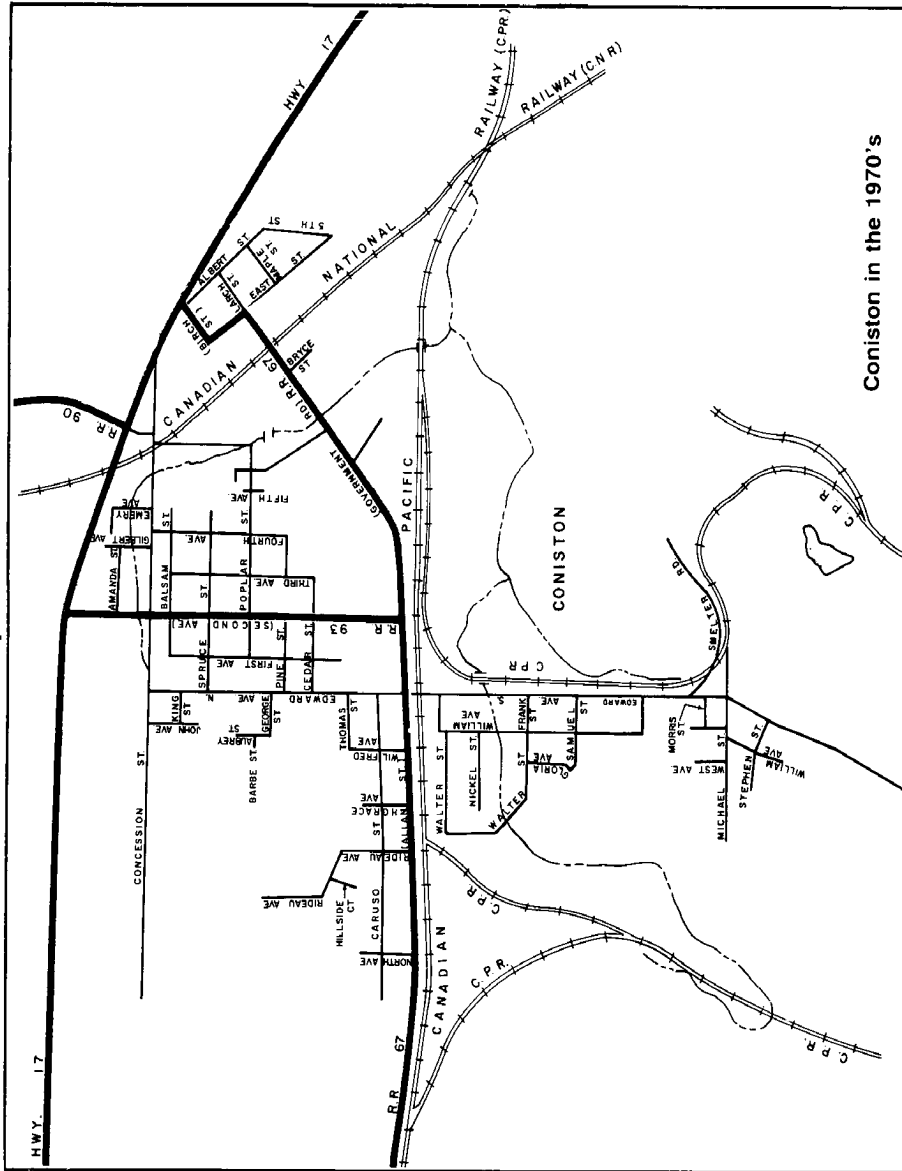
The town of Coniston had come a long way by the mid-1960s. From the time of its incorporation, the town's population was fairly constant; in 1965 there were 2,608 residents. Assessment had increased to \$1,510,232. The working population in the smelter was about 350, down from its high point of more than 800. But the town never really attracted any overflow from Sudbury although 105,000 people were living in the Basin area within a 25-mile radius of the city. Taxes were fairly low and the debenture debt of \$76.32 per capita was the second lowest of all the towns in the Sudbury Basin.

