INCO TRIANGLE

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Prelude to Snow

(Story on Page 16)

INCO TRIANGLE

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Don M. Dunbar, Editor.
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THE

Importance of Nickel

IN

Our Everyday Life

(Winner of one of the four $2,000 university scholarships offered by Inco in an essay contest to commemorate the 200th anniversary of the discovery of nickel by the Swedish scientist Cronstedt in 1751.)

By Mary Lou Simcox

After fifty years of scientific research in the development of uses of nickel, it has become very essential in our everyday life, so much so that we could not eliminate it from our modern methods of living. Nickel is actually in our presence from the time we arise in the morning until we retire at night, serving us directly or indirectly. It is also playing such a major role in our war program that a nation with superiority in the production of this metal has a great advantage.

Although nickel was used in ancient times in natural alloys, it was unknown as an element until 1751, when a Swede named Cronstedt discovered that "Kupfer Nickel," so-called in ancient days, contained a new element which he named "Nickel." It was not until thirty years later that pure nickel was produced. There was little demand for this metal fifty years ago except for nickel plating, coins, and nickel-silver used as a base for silver-plated ware. Since then, largely through scientific research, countless uses of nickel have been discovered.

This metal, which has become so important, has a white metallic colour, comparable to silver, which it is able to give to the alloys produced with it. Nickel is strong, tough, acid-resisting and able to withstand extreme temperatures. Today we find nickel alloyed with copper, bronze, brass, zinc, iron and chromium.

Monel, which is two-thirds nickel and one-third copper, is unsurpassed for use in roofing, window frames, doors, gutters, and drain pipes due to its resistance to corrosion when exposed to the weather. In North America, the most industrialized part of the world, roofing replacements run high as the rain, snow and fog combine with the smoke of the city to form acid, which soon destroys most types of roofs. Monel sheeting, which is easily fabricated, now provides a life-time material by completely resisting atmospheric conditions. This type of roofing costs little more than the others but it assures permanence and results in a saving over years of service.

To add to the attractiveness of cities, building fronts are being modernized with nickel-silver, stainless steel and chromium. These metals are used for their neatness in appearance and durability. Ornamental plaques of nickel alloy, with names and addresses of business firms, decorate the entrances of buildings. The high gloss finish created by electropolishing makes this metal very attractive.

On account of their rustproof, stainless properties, nickel alloys have become necessary in the interior as well as the exterior of the home. When one enters a home, one is aware of the useful articles and the perfection of the household appliances, such as stoves, washing machines, toasters, and all other electrical equipment, also cooking utensils and the trimmings of our kitchens and bathrooms made of nickel alloys which give a bright, clean and neat appearance. The outstanding use of Monel and stainless steel in kitchens, laboratories, and operating rooms in our modern hospitals of today is the biggest recommendation for its use in the home. Monel is the chosen alloy because of its resistance to wear, having no surface to crack or chip, and the ease with which its immaculate appearance can be maintained.

Thanks to nickel, the medical profession has gained new efficiency in equipment. One of the most recent discoveries has been the finding of an easier and better way to obtain the needed supply of the new ACTH hormone. From now on arthritic sufferers who find relief in the ACTH treatment can give at least some of the credit to a small idea — a nickel tubing and a glass jar used to extract the pituitary glands from freshly killed hogs. Nickel was selected for this apparatus as it is completely nontoxic to the delicate gland. Another instance where nickel helps to save lives and relieve suffering is in prefabricated austenitic stainless steel templates used in fractured and diseased skulls. These plates are rustproof and malleable and have been perfected only after twenty-five years of experimenting.

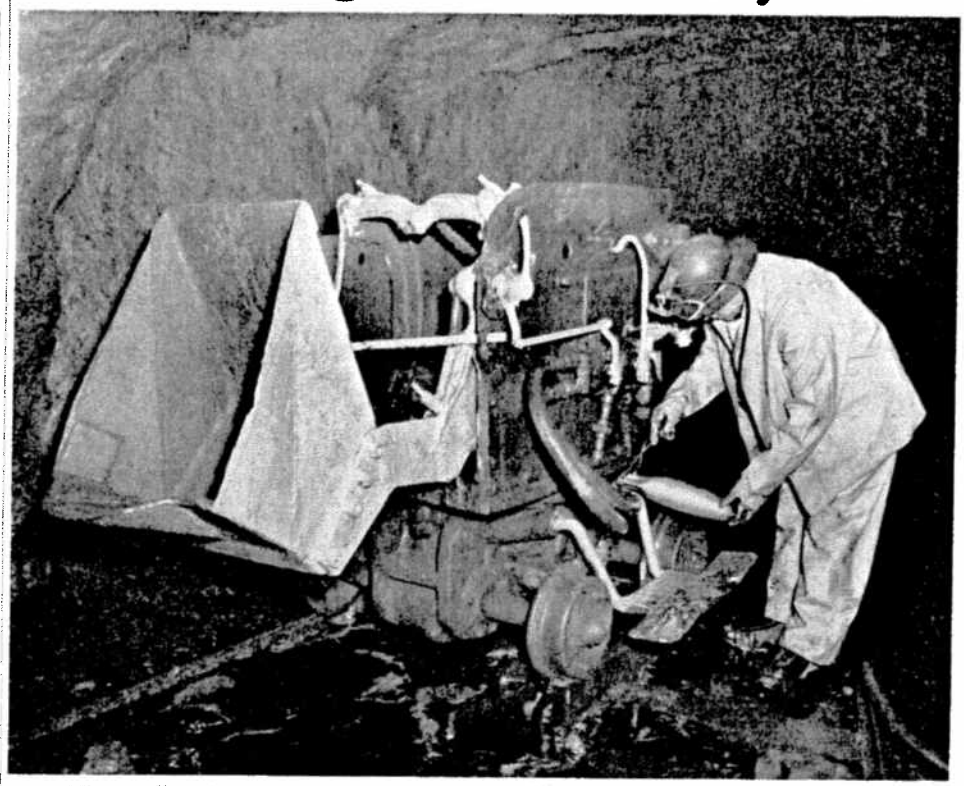
A very recent announcement to the medical world was the discovery and perfection of a nickel-cobalt needle, which is made radioactive, for insertion into diseased tissue in the treatment of cancer. The nickel content, which provides machineability and ease of forming, absorbs little of the radiation, while the cobalt in the needle is made uniformly radio-active. This needle will hold its power of radiation for over five years, after which time it can be re-treated. Being magnetic, it is easily located and removed.

A great deal of nickel produced goes into equipment for mining, smelting and refining because this machinery must be strong, durable and dependable. This is especially true in the nickel district of Sudbury, where approximately eighty-five per cent of the world's nickel is produced. For the same reason modern farm equipment, such as combines, tractors, corn and cotton pickers, are made of nickel alloys, saving an enorous amount of time and labour.

When travelling by train, street car, bus, automobile, ship, or aeroplane, one can be sure that nickel has played an important part. Through the use of nickel and its alloys travelling has become safer, more dependable and much faster than in years past. Our railroads are one of the largest consumers of nickel alloy steel. The locomotive today, thanks to nickel, can accomplish the work of two of the old type locomotives, due to its lighter weight, durability and corrosive resisting properties.

Automobiles are much indebted to nickel and its alloys for their low maintenance costs, speed and attractive appearance. Spark plugs of a new design made of Monel, with high nickel adjustable center electrodes and shatterproof ceramic insulation, are attracting a great deal of attention. On account of its construction, this spark plug gives long service, saves on gas consumption, is rustproof in salt as well as fresh water, and therefore in great demand for outboard and inboard motors. After ten thousand miles of service, one of these plugs was removed from an automobile, cleaned and reset. When tested it had the same compression as when

Inco Underground Goes Hollywood



Miners glimpsing this picture of Jim Menard's mucking machine needn't utter wild cries and rush for the nearest optician or psychiatrist. Everything is under control. The Safety Dept. is building a complete file of pictures for lantern lectures in the lunchrooms underground and, to bring out the various poin'ts to be discussed, parts of the equipment were painted for photographing. Don't be surprised, men, to see silver scaling bars or white spats flash on the screen as you munch your lunch. It's all part of an elaborate and costly Inco program aimed at sending you home safe and sound at the end of every shift.