Canada's centennial year in 1967 was a time of intense activity across the country. Coniston's commemorative project consisted of a public park at the junction of Government road and Second Avenue. The park contained trees, shrubs, flower beds, a newly-designed cenotaph, a fountain, and a plaque in honour of Canada's 100th birthday. Inco was of great assistance. Besides supplying labour, equipment and technical assistance, the company further assisted by giving land for the park and new tennis courts, and building the fountain. In 1970 the town council approved the construction of a community centre, debenturing \$280,000 for that purpose. The arena was opened on 8 Feb. 1971, and a public library was built in the same year.

Coniston received a double blow in 1972. On 28 January Inco announced the phasing out of the Coniston smelter operation which was completely shut down three months later on 16 April. The reasons given for the closure were the provincial environmental restrictions, coupled with the general inefficiency of the outdated smelter. The smelter at Copper Cliff, with its reverbatory furnaces and better material-handling systems, could operate far more efficiently. With the smelter shutdown Coniston lost its largest source of tax assessment as Inco had been paying about 85 cents of each municipal tax dollar. Only a small number of employees were laid off. Many accepted early retirement and the remainder

were transferred to various plants at Copper Cliff.

Map 2



The second blow occurred when Coniston had its municipal status greatly altered. In 1969 J. A. Kennedy, chairman of the Ontario Municipal Board, was appointed as a one-man commission to study the future structure and organization of municipalities in the Sudbury district. As a result of this study and subsequent decisions, the town of Coniston became part of the new town of Nickel Centre on 1 Jan. 1973.

Following the closure of its operations, Inco gave the community hall to the town and decided to sell all its company-owned houses to employees. The only exception was the one occupied by the former smelter superintendent. The houses and lots were appraised by three assessors. The lowest assessments were accepted, further reduced, and the properties offered at that price to the employees occupying them. If the occupant did not wish to buy it, the house was offered to other employees. When there were no buyers among the employees the property was then offered to non-employees. Vacant lots were sold in the same way. In many instances, the new owners sold their property to people from outside the town. The "family" atmosphere of the community began to wane. It did not disappear completely because there remained a sufficient number of long-time residents to preserve the warmth and friendliness which had been so noticeably a characteristic of Coniston.

After the demolition of the smelter in 1976, Inco established an industrial park on the site of the smelter. The company tried to induce new industries to locate there with some small response. Legerlite Insulation moved to the former changehouse. Drummond-McCall took over the shops. Another group moved into the old warehouse, using it as a depot for building supplies. Inco is still trying to attract other industries to the industrial park.

The rise and fall of Coniston is not unique. It is a part of the age-old human quest for food and resources. People have always had to go where these are to be found. When they fail they must move on. Over the last few centuries the commercial, scientific, agricultural, and industrial revolutions have added a degree of stability to society reducing the need for constant nomadic wanderings. But the underlying problem remains, exacerbated by the technological changes of the late twentieth century. Coniston did not suffer the same fate as Victoria Mines and Mond. It is now part of the new town of Nickel Centre and remains a place of human habitation with an historic past. For the people who live there it is still and will always be known as "Coniston."

SELECTED BIBLIOGRAPHY

COPPER CLIFF

A. Primary Sources

1. **Manuscript sources**
Inco Archives, Sudbury. Diaries of John D. Evans, January 1886 — December 1893.
Inco Archives, Sudbury. Correspondence (letter books), 1889-1902.
Inco Archives, Sudbury. Recollections of Kate (Mrs. A. H.) Hibbard, daughter of Lewis H. Ashmun. Typescript. Similar to article published in *Inco Triangle*, February 1951, p. 2.
Town of Copper Cliff. Assessment records, 1903-06.
Town of Copper Cliff. Bylaws, 1902-06.
Town of Copper Cliff. Debenture register.
Town of Copper Cliff. Town Council minutes, 1902-12.