Princess and Her Duke Win Affection

Canada and the United States have been charmed by two young visitors from England, Princess Elizabeth and her husband the Duke of Edinburgh. Wherever they have gone the people have been struck by their genuine interest and unaffected manner. The strain of such a tour must be enormous but not once have they indicated anything but enjoyment. Our pictures, made by Frank Foley and released by the National Film Board, show the attractive couple as they took part in a good old-fashioned hoe-down arranged at Ottawa by the Governor-General, Lord Alexander. The Princess is pretty, gracious, understanding; the Duke is handsome and a born diplomat. Together they have won warm friendship and affection.

new due to the wearing qualities of Monel. Seventeen years ago the idea of an automatic clutch, now used in many automobiles, was only a thought. After years of research it is now in practical use. The inventor's greatest problem was a metallurgical one, but after consulting International Nickel engineers, the clutch was constructed of nickel cast iron owing to its mechanical properties and its ability to resist metal to metal wear.

The fisherman's pride is his tackle box, which must be outfitted with the best available equipment. To assure this, there is a wide variety of tackle now being made of Monel, which is light weight, strong, and rustproof in salt as well as fresh water. This tackle includes metal landing nets, fishing lines, luminous lures for night fishing, and countless others.

A bag of crisp, crackling popcorn is a child's delight. To safeguard our children's health Monel popcorn machines are being used. Neilson's chocolate bars, known to everyone, get their glossy finish from the use of Monel molds. These molds receive hard handling, which Monel can withstand. Nickel alloy fittings are now used extensively in breweries, dairies, carbonated beverage and food industries. These metals are being used for our food today for the ease with which they can be kept clean, and their resistance to corrosion and contamination.

The continuous research and development of new markets, which results in the great expansion of nickel's peace-time uses, also finds a large demand for war machinery and equipment. In the Second World War we saw how nickel was widely used to serve the allied nations. Its output was controlled by the government so that it might not entirely neglect its peace-time trade. Today nickel finds extensive use in the engine of the jet propelled plane, in the engine and landing gears of all aeroplanes, due to its strength, non-corrosive and wearing ability.

The International Nickel Company deserves a great deal of credit for the part it has played in the past fifty years in the research and development in the uses of nickel and its alloys. This metal has taken a major role in modernizing and improving our homes and hospitals; in the progress of our mode of transportation; in the making of large and small machinery; and in the production of war munitions and equipment. In the medical and scientific world it has been found indispensable in the relief of suffering and saving of lives. One cannot overlook the continuous income of United States dollars this metal brings to Canada. The nickel industry, which is one of Canada's largest, provides employment for thousands of her people. Thus, when one has the knowledge of the many uses of nickel and its alloys, and the benefit it is to our way of living and to our foreign trade, it can readily be seen that nickel plays a very important part in our everyday life.

KEEPING THE BARGAIN

A young lad in the lower grades complained to his teacher that he had a terrific stomach ache. The teacher sent him to see the principal.

When the little tyke returned to the classroom, he walked in such a manner that his stomach stuck way out. When the teacher asked him why he was walking that way, he replied:

"I told the principal I had a stomach ache and he said if I could stick it out till noon he'd drive me home."

$223 Award Fits Neatly into Kiviaho Story

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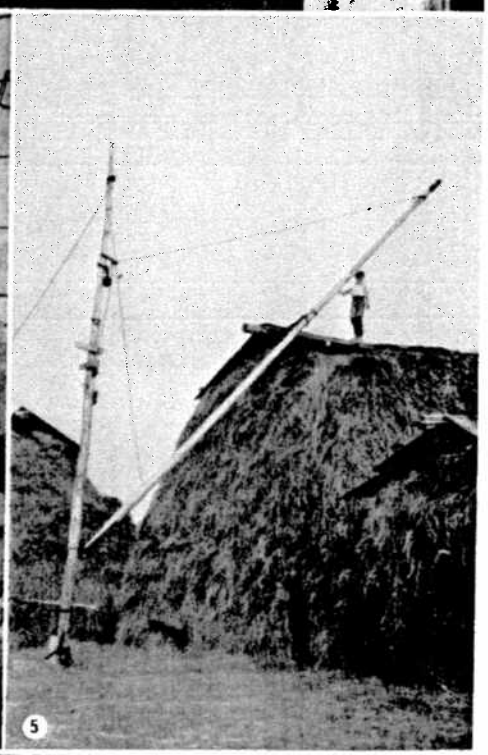
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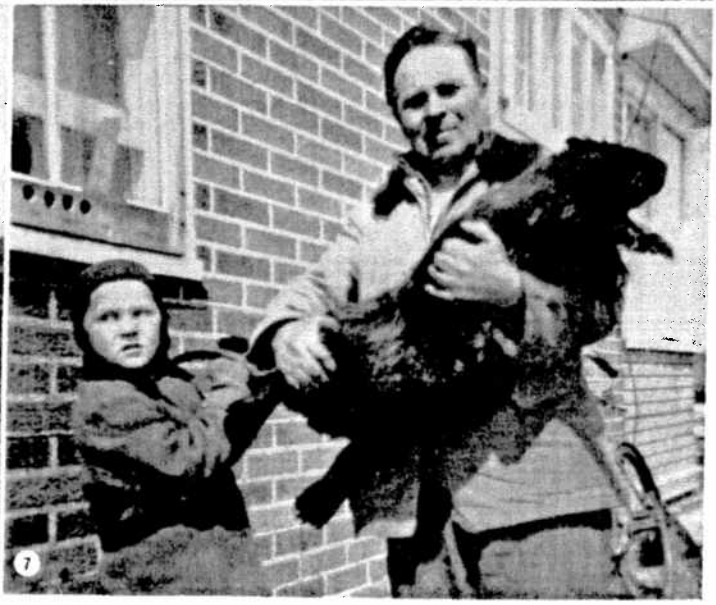
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Life is Good to Eli Kiviaho but He's Earned it

Away back in 1938 the Triangle carried a feature story on Eli Kiviaho of Creighton Mine, hailing him as typical of the "frugal Finn" type of new Canadian who was making a substantial contribution to the growth and development of the country.

At that time Eli was fighting back from a serious economic blow. His small farmhouse on the Sault road just east of Victoria Mine had been destroyed by fire. The family took up temporary abode in a small cookhouse, and the five sons slept in the machine shed, and everybody knuckled down tight to save money for a new home. Eli bought one of the abandoned buildings at Crean Hill; he and the boys dismantled it and hauled the lumber to their farm. Working swiftly against the approach of winter they soon built the comfortable house in which the family now resides.

Not a shift did Eli lose on his job at Creighton, despite all his trials and tribulations. In the winter months he travelled the 17 miles to and from the mine on skis; in the summer he often walked or ran the whole distance. He was tireless, steady, quietly ambitious.

Even his hobby had to be profitable if Eli was to achieve the goal he set for himself, so he declared a one-man war against wolves. Armed with his rifle he would set out on his skis for a likely wolf district and circle until he crossed a track. Then he was off, and five or six hours later he had his quarry. The wolf, exasperated by the relentless pursuit, would stop to howl. This was its fatal mistake because Eli was a crack shot. The result was a nice bit of bounty.

Last month Eli was in the news again. One of his ideas for improving the equipment at Creighton Mine was awarded $223.00 through the Employees Suggestion Plan. So the Triangle went back to have another look at this indomitable character with the iron-man constitution. The camera tells the story on Page 14:

1. We picked up Eli at Creighton Mine and had him go through the motions of dropping a suggestion in the big box.

2. Then we went out to the farm and caught this happy group as the family all reached for a piece of Eli's $223.00 cheque. The tableau was strictly for a picture, though, because Mrs. Kiviaho announced that the money would be set aside to help pay for Eli's passage to Finland next year for a long-deserved holiday. He might even enter the Olympic games. In the photo are Eli and his wife, their daughter Laila, 11, their sons John and Billy, and their son Edward of Crean Hill with his wife and children, Sandy, Gail and Ricky.

3. When the policeman comes to call at the Kiviaho farm, it's a time for pleasure rather than palpitation because Constable Eugene Kiviaho of Sudbury is one of Eli's sons. He's seen here with his father. Another son, Emil, works for Inco at High Falls, and the fifth son, Allan, is employed in Toronto.

4. The milk from a fine herd of cattle brings steady revenue to the Kiviaho home. Picture shows Mrs. Kiviaho cooling milk before it is picked up at the farm by a truck from a Sudbury dairy.

5. A hoisting device for stacking hay is one of the many applications of Eli's inventive genius on the farm, where he operates his own personal Suggestion Plan. Atop the stack is his grandson Sandy.

6. Eli and the boys have 150 of their 320 acres under cultivation, grow oats, barley, rye. It was a big day when they acquired a tractor-plow combination.