2. **Published Government Documents — Federal**
Barlow Alfred Ernest. "Report of the origin, geological relations and composition of the nickel and copper deposits of the Sudbury mining district," *Canadian Geological Survey Report*, 1904. Reprinted in 1907. *Canadian Geological Survey Report*, No. 961, 1907.
Bell, Robert. "Report on the Sudbury mining district," Geological Survey of Canada, *Report for 1880-1890*, Part F, 1891.
Canada, *Census Reports*, 1891, 1901.
Canada. Geological Survey. *Annual Reports*, 1853-56, 1886-1912.
Coleman, A.P. *The nickel industry with special reference to the Sudbury region, Ontario*. Ottawa: Government Printing Bureau, 1913.
Queen's University. The Institute of Local Government. *Single enterprise communities in Canada. A Report to the Central Mortgage and Housing Corporation*, 1953.

3. **Published Government Documents — Provincial**
Ontario. Bureau of Mines. *Reports of the Bureau of Mines*, 1891-1912.
Ontario. Bureau of Mines. "The Sudbury nickel field," *Report of the Bureau of Mines*, XIV, Part III (1905).
Ontario. Department of Agriculture. Bureau of Industries. *Statistics of Ontario*, 1889-1916.
Ontario. Inspector of Mines. *First Annual Report*, 1890. Sessional Paper No. 68, 1891.
Ontario. Provincial Board of Health. *Annual Report*, 1884-1906.
Ontario. Royal Commission: The mineral resources of Ontario and measures for their development. *Report*, 1890.
Ontario. Royal Ontario Nickel Commission. *Report with appendix*.
Toronto: A.T. Wilgress, 1917.

4. **Newspapers and Journals**
Inco Triangle, Copper Cliff, 1946-80.
Sudbury Journal, 1891-1918.
Toronto Globe — used selectively.

B. Secondary Sources

5. **Articles**

Beach, Noel. "Sudbury et l'industrie du nickel (1905-1925)," *Documents Historiques de la Société Historique du Nouvel Ontario*, No. 68 (1978), 33-57.

Belanger, Roger. "Region Agricole Sudbury-Nipissing," *Documents Historiques de la Société Historique du Nouvel Ontario*, No. 18 (1949), 1-37.

Clarke, S.D. "The position of the french speaking population in the northern industrial community," in Richard J. Ossenberg ed., *Canadian society: pluralism, change and conflict*, Calgary: University of Calgary Press, 1971.

Eston, H.L. "John Dunlap Evans, O.L.S.," *Ontario Land Surveyor* (1931), 117-18.

Evans, J.W. "The Early history of mining in the Sudbury district," *Journal of the Canadian Mining Institute*, VII (1905), 495-99.

Gauthier, Henri. "Historique de la région minière de Sudbury," *Documents Historiques de la Société Historique du Nouvel Ontario*, No. 3 (1943), 27-48.

Héroux, Louis. "Aperçu sur les origines de Sudbury, 1883-1904," *Documents Historiques de la Société Historiques du Nouvel Ontario*, No. 2 (1943), 6-23.

Hilyard, H.A. "The nickel region of Canada," *The Canadian Magazine*, I (1893), 305-13.

Rickard, T.A. "The nickel of Sudbury," *Canadian Mining Journal* (December 1942), 785-92.

Ryder, N.B. "The interpretation of origin statistics," *Canadian Journal of Economics and Political Science*, XXI (1955), 446-79.

Stelter, Gilbert A. "Community development in Toronto's commercial empire: The industrial towns of the nickel belt, 1883-1931," *Laurentian University Review*, VI, No. 3 (June 1974), 3-51.

Stelter, Gilbert A. "The origins of a company town: Sudbury in the nineteenth century," *Laurentian University Review*, III, No. 3 (February 1971), 3-37.
6. **Books**

Bell, B.T.A., comp. *The Canadian mining manual and companies directory*, 1894. Ottawa: Victoria Chalmers, 1894.