7. "Just like a bank" is the little creek which runs across Eli's farm. Every year it yields him about $1,000 worth of beaver pelts. Picture shows him holding a live beaver which he caught in one of his traps and kept in the basement of his home for a couple of weeks. With him is his young son Billy, 7. Back in the woods on the farm are partridge — John knocked over five in half an hour's hunting the other Sunday afternoon. In the creek Eli has planted brook trout.

Quite obviously Eli Kiviaho is living the good life. He has worked hard for the comfort and independence he now enjoys. With the Company he has credited service of more than 38 years, and is highly regarded. He has a fine family. He is the kind of solid citizen with which Canada has grown to nationhood.

Another Trio of Brothers for Inco's Retirement Records

JACK, LOUIS, AND AUGUST SWITCH

When August Switch retired last summer, with credited service of more than 28 years, he was the third member of his family to become an Inco pensioner. His brother Jack punched out for the last time in July of 1946 with 36 years' service, and his brother Louis finished his final shift in October of 1948 with service of 25 years.

Another well-known trio of Inco pensionbrothers are the Heales, Tom, Charlie and Fred.

At one time six members of the Switch family worked for the Canadian Copper Company, corporate forerunner of Inco. Michael Switch had come up from Renfrew in 1899, and the following year he sent for his family. They lived in one of the 60 or 70 log cabins at Stobie, the father and his five sons all employed at the mine. August started in the rockhouse, working 10 hours a day for 7½ cents an hour; he left school because it burned down — he claims with delightful candor that if it hadn't burned down he might still be going to it.

It was frontier life at the Stobie camp in those days. The Switch family had running water — the boys ran with it from the well to the house. Dan McNaughton operated the general store and livery barn. Dances, sleigh rides and practical jokes were the entertainment. It was a three-mile walk down the tracks to Sudbury. August visited Copper Cliff only once in the six years before he went to live there in 1906.

Michael Switch later worked at Creighton, at the Company's quartz mine at Naughton, and at No. 2 Mine at Copper Cliff. He was pensioned in 1921 and died in his 85th year. Frank and Michael Jr., two of the boys, left the Company in 1911 and now reside at Renfrew. Jack, Louis and August stayed on.

August saw service at Crean Hill and Creighton, took a turn up north at the Dome, returned to Copper Cliff. In 1938 he was transferred to the Open Pit as a shift boss, and he was there when he reached the retirement age. Robust in health and spirit, and blessed with a broad sense of humour, he was very popular with his men. He was married in 1921 at Copper Cliff to Agnes Pascoe, who died in 1940. He was remarried in 1941 to Mrs. Dora Paquette; they have one son.

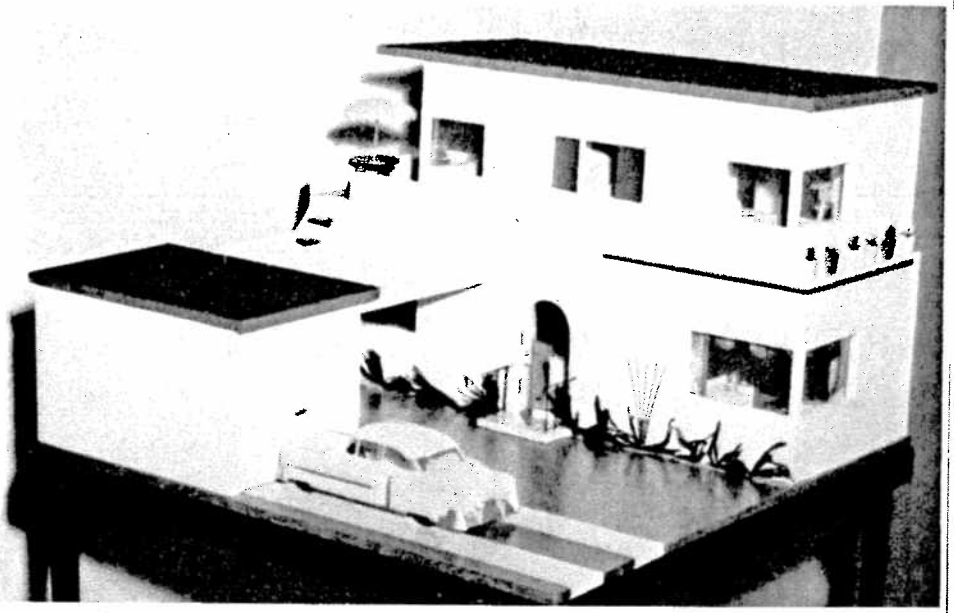
The Switch men's memories of Inco in its early days would make interesting reading if you could tie them down to reminiscing, but the catch is that all three are too busy living in the present. They do recall, though, some high jinks as kids at Stobie, sneaking out at night to hide behind pine stumps and play pranks on their elders. And they remember the days when the men in the mine used teapots filled with signal oil for lamps, pulling the wick up through the spout. It was about 1905, August says, when the miners switched to candles for illumination to get away from the oil smoke, and he thinks it was near 1910 when carbide lamps were introduced.

All honor to these men who, like so many others, have been with Inco through their years, doing their work day by day, filling their homes with comfort and happiness, living out their time in a solid and worthwhile way.

LOST HIS SPECS

George Kucala, employment No. 4167, who works in the concentrator at Copper Cliff, has asked the Triangle to help him find his glasses, which he lost Oct. 1. He'll gladly pay a reward for their return to one of the Company time offices.

Make Doll House for Charity Draw



Marshall Kostash of Copper Cliff Smelter and Waverly Tyers of the Purchasing Dept. put their woodworking talent to good purpose when they made this smart doll house. Modern in every respect and completely furnished, it will be raffled by Nickel Chapter of the I.O.D.E., the proceeds to go to charitable causes.

Finer Moment in Life of Pete Ross

His name is Thomas R. Ross but to everybody around the separation plant at Copper Cliff, where he's a member of the electrical crew, he's just Pete. The other day we had the pleasure of photographing him, complete with satisfied grin, as he let Hughie Allen take a gander at a $228.00 Suggestion Plan cheque. "Boy!" exulted Pete, "will this ever come in handy! Just in time for my mother's birthday! And I don't mind admitting I could use a new suit." Pete's prize-winning idea had to do with guards on electrical equipment. "The first $228.00 is the hardest," he cracked. "Now all I have to do is re-Pete!"

Norman Coopman Taking It Easy

A familiar figure to all the old Orford Building employees at Copper Cliff Smelter is pictured above, taking his pensioned ease down at King, Ont. It's Norman Coopman, better known to his work pals as "Shady," who retired on disability pension last April, shortly before his 53rd birthday.

Born at Sherkston, Ont., and originally employed with the Company at Port Colborne in 1922, he was transferred to Copper Cliff in 1932. They say he is one of the best cranemen who ever lifted a ladle.

Mr. and Mrs. Coopman have one son, Jack, who lives at Beverly Hills, Ont., and two daughters, Mrs. W. S. Moon (Charlotte) of Raglan, Ont., and Margaret of Hamilton.

His many friends will be glad to know that "Shady" is doing fine and enjoying life in his new environment.

Learn from the mistakes of others — you can't live long enough to make them all yourself. —Martin Vanbee

BUT NOT CANNED

Bill: What's Tom pouring on his tomato plants?

Will: Whiskey.

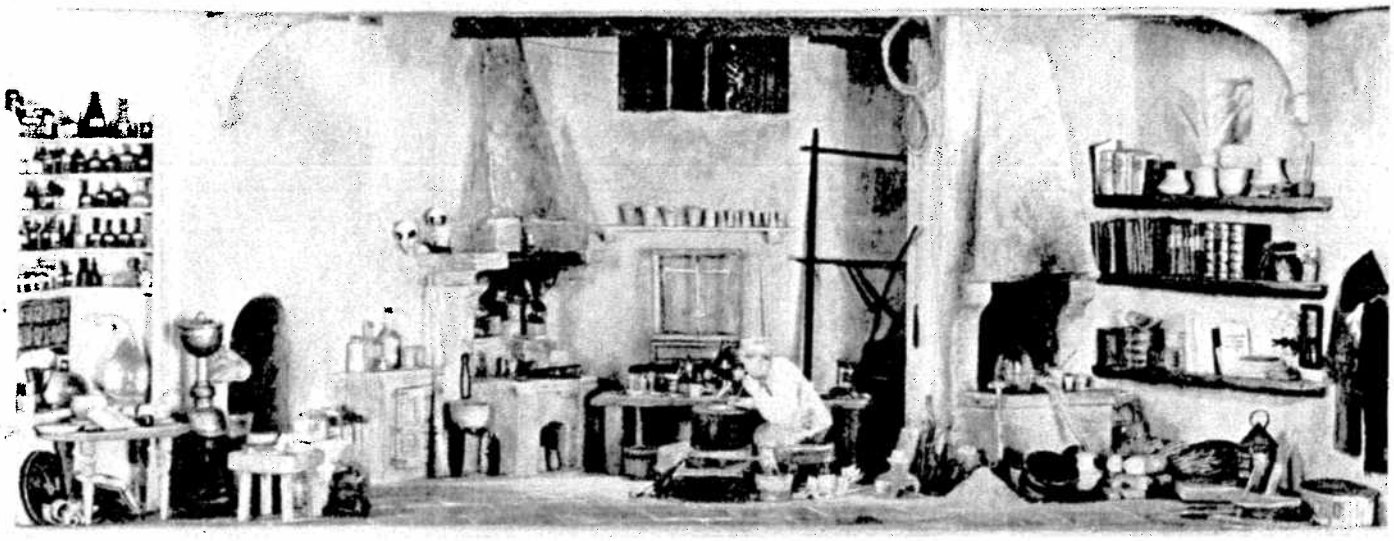
Bill: Whiskey! What on earth for?

Will: Oh, he wants to raise stewed tomatoes.

Creighton Miner Bags Big Bear

A Creighton miner, Alphonse Trottier, telephoned to say he had shot a bear. Oh yeah? we said, let's see it. Within half an hour Alphonse was out in front of the General Offices at Copper Cliff with bear and witnesses. He's on the right in the above picture, holding the gun that did the deed near Markstay on Oct. 14. On the left is Aurel St. Onge, also of Creighton, who accompanied Alphonse on the hunting trip, and in the centre is Roland Chamberlain, another Creighton man.

Inco Displays Model of Cronstedt's Workshop



One of the features of International Nickel's display at the National Metal Exposition held in Detroit October 15-19, was a scale model of the laboratory in which, 200 years ago, the Swedish scientist Axel F. Cronstedt isolated and discovered the element nickel. The model was created by F. Broun-Morison of England for the Mond Nickel Company Limited, the United Kingdom affiliate of Inco, in commemoration of the bicentennial of the discovery of nickel.

Although the open measurements of the model are only 22 inches by 7 inches, some hundreds of authenticated items in miniature are included. The design and contents of the model are based upon records in The Royal Institute, The Science Museum Library and the British Museum, and details of clothing were provided by the Swedish National Museum.

The model shows the type of apparatus which Cronstedt and his contemporaries used to carry out their experiments. Displayed are such items of the time as the blowpipe, weighing scales, hearths, bellows, retorts, crucibles, distilling apparatus, as well as volumes of papers presented before the learned societies of Europe. The infinite care which characterizes every detail of the model is illustrated by the fact that a spider's web was constructed of nylon and placed in the corner of a high window.

Another High Honor for Dr. Paul D. Merica

The Gold Medal of the American Society for Metals in recognition of "outstanding metallurgical knowledge and great versatility in the application of science to the metal industry, as well as exceptional ability in the diagnosis and solution of diversified metallurgical problems" was awarded to Dr. Paul D. Merica, executive vice-president of The International Nickel Company of Canada, Limited, at the Society's annual dinner meeting on October 18 in the Grand Ballroom, Hotel Statler, Detroit, during the International Metal Congress.

Dr. Merica was the sixth member of the Society to receive this honor since it was established in 1943. A figure on the medal symbolizes science, holding in his right hand a mass of raw ore and in his left hand a finished ingot, indicating how science transmutes the raw material into a finished and usable product.

There are outstanding metallurgists and also notable business executives but rare is the combination of scientific ability and commercial leadership possessed by the 1951 recipient of the Gold Medal, Dr. Merica.

As one of the scientists to join the new Division of Metallurgy at the National Bureau of Standards in 1914, Dr. Merica's work was centered around the development of light alloys for aircraft construction. As a result of these researches he, with two associates, prepared Scientific Paper 347, entitled "Heat Treatment of Duralumin" which became the nucleus of the development of the light, strong alloys of aluminum now widely used in airplane construction.

Indeed, his fundamental theory of hardening by dispersed, sub-microscopic particles of a minor constituent has been shown to have almost universal application, and prepared the way for many commercial alloys of great importance — not the least of these being the strong nickel and copper-nickel alloys formulated under his direction in the development and research department of International Nickel.

In his 30 years with the Nickel Company his record of accomplishments has warranted a steady increase in responsibility culminating in his election as executive vice-president in 1949. Within the first 10 years and after an outstanding record as director of research, he became technical assistant to the president and the problems before him assumed international proportions as the Nickel Company steadily increased its mining and world-wide markets. As head of International Nickel's Development and Research, Dr. Merica grew with the company and kept abreast of metallurgical progress throughout the world.

His leadership and support of research in the fields of ferrous and non-ferrous metallurgy, and his ability to tie-together research with practice have received world-wide recognition. Dr. Merica's contributions to metallurgy won him the James Douglas medal in 1929, the John Fritz medal in 1938, the Institute of Metals medal in 1941 and made him the recipient of the Franklin Institute medal in 1942.

MISTAKEN KINDNESS

"Dick," said his mother, "I wish you would run across the street and see how old Mrs. Rush is."

"Yes'm," said Dick.

He bounced back in a few minutes and said:

"Mrs. Rush says it's none of your business how old she is."

A slender acquaintance with the world must convince every man that actions, not words, are the true criterion of the the attachment of friends. —George Washington.

Nick Trefiak Too Much for Mornan

The final match for the 1951 Inco handicap golf championship of Sudbury District was an all-Creighton affair in which Nick Trefiak (left), the old clutch player, took the measure of Bob Mornan (right) 3 and 2. The non-handicap title was won by Stew Watson, who defeated Ron Silver in the final 2 and 1. Eight low-scoring stars in the annual inter-plant golf team struggle took part in the playoffs for each individual title.

Nothing'll cook your goose faster than a red-hot temper.—The Gilcrafter.


SUDBURY

Reserve Army Training Program Attracts Many Inco Employees

The broad and interesting program of training offered by the Reserve Army has prompted many Inco men to enrol in 58th (Sudbury) LAA Regiment. Two evenings a week they receive instruction at the armories, for which they are paid at active army rates.

"The object of Reserve Army training," says Lieut.-Col. T. P. Gilday, commanding officer of the regiment, "is to develop a well-trained nucleus of officers and NCO's around which the Army can expand in the event of a national emergency."

War is no longer a matter of fighting on somebody else's ground, Col. Gilday points out. Air power has changed all that. A country now must be prapared to defend its own land. It must have reserves which can be mobilized swiftly and effectively for the defence of a vital point in the national economy like Sudbury District. Men who are preparing themselves for service at such a time are living up to a high standard of citizenship.

In the Reserve Army a man is taught respect for himself, for others, for authority, for our way of life. For many young men the Reserve Army training is a bridge over the big gap between school and full maturity. The valuable instruction, the hours of planned recreation, and the feeling of belonging to a smart military unit, provide them with many happy and worthwhile hours.

The Sudbury regiment is still recruiting men as its winter training program gets underway. Any young fellow with some time to devote to his own betterment would be well advised to drop around at the armories on a Monday or Tuesday evening and learn the score. The Triangle camera did that and the accompanying photographs give some idea of the range of activities:

1. Some of the officers of Regimental Headquarters study plans for the defence of Sudbury District in the event of an attack by air. Seated at centre is Lieut.-Col. Gilday; on his right are 2nd Lieut. E. A. Meade and Capt. A. E. A. Corby, adjutant; on his left are Capt. K. G. Robb, paymaster, and Major J. W. Fuller. Standing, left to right, are Capt. G. Hervey, Capt, W. J. Hiscock, Major C. L. Wilson, 2nd in command of the regiment, and Capt. G. E. Dickey, quartermaster.

2. Instruction in unarmed combat is part of the training prcgram for 175 Battery, which is assigned to the recruiting and training of potential non-commissioned officers and gunners, with Major Doug Walker as commanding officer. Picture shows one method of breaking a throttle hold. On the left of the group is Sgt.-Major McLure. The combatants are Bdr. Chapman and Bdr. Boivin.