Church of the Epiphany. Rev. P.F. Bull, Rector. *The Church of England in the city and district of Sudbury, Ontario*. (no place of publication indicated): Porter Publishing Co., 1936.

Dorian, Charles. *The first 75 years: A headline history of Sudbury, Canada*. Ilfracombe, Devon: Arthur H. Stockwell, Ltd., 1958.

LeBourdais, D.M. *Sudbury Basin: The story of nickel*. Toronto: Ryerson Press, 1953.

Lucas, Rex A. *Minetown, milltown, railtown: life in Canadian communities of single industry*. Toronto: University of Toronto Press, 1971.

Marunchak, M.H. *The Ukrainian Canadians: a history*. Winnipeg: Ukrainian Free Academy of Sciences, 1970.

Robinson, Ira M. *New industrial towns on Canada's resource frontier*. Chicago: University of Chicago Press, 1962.

Samulski, Jozef. *Pamiętnik emigranta polskiego w Kanadzie*. Wroctaw (Poland), Polska: Akademia Nauk, 1978. (Translation prepared by Dr. H. Radecki).

Thompson, John F. and Norman Beasley. *For the years to come*. Toronto: Longman's Green and Company, 1960.
7. **Theses**

Allen, Martha Isobel Gerrard. "A survey of Finnish cultural, economic and political development in the Sudbury district of Ontario" M.A. Thesis, University of Western Ontario, 1954.

Baine, R.P. "The settlement of the Sudbury Basin," M.A. Thesis, University of Toronto, 1952.

Bedell, Frank G. "The Sudbury district" A dissertation presented to the Faculty of the School of Engineering, University of Kansas (Mining Engineering), June 1906.

Brandt, Gail Cuthbert. "J'y suis, J'y reste: The French Canadians of Sudbury, 1883-1913. Ph.D. Thesis, York University, 1976.

Goltz, Eileen Alice. "Genesis and growth of the company town: Copper Cliff, 1886-1920" M.A. Thesis, Laurentian University, 1983.

8. **Unpublished Papers**

"The International Nickel Company of Canada Limited. Research Library. The History of Nickel Extraction from Sudbury Ores." Part I, 1846-1920; Part II, 1921-56. Copper Cliff, Ontario, 1956.

Radecki, Henry. "Polish immigrants in Sudbury, Ontario." Paper presented at the International Conference on the History of Polish Immigration to North America, Poles in America, held at St. Michael's College, University of Toronto, 22-25 October, 1980.

Saarinen, Oiva. "The pattern and impact of Finnish settlement in Canada with special reference to the Sudbury district." Prepared for the Finnish Canadian Centennial Committee (Sudbury), 1967.

VICTORIA MINES AND MOND

1. **Printed Sources**

Ontario. Bureau of Mines. *Annual Report* 1901, 1909, 1911.

Royal Ontario Nickel Commission. Report with appendix.

Toronto: A.T. Willgress, 1917.

"Interviewed Dr. Mond!" *Sudbury Journal*, 8, Nov. 1900.

Sudbury Star, 8 May, 1915.

Wilson, A.W.G. "The Mond Nickel Company's Smelting Plants at Victoria Mines and Coniston, Ontario," *Canadian Mining Journal*, Oct. 15, 1914.

2. **Interviews**

Mr. Norm Anderson, Sudbury, Ontario. Recollections of Mond.

J.A. (Sandy) Butler, Whitefish, Ontario. Reminiscences of Mond and Victoria Mine townsite.

John Hill (deceased), Sudbury, Ontario. Recollections of Mond and Victoria Mine townsite.

Mr. Vaino Manninen (deceased), Whitefish, Ontario. Recollections of Mond.

Olavi Mattinen, Naughton, Ontario. Reminiscences of Mond.

Mrs. Aino Mumford, Sudbury, Ontario. Recollections of Mond.

Mrs. Tyne Tolmonen, Whitefish, Ontario. Recollections of Mond.

CONISTON

1. **Printed Sources**

"Coniston", Vertical file. Nickel Centre Coniston Branch Public Library.

Coniston Continuation school. Teachers and grade ten students. *Brief history of Coniston, 1940-41.*

Dorian, Charles. *The first seventy-five years: A headline history of Sudbury, Canada. Ilfracombe, Devon: Arthur Stockwell Ltd. 1958*

Dorian Collection, Sudbury Public Library.

Frazer, B. and R. DeStefano. "The Depression and some of its economic and social effects on the City of Sudbury from 1929 to 1932." Paper. University of Toronto, 1964. (available S.P.L.)

Giroux, Cecile (separate school principal). Paper. *Brief history of Coniston, 1930's.*

LeBourdais, D.M. *Sudbury Basin: The story of nickel.* Toronto: Ryerson Press, 1953.

Stelter, Gilbert. "The Origins of a company town: Sudbury in the nineteenth century," *Laurentian University Review*, III, 3 (1971), 3-37

Thompson, John F. and Norman Beasley. *For The years to come: A story of the International Nickel Company of Canada Ltd.* Toronto: Longmans Green and Company, 1960

2. **Interviews**

Interviews with older residents

Index

- Accidents.....vi, 41
Agriculture.....45, 46
Akron, Ohio.....1
Alcohol.....v, 10, 40
Anderson, Norm.....23
Anderson, Sam.....38, 41
Anglicans.....13-14
Anglo-Saxons (British).....v, 3, 4, 7, 11,
12-15, 19, 20, 33
Armstrong, Ed.....46n
Ashmun, Lewis.....1, 2, 4
Aubry, W.....48
Austin, Edgar Taylor.....46, 52, 53
Austrians.....15
Automobiles.....38
- Baby, John.....41
Ballantyne, Mr.....33
Baptists.....13-14
Barton, Mr. & Mrs. Harley.....39, 40
Bay City, Michigan.....3
Black, Mrs.....39
Blake, Hector "Toe".....32
Blezard Township.....12, 13
Bolger, Francis.....1
Boudreau Farm.....50
Bowman, Isaac L.....1
British, see *Anglo-Saxons*
British Columbia.....vi, 1
Broder Township.....12, 13
Bruce Mines.....25, 26
"Bucket Line".....29, 38
Butler, J.A. "Sandy".....23, 30, 31, 32
Butler, John.....45
Butler, Michael.....29
Butler, Peter.....45
- California.....1
Cambrian Shield.....45
Canadian Copper Company.....v, 1, 2, 4,
6, 8, 11, 12, 18, 19, 20, 23, 24, 27
Carbonyl Process.....23
Carey, John.....53
Chinese.....14
Chmara, Dan.....48
Christie, Mr.....39
Churches.....v
 Coniston.....48
 Copper Cliff.....7, 8, 13-14
 Mond.....39
Cleveland, Ohio.....8, 9, 12
Club Houses,
 Coniston.....46
 Copper Cliff.....7
 Mond.....33, 40
 Victoria Mines.....22
Clydach,
 see *Wales*
- Cobalt.....1
Coniston.....v, vi, 26, 29, 32,
37, 41, 44-56
 Assessment.....52, 54
 Centennial celebrations.....54
 Council.....52, 53
 East Coniston.....45
 Incorporated.....51, 52
 Industrial Park.....56
 Name.....45
 and Nickel Centre.....56
 Planned.....46
 Population.....45, 54
 Services.....46, 48, 52-54
 Settlement.....45
 Streets.....48, 50, 52
 Survey.....45, 46
See also *Churches, Coniston,*
Schools, Coniston
Social activities, Coniston,
Worker, Coniston
Coniston Woodworks Lumber Mill.....45
Copper Cliff.....v, vi, 1-21, 51, 53, 54
 Businesses.....10-11
 Company Control.....18, 19, 20
 Incorporated.....18
 Industrial activity.....1
 Industrial village.....6
 Police.....19
 Population.....4, 7, 11, 12-15
 Services.....18, 19
 Settlement.....3, 4, 6, 7, 10, 11
 Streets.....3, 4, 5, 8, 10, 11, 19
 Surveys.....1, 4
See also *Churches, Copper Cliff*
Schools, Copper Cliff
Social activities, Copper Cliff
Worker, Copper Cliff
Coppo William.....53
Coreless, C.V.....46
Crean Hill.....39, 40, 41
- Dafoe, Dr. Allen Roy.....39
Denison Township.....26, 33
Detroit.....41
Dominion Mineral Company.....24
Dominion Nickel-Copper Company.....24
Donnelly, John.....41
Drummond McCall.....56
Drury Nickel Company.....24
- Electricity
 see *Hydro Electric Power*
Ethel (Mond) Lake.....27, 29, 33, 41
Evans, John D.....1, 2, 3, 6, 7, 8, 9, 10
- Fairbank Creek and Lake.....27, 33
Finns.....2, 11, 12, 13, 14,
15, 20, 33, 36, 40, 41
- Flu Epidemic.....39
French-Canadians.....2, 11, 13, 14, 15, 20, 33
Frenchy, John.....41
Frood.....36