3. Bdr. Holson of 173 Battery gets a lesson in the handling of a Bren gun from Sgt. Schillemore (right) while Lieut. K. J. MacDonald looks on.

4. Capt. R. N. H. Beach (right) of 174 Battery supervises a class on the stripping of a Bren gun. Left to right are O/C L. P. Gravel, O/C J. Hough, O/C R. Lister, O/C R. Dixon, O/C D. Channer. No. 174 Battery is assigned to the training of officer cadets, under Capt. Tony Falzetta.

5. A lesson on the bolt action of a service rifle is being given here by Capt. Ray Lajeunesse (left) of 174 Battery to O/C W. Nobleman, O/C F. L. Guile, O/C R. B. Carscadden, O/C R Crichton.

6. Here's some bayonet drill. The instructor, Lieut. McComb (left) wields a bayonet stick as he spars with Bdr. Noble.

7. Capt. A. H. Anderson (right) is in charge of this group of officer cadets who are practising the stripping of a Sten submachine gun: left to right, O/C D. H. Mulholland, O/C R. Ryan, O/C N. Smith, O/C F. McGraw, O/C C. Duncan.

8. This group of 175 Battery men gave a sharp demonstration of loading rounds to a 40 mm anti-aircraft gun. In action are Bdr. Chapman, Gnr. Belfry, Gnr. Barlow, Gnr. Beauchamp, Bdr. Noble, Gnr. McAuliffe, and (hidden) Bdr. Boivin.

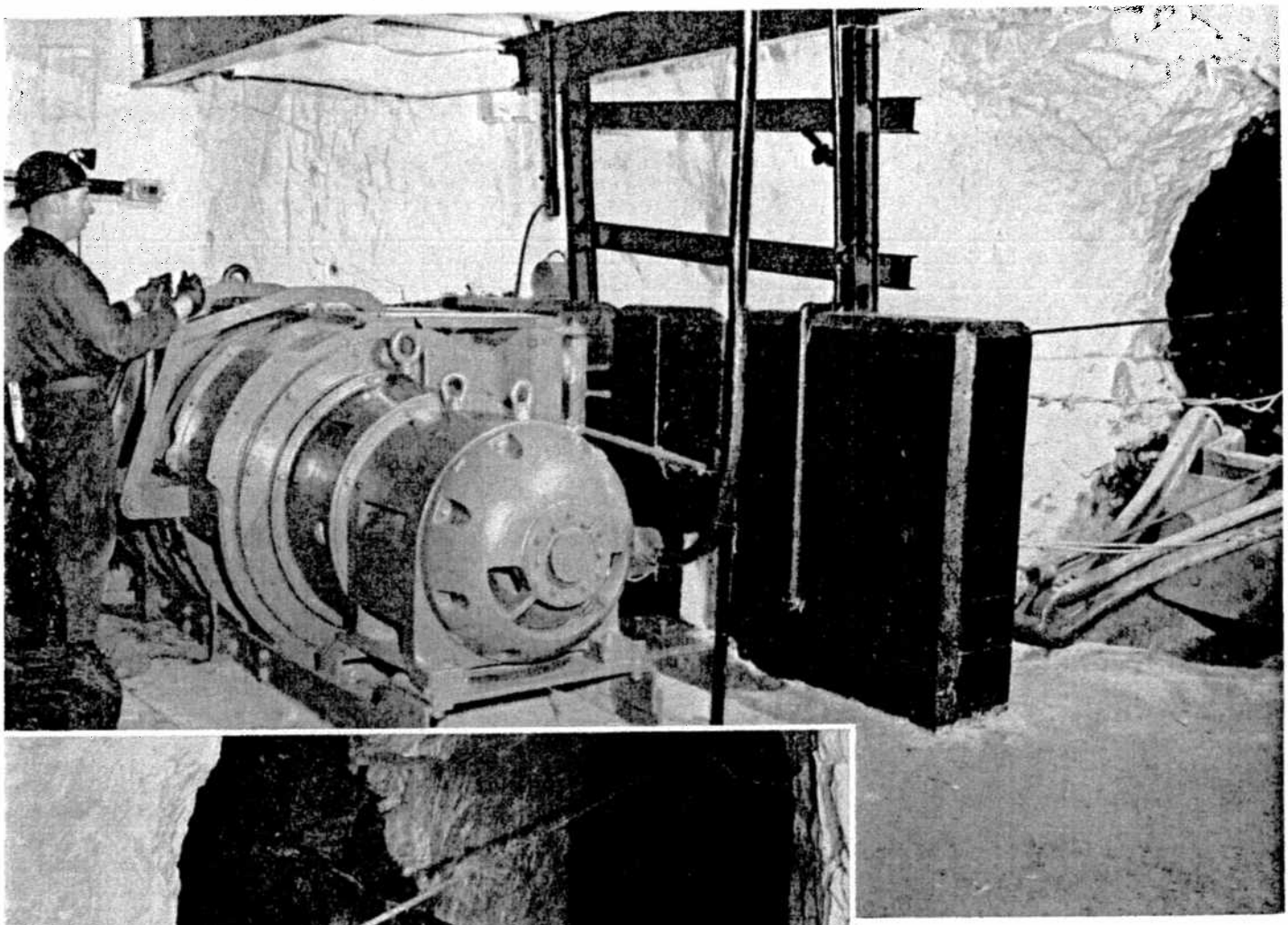
9. A rugged session of floor hockey is always popular with the trainees, and they play for keeps too. Capt. Gary Lott of 175 Battery is about to toss in the puck.

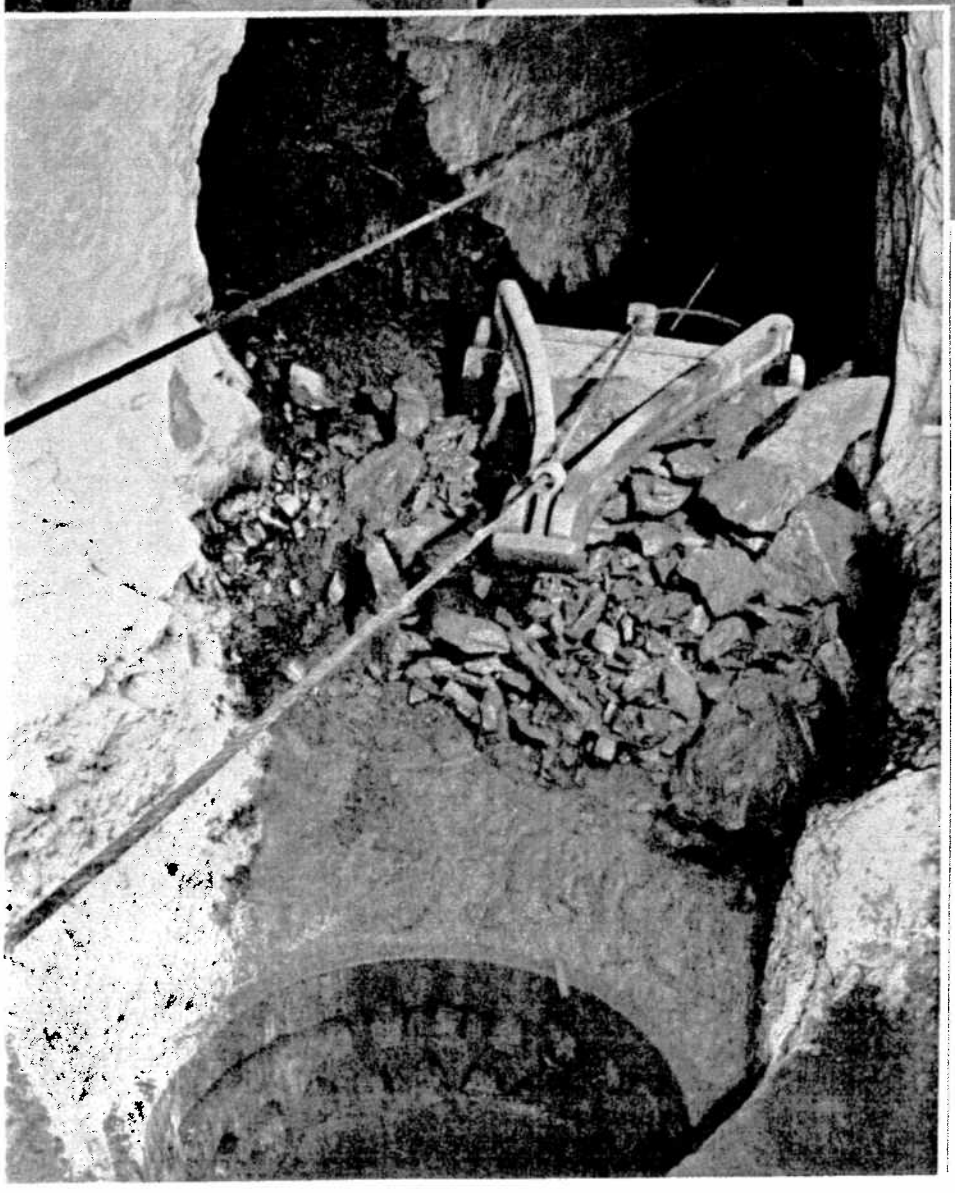
10. The regiment's brass band is rapidly rounding into a sound musical unit under the leadership of Thos. Clegg, A.R.C.M., whose coming to Canada was arranged by Col. Gilday with a view to making the band a first-class combination. Bandmaster Clegg is a graduate of Kneller Hall, the world-famous British Army school of music; his record as a student there, and also as a bandmaster in the British Army, was outstanding. The picture shows him leading a practice session of the regimental band. Of the 26 members, 19 are Inco men. Band officer is Major J. W. Black.