- Gamey, R.R., Company.....24
Garson.....29, 32, 33
Gauthier, Emerier.....46n
Germans.....15
Great Depression.....51
Great Lakes Copper Company.....24
Greek Orthodox.....13, 14
- H.H. Vivian Company.....24
Hamari, Vaino (Eino) and Jallu.....41
Hamilton Nickel Company.....24
Hastings County.....1
Hill, John.....23, 33, 34, 35, 38
Horses (transportation).....1, 29, 38
Hydro Electric Power
 High Falls.....19
 Lorne Falls.....27, 37
 Lorne Power Company.....37
 Nairn Falls.....27, 37
 Ontario Hydro Commission.....51
 Steam Power.....27
 Wahnapiatae Power Company...37, 46, 51
- Ingram, Miss.....39
International Nickel Company.....16, 18,
 20, 23, 24, 29, 32, 51, 52, 53, 54, 56
International Union of Mine,
 Mill and Smelter Workers.....vi, 53
Iron Ore Recovery Plant.....53
Italians.....11, 13, 14, 15, 20, 33, 50
- Jews.....13, 14
Johnson, T.....45, 46
Johnson, Thomas.....3, 4
Juneau, Mr.....33
- Kat, Steve.....41
Kennedy, J.A.....56
Kaula, Maria and Matt.....39
- LaForest, Joseph.....46n
Laine, (Francis) Fred.....36, 39
Lake Superior Power Company.....24
Langer, Karl.....23
Lebel, Guillaume, s.j.....48
Legerlite Insulation Company.....56
Leonard, Albert.....33, 36
Levack.....33
Lincoln.....45
Lumbering.....45
Lutherans.....13, 14
- McArthur, James.....6, 8
McConnell, Emma.....26
McConnell, Rinaldo.....26
McIntyre, Alexander.....26
McKim Township.....1, 2, 7, 11, 12, 13,
 14, 15, 18
- McKim, Neelon and Garson
 Planning Board.....54
McNaughton, Lola.....39
Manninen, Matti.....33, 36, 38
Manninen, Vaino.....23, 33, 36
- Matte.....6, 8, 25, 43
 Bessemer.....8, 27, 49, 51
 Copper-Nickel.....8, 51
Mattinen, Olavi.....23, 36
Melchett, Lord,
 see Sir Alfred Mond
- Methodists.....13, 14
Michaud, Antoine.....48
Milwaukee.....27
- Minerals
 Copper...1, 4, 8, 9, 23, 24, 26, 27, 29, 51
 Gold.....1
 Iron.....25, 49
 Nickel.....1, 4, 8, 9, 23, 24, 26, 27, 29,
 49, 50, 51, 53
- Mines
 Alexo.....26, 27
 Bleazard.....24
 Bruce Mines.....25, 26, 27, 43
 Clarabelle.....3
 Copper Cliff.....2, 3, 4, 6, 11, 20, 24
 Crean Hill.....24
 Creighton.....24, 29
 Cryderman.....24
 Denison.....26
 Evans.....2, 4, 6, 11
 Frood.....24, 51
 Frood Extension.....24, 46
 Garson.....24, 27, 43, 46
 Howland.....26, 43
 Kirkwood.....24, 43
 Lake Hill.....24
 Levack.....24, 43, 46
 Little Stobie.....24, 43
 McConnell.....26
 Mount Nickel.....26, 43
 Number One.....11
 Number Two.....11, 24
 North Star.....24, 43
 Stobie.....6
 Vermilion.....24
 Victoria Mine...23, 24, 26, 27, 32, 41, 43
 Worthington.....24, 27, 43
- Mond.....v, 23-44
 Description.....33, 37
 Gardens.....36
 Livestock.....36
 Saunas.....36
 Services.....37, 38, 39
 Streets.....33
- See also *Churches, Mond*
 Schools, Mond
 Social activities, Mond
 Worker, Mond
- Mond, Sir Alfred.....46, 51
Mond, Ludwig.....23, 26, 51
Mond Nickel Company...v, 23, 24, 27, 32,
 33, 37, 39, 43, 46, 49, 50, 51
Montreal.....46
Muckers.....33, 41
Mumford, Mrs. Aino.....23
Mumford, Earl.....23
Mumford, W.J.....24, 36, 37

Neelon Township.....	45
Neelon-Garson.....	48, 52, 54
New Caledonia.....	53
New Jersey.....	4
New Ontario.....	40
New York.....	18
Nickel Centre.....	45, 56
Norquay Brothers.....	48
O'Brien, Dennis.....	45, 46
Oliver, D'Arcy Family.....	48
<i>Ontario Mining Journal</i>	41
Ontario Municipal Board.....	52, 56
Orford Copper Company.....	4, 8, 11, 18, 24
Ottawa.....	45
Pelletier, T.....	48
Peters, Dr. Edward Dyer, Jr.....	4, 12
Poles.....	11, 12, 13, 14, 15, 20, 33, 50
Port Colborne.....	51
Presbyterians.....	13, 14
Quarries	
Coniston.....	24
Dill.....	24
Quesnel, W.J.....	46n
Railways.....	3, 4, 29, 32, 38, 51
Algoma Eastern.....	23, 38
Canadian Northern.....	32, 45
Canadian Pacific.....	1, 27, 32, 33, 45, 46
Romford-Toronto.....	45
Sault Branch.....	1, 2, 32, 38
Manitoulin and North Shore.....	38
Mond Railway.....	38, 49, 52
Ranger, Henry.....	26
Refining.....	24, 43
Riopelle, Joseph.....	26
Ritchie, Samuel J.....	1, 4, 8, 10
Roads.....	1, 2, 3, 4, 7, 32, 38, 39, 45, 52
Roastyards	
Coniston.....	49
Copper Cliff.....	4, 8, 18, 29
Fuel.....	29, 45
Method.....	29, 49
Mond.....	24, 29, 42
O'Donnell.....	29
Rochon, T.....	46n
Roman Catholics.....	13, 14
Royal Ontario Nickel	
Commission.....	24, 32, 43
Rozumney, Mr.....	33
Russians.....	15
St. Clair Construction	
Company.....	45
Santala, Douglas N.....	23
Scandinavians.....	14, 15
Schools.....	v
Coniston.....	46, 48, 50, 52
Copper Cliff.....	7-8, 11
Mond.....	33
Victoria Mines.....	32, 38, 39
Settlements	
Crow's Nest.....	11, 15, 20
East Smelter.....	6, 8, 11, 12, 13, 15, 20
Evans Mine.....	7, 11, 15, 20
Little Italy.....	11
Old Smelter.....	6
Orford.....	11, 15, 20
Shantytown.....	3, 4, 7, 8, 9, 11, 12, 13, 15, 20
Smelter City.....	6
Sillanpaa, Kalle.....	36, 37
Sims, Robert.....	41
Sintering.....	49, 51, 54
Skill Lake.....	33
Smelters.....	36
Coniston.....	26, 29, 32, 49, 51, 52, 53, 54
Copper Cliff.....	4, 6, 11, 50
East.....	8, 11, 20
Ontario Smelting Works.....	11, 18
Victoria Mines.....	24, 27, 29, 32
West.....	11, 18
Snider Township.....	1, 4, 7, 11, 14, 15
Snitch, Roy C.....	53
Social Activities.....	v
Coniston.....	52, 54
Copper Cliff.....	11
Mond.....	33, 40, 41
Solski, Mike.....	53
Squatters.....	v
Steel armour plate.....	8
Stores.....	v, 10-11, 33, 36, 48
Sudbury.....	1, 2, 3, 4, 7, 6, 9, 12, 13, 14, 23, 24, 32, 33, 36, 38, 39, 41, 45, 52
Sudbury Area.....	9, 24, 26, 29, 43, 45, 54, 56
<i>Sudbury Journal</i>	10, 18, 23
<i>Sudbury Star</i>	27, 33, 38, 40, 41
Sulphur.....	18, 29, 49, 54
Temiskaming District.....	26
Thomas, Joan.....	39
Thompson, Wesley and William.....	41
Tolmonen, Mrs. Tynne.....	23, 39
Tramway.....	29, 38
Trenton.....	10
Ukrainians.....	11, 12, 13, 14, 15, 20, 33, 40, 50
United Kingdom.....	49
United States Navy.....	8
Venezuela.....	53
Victoria Mines.....	v, vi, 23-44, 46, 48
End of.....	32, 41
Jail.....	39
Livery Stable.....	38
Population.....	32
See also <i>Schools, Victoria Mines Workers, Victoria Mines</i>	
Wahnapiatae River.....	46
Wales.....	23, 27, 29, 43, 46, 51
Walker, Mr.....	41
Waters Township.....	14
Whitefish.....	38, 39