11. Here's the regimental band's trombone section: left to right, W. Zloczewsij, A. Cinnotti, E. Cross, and F. Piehl.

12. Officers of 173 Battery are seen here as they go over plans for AA defence of the Sudbury area: left to right, Capt. W. A. Thompson, Major E. H. Capstick, and Capt. F. R. Dionne.

13. Here are four of the officers of 174 Battery, in a huddle over their training program: left to right, Capt. R. N. H. Beach, Capt. A. Falzetta, Capt. R. J. Lajeunesse, and Capt. A. H. Anderson.



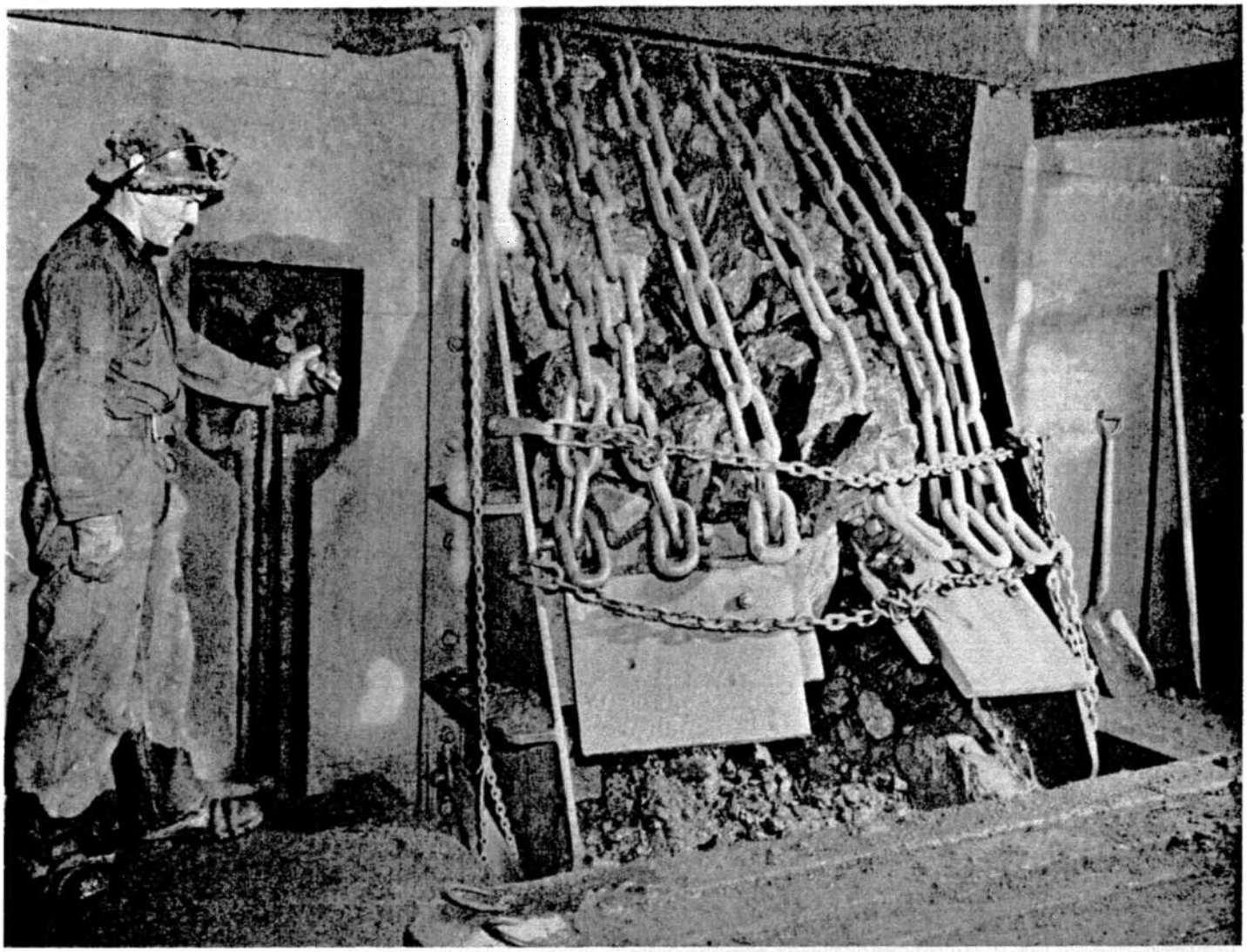


Big Equipment For Handling Blast Hole Ore

Blast hole mining, one of two new methods applied by Inco to make possible economic utilization of lower grade underground ores for replacement of the tonnage from the Open Pits, has called for some very impressive installations of equipment at Frood-Stobie mine.

Previous issues of the Triangle have contained photographs of the 20-ton locomotives, the 260-cu. ft. ore cars, and the huge rotary tipple now in operation on 1000 level at Frood-Stobie to handle ore recovered by the blast hole method. In the accompanying pictures are seen other massive units used in the process of bringing the ore from the upper areas of the mine to 1000 level for crushing and hoisting to surface.

Blast hole mining, let us remind you, is a method of breaking ore from the face of a stope, or working place, by firing explosives in long holes drilled with diamond or tungsten carbide tipped drill bits. The holes are drilled in line to take a 5 to 6-foot slice of ore from the stope face, usually to a length of about 75 feet. The broken ore falls to the bottom of the stope and into a series of cone-shaped chutes prepared before actual stope mining is commenced. The bottom openings of the cones lead either to a control for direct loading into ore cars, or to small drifts in which a scraper is used to drag the ore to an opening above the ore cars.