Workers	
Coniston	
Great Depression.....	51
Housing.....	46, 50
Public Office.....	53
Travel to work.....	52
Union.....	53
Wages.....	50
Copper Cliff.....	2
Boarding Houses.....	3, 7, 11
Conditions.....	2
Housing.....	3, 7, 8
Lay-offs.....	9-10
Mond.....	24
Boarding Houses.....	33, 36
Wages.....	36
Victoria Mines.....	27
World War I.....	50
World War II.....	53
Worthington.....	32, 36, 39, 41
Yukon.....	vi, 1

ACKNOWLEDGEMENTS

Acknowledgement and thanks are extended to the following for the use of illustrative material in this volume:

Cover and Introduction

Erola, Judy: iv

Inco Limited, Ontario Division: vii

Nickel Centre Coniston Branch Public Library: Cover photo

Copper Cliff

Cressey, Art: 19

Inco Limited, Ontario Division: 2, 3, 5, 9, 10, 12

Multicultural History Society/Public Archives of Ontario: 13

Regional Municipality of Sudbury: 21

Mond Nickel Company and the Communities of Victoria Mines and Mond

Contributors: Butler, J.A. (Sandy); Hill, John; Mattinen, Olavi; Tolmonen, Tynne.

Nickel Centre Coniston Branch Public Library: 22

Public Archives of Canada #PA-37576: 28

Coniston

Nickel Centre Coniston Branch Public Library: 44, 47, 48, 49, 50, 53

Regional Municipality of Sudbury: 55