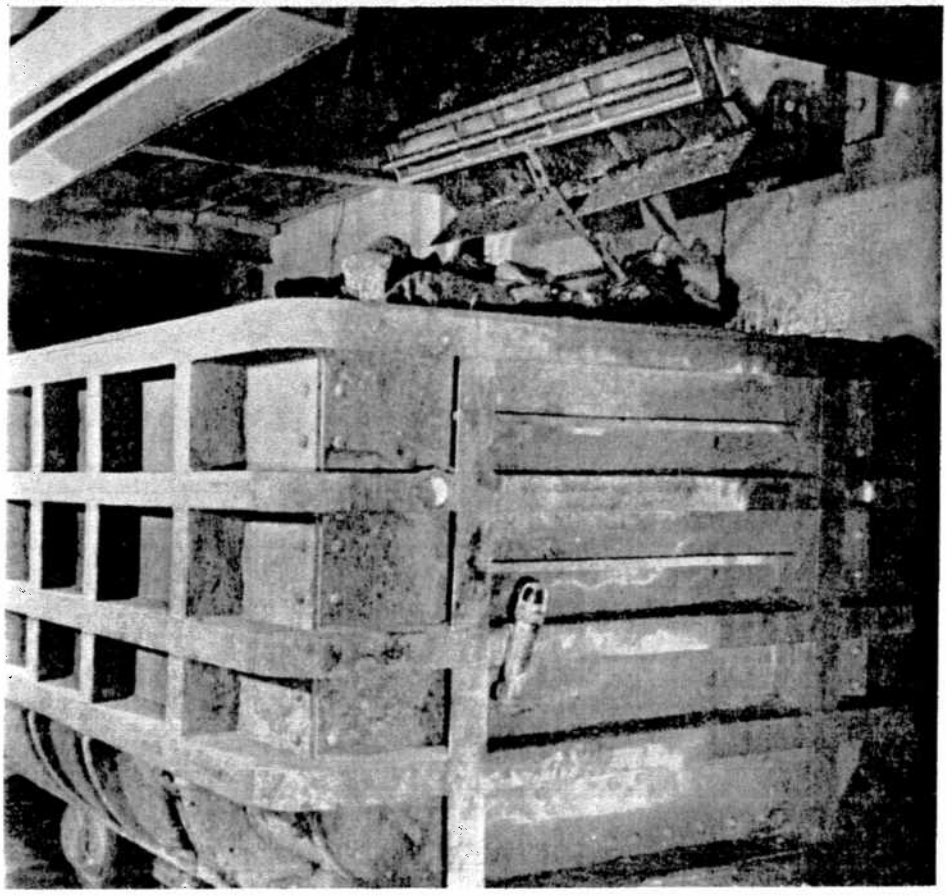


These small drifts are called scram drifts, and the first of the accompanying photos shows a slusher station in one of the 14 now in operation at Frood-Stobie. It is located on 600 level. Operating the 125-h.p. slusher hoist is Ray Abrams. The slusher is protected by a concrete wall and steel rails. Ventilation is arranged so that all smoke and dust from blasting in the boxholes and the ore pass is carried out the tail end of the drift. A powerful sealed beam floodlight illuminates the scram drift. On the right is seen the scraper which is dragged back and forth by the slusher hoist.

Second picture gives a close-up view of the scraper as it pulls a 3-ton load of ore along the scram drift and into the ore pass. The scraper is a folding type and is 72 in. wide. The opening at the left is the throat of one of the boxholes through which the ore flows from the blast hole stopes down into the scram drift. As many as 10 boxholes may lead into one scram drift, which is anywhere from 150 to 250 feet in length.

The third photograph of the layout, on Page 11, shows one of the concrete loading chutes installed just above 1000 level by which the blast hole ore, which has travelled down the ore pass from 600 level, is loaded into cars. The chute is 5 ft. 10 in. wide, big enough to load a car without re-spotting. At the control of the air-operated gate which regulates the flow of the ore into the cars below is Johnny Legault.

In the fourth picture, taken on 1000 level below the gangway where the chute-puller stands, is a view of a loaded 260-cu. ft. car spotted beneath the chute. The car holds 12 tons of ore and there are usually 20 cars to the train which is hauled away to the tipple.



Inco People Active in Civil Defence Work

An interesting example of how Inco people take an active part in the civic affairs of Sudbury and the immediate district is seen in this photograph of the Lockerby committee of the Sudbury Civil Defence organization. Of the 16 members of the committee, 13 are affiliated with Inco. In the front row, left to right, are Wm. Currie (Copper Cliff Electrical), fire chief; W. J. Carr, director of Civil Defence for Sudbury District; Mrs. A Grubber (whose husband works at Frood-Stobie), deputy chief of welfare; J. N. Grassby (Mines Standards), chief of engineering; M. Ross (Mechanical Engineering), chief of transportation; K. G. Robb (Research Dept.), director of Civil Defence for Lockerby; Cllr. Ludger Michel, representative of McKim Council on the Civil Defence control committee; back row, W. E. Watt, deputy chief of security; V. G. Young (Copper Cliff Electrical), deputy chief warden; M. R. Atkinson (Copper Cliff Electrical), chief of security; T. Smyth (Coniston Smelter), chief warden; G. E. Walford, chief of welfare section; C. A. Parker (Copper Cliff Smelter), asst. chief of transportation; T. Cornthwaite (Copper Refinery), chief of first aid; H. B. Shoveller (Copper Refinery), deputy chief of First Aid.

The picture was made at a meeting of Lockerby residents held in McLeod School. Thirteen of the 16 members of the committee were there. To show what it takes to keep a Lockerby man away from a gathering where the welfare of the community is to be discussed, here's why the other three failed to attend: G. M. Patterson, deputy director, had a flood in the basement of his home; G. M. Marshall (Frood-Stobie Engineering), deputy chief of engineering, was out of town; Reg Hiscock (Copper Refinery), deputy fire chief, was taking part in an Inco first aid demonstration.

Similar groups, all right up on their toes in preparation for the dread eventuality of an atomic blast, and training to handle the emergency in the so-called "cushion area," have been organized in Sudbury, Gatchell, New Sudbury, Minnow Lake, Copper Cliff, and Frood Village. In these organizations also, Inco people are playing a leading part.

Electric Janitor Needs Controls for Complete Security

By W. A. H. HUMPHRIES
Fire Inspector, Inco

In these days when everyone tries to obtain some gadget or other to save his legs or arms or brain, it may be disturbing to realize that complete security cannot always be obtained from automatic equipment unless one is careful to obtain the proper machine for the job. A case in point concerns the so-called "Electric Janitors" when they are installed on furnaces with blowers.

In some cases tenants have installed an electric janitor which consists of a room thermostat operating an electric motor for opening and closing the furnace dampers.

If such a "janitor" is controlled entirely by a room thermostat, a condition can arise where the furnace can overheat and set fire to the house through the overheated hot air pipes. This is how the trouble comes. These furnaces with blowers depend on the blower to circulate the heat — if the blower stops for any reason, the heat does not reach the rooms as it should because the hot air pipes in these furnaces are not large enough for gravity circulation. Consider a heavy fire in one of these furnaces with the blower operating and the electric janitor holding the furnace dampers open. Now suppose the blower stops by reason of motor trouble. The heat in the furnace jacket now is not reaching the rooms properly but builds up in the furnace bonnet. The room thermostat calls for more heat and the "janitor" holds the furnace dampers open and overheating of furnace bonnet and a short section of the hot air pipes near the furnace results. This overheating may be sufficient to ignite the woodwork above the furnace bonnet or at some point where the hot air pipes contact the wood in the floor above.

To prevent such a possibility everyone who has an electric janitor or those planning to instal one should have a limit control wired into the furnace bonnet to close the furnace dampers when the furnace bonnet temperature reaches 200°F (or 30° higher than the blower control setting). This limit control as it is called will act regardless of whether or not the room thermostat is calling for open dampers. In other words, it will override the "janitor".

Another possible source of trouble is a power failure occurring just when the electric janitor has the dampers open. In that case, the janitor remains open even after the power comes on. The blower stops during the time the power is off and during this time when the blower is not running, serious overheating can occur. Here again protection can be obtained by buying the proper type of electric janitor which will close the dampers immediately the power fails. This type has what is called "current failure protection."

In short then, if you want to feel safe with an electric janitor, you should have two controls incorporated in it: 1. A limit control and, 2. Current failure protection.

MIND READER

After considerable trouble the pastor succeeded in reconciling two women who had been quarreling for years. They met one day in the rectory and shook hands. After an embarrassing silence one of them said:

"Well, Mrs. White, I wish you everything you wish me."

"Is that so," retorted Mrs. White, "who's saying nasty things now?"

GROWING UP

A boy becomes a man when he walks around a puddle of water instead of through it.

Mechanical Dept. Shooting at 200,000 Safe Shifts

A safety achievement which seems certain to hang up an all-time (for all time, that is) departmental safety record is being built by the men of the Mechanical Dept. at the Copper Refinery. Since Feb. 18, 1948, not one lost-time compensable accident has been charged against this really safety-conscious crew. Up to and including Oct. 30 they had a total of 192,708 safe shifts to their credit. Travelling down the stretch to the 200,000-mark, every man in the department is acting as a safety vigilante. And more power to them all! A showing like this reflects credit on every one of Inco's thousands of employees. Pictures above show the men of the Copper Refinery's Mechanical Dept. Not shown are Supt. Bob Rodger and Safety Engineer Lionel Roy, whose smiles of satisfaction were too big for the camera.

C-I-L Starts to Build Plant at Copper Cliff

Construction work began at Copper Cliff October 15 on a plant which will be a monument to the ingeniuty and perseverence of chemists and engineers, as well as one unique in the Canadian economy. It became possible only after 20 years of research and experiment.

The plant which is to nestle in the shadow of Inco's giant smelter is being erected by the Fraser-Brace Engineering Company Limited for Canadian Industries Limited. It will produce liquid sulphur dioxide from smelter gases given off in Inco's operations.

When completed next fall the plant will have an initial capacity of over 90,000 tons of liquid sulphur dioxide destined for use by news print, sulphite pulp and other manufacturers who now have to depend upon elemental sulphur imported from the United States. And since each ton of the liquid product can replace half a ton of imported sulphur the new plant will help overcome the sulphur shortage as well as conserve American dollars.

This will be the second plant at Copper Cliff which for a basic raw material uses nothing more or less than waste fumes from the Inco smelter. C-I-L's chemical plant here has been producing sulphuric acid — often called the "Handmaid of Industry" — from these gases for years. An expansion expected to be in operation shortly will enable production of the acid to be increased by about 60%.

But success in the new project now under way did not come easily. Inco and C-I-L have been working together for years in an effort to find economic uses for the waste smelter fumes. As far back as 1932 C-I-L had proved that liquid sulphur dioxide could be produced from the fumes — but only at a cost which was too great to permit the product to compete with imported elemental sulphur.

Then Inco developed a new oxygen flash smelting process for its operations and the chemists and development men went to work again. This time they were successful. C-I-L built a pilot plant at Copper Cliff and found it was possible to produce at an economic price liquid sulphur dioxide from the new smelter fumes.

A Fort William, Ontario, paper mill tested the new product and found it had technical advantages over elemental sulphur. Decision to build the new plant followed.

PUT THE BOYS IN LINE

Warren Thompson writes to the Triangle from the San at Gravenhurst to say that the picture of the Stobie Pit in last month's issue was just what the doctor ordered. "I'd been trying to tell the other boys just how big those Open Pits were but they refused to believe me until I showed them that photograph. Now they've pulled in their horns. I circulate my copy around the place and everybody is getting a very good impression of the size and greatness of Inco."

Nice to hear from you, Warren, and here's wishing you a speedy return to health.

NO CHANGE

Before marriage a woman waits up for hours for her sweetheart to go home. After marriage she waits up for hours for him to come home.

FIVE MEMORY GEMS

Be brief — politely. Be aggressive — tactfully. Be emphatic — pleasantly. Be positive — diplomatically. Be right — graciously.

Beginning the End of a Cake

Frood-Stobie Mine Athletic Association's entry copped the championship of the Nickel Belt midget baseball league, and good old Eldred Dickie made sure the boys were feted for their triumph. Picture shows Asst. Supt. Bruce King cutting the victory cake at a presentation party in the Serbian Hall, surrounded by some rather eager customers. In the group were Jim Gorday, Chris Graham, Hec'or Sloan, Robt. Dickey, Martin Puro, Norm Rutenburg, Al Armstrong (captain), John Napran (coach), Bob Sauve, Wayne Mason, Roman Dubinsky, Dan Pavkovich, Alex Bodnar, Ken Lynott, Buddy Petrant, Ron Holmberg, Jim Hunter, Del Horan, and, top centre of the heap in the photograph, the Dick himself. Cake and sandwiches for the party were made by Mrs. Dickie, Mrs. Napran, and Mrs. John Gorday.

Ab Elliott Saw Hectic Times in Transportation

When Ab Elliott joined the Transportation Dept. at Copper Cliff as a brakeman back in 1912 the Company was operating about 25 miles of track and five steam locomotives, 50 low side ore dump cars, 40 old 20-ton wooden flat cars and 12 wooden dump cars for hauling roasted ore to the smelter from the roast yard between No. 2 Mine and Clarabelle Station. When he retired on pension Oct. 1 as Supt. of Transportation the Company's system had grown to more than 80 miles of track over which rolled 16 electric locomotives, 500 cars of all types, 700 steel bottom-dump cars maintained by the two transcontinental railways, and sundry miscellaneous equipment, all of which handled upwards of 2,000,000 tons of material per month.

The man at the helm of Inco's vital transportation organization during years of almost uninterrupted expansion was born on Oct. 16, 1888 at Magnetawan, son of a farmer. When he was 16 the parental influence leaned toward making a minister out of him, a career for which he felt no particular aptitude, so he fled to the bush, working for the White Pine Lumber Co. back of South River. He was there only a month when the job petered out so he walked the 36 miles to South River, hopped the train to North Bay, and had the pleasure of refusing a job in the roundhouse at 75 cents a day. He was saving himself for better things. Instead he came up to the Mond Mine to work for a contractor extending the shaft from the 8th to the 9th level; the work paid $2.25 a day and lasted for 11 months.

In 1905 Ab, now 17, moved over to Crean Hill Mine as a helper in the blacksmith shop; when the steel sharpener quit he found himself slugging 10 hours a day to handle the steel for 16 machines. Cobalt was his next location. He spent one year at the Buffalo, cobbing ore — any leaf silver which didn't fall free from a blast had to be chipped off the chunks of rock with a hand hammer. Then he moved to the O'Brien where he operated a small hoist on a shaft sinking contract. He was getting around, was Richard Albert Elliott.

The Sault was his next stop. He worked for five months in the Wright & Connelly Iron Works and then one day he signed a bulletin calling for a brakeman on the Algoma Central Railway. He got the job, soon found himself on the ore run from the Helen Mine to Michipicoten Harbor. Fred Donegan, now divisional supt. of the C.P.R., was checking ties. Ted Myhill and the late Joe Workman, later to become honored Inco men, were working at the Helen Mine. Living conditions were on the rugged side but the boys had lots of fun. The line wasn't kept open in the winter, though, and rather than spend the next few months at the controls of a snow plow, Ab caught the last ore boat from Michipicoten to the Sault. For three months he was a motorman for the street railway, then headed back to Mond Mine where he had his share of hair-raising moments scrambling up the raises to set powder for blasting hung-up muck. The safety precautions left something to be desired in those days.

In August of 1912 Ab hooked on at Copper Cliff to commence the long and successful career which was to lead him into a position of great responsibility in the Company's activities. His first assignment, with the Mechanical Dept., was rivetting on the installation of the old quartz driers in the converter building. Three months later he switched to the Transportation Dept. as a brakeman. In 15 months he was yardmaster. In 1929 he succeeded G. A. Sprecher as superintendent of the department.

The mighty expansion program launched in 1928 was in full swing when Ab took over the transportation helm. The new mill and smelter were under construction, a tremendous project which taxed the Company's services to the limit. Ore started coming in from the Frood. The Transportation Dept. was hard pressed to maintain its regular schedules and at the same time handle construction materials. One day there were 68 cars of structural steel on the Company's tracks. It was all invaluable experience though, because the growth which commenced in 1928 has hardly ever stopped. A relatively small operation suddenly became an industrial colossus and then kept on expanding. The steady demand for greater production, particularly during the war years, and the installation of new metallurgical processes, kept constant pressure on services such as transportation. It was a day and night job, but Ab Elliott loved it, sun or rain, snow or sleet. There are plenty of people to testify to the highly efficient way he handled his responsibility.

Ab was married in 1911 to May Hughes of Bristol, P.Q., whom he met at Cobalt where she was teaching school. She was killed in a tragic accident on Sept. 15, 1950, when they were returning to Copper Cliff from a holiday trip. Ab was gravely injured, and spent nine months in Copper Cliff hospital. Only the skill of his doctors and his own determination pulled him through the crisis and got him around again.

Over 39 Years' Service

Now Ab is at leisure. He's going to live in Lively, close to his host of friends, but he'll spend his winters in Florida. New cars will continue to be a hobby with him — he's had 19 of them so far. Wherever he goes in this district he'll bump into his friends, because they're legion.

INCO FAMILY ALBUM

"Are you ever lucky," a fellow said, "going around and meeting all those nice people." We agreed with him, in capital letters. Recently we visited: *(1)* Mr. and Mrs. John Marshall (Port Colborne) with Gail, 6, and their new television set. *(2)* Mr. and Mrs. Bill Baldwin (Copper Cliff Accounting) with Charles, 11, and Linda, 5. *(3)* Mr. and Mrs. George Halverson (Coniston) with Wayne, 5, Suzanne, 4, and Douglas, 1. *(4)* Mr. and Mrs. Gerald Farnand (Creighton) with Gail and Jimmy, both 5. *(5)* Mr. and Mrs. Stan Dutchburn (Copper Refinery) with Merrilee (9 weeks) and Randy, 3½. *(6)* Mr. and Mrs. Andy Muir (Garson) with James, 9, Sandra, 7, and Diane, 5. *(7)* Mr. and Mrs. Joseph Brouillette (Frood-Stobie) with Marcel, 1½, Maurice, 10, Rachelle, 9, Irene, 8, Richard, 7, Ronald, 4.

Prete Notches Caruso-Miner Tally

Louie Prete sails past the net after firing Caruso-Miners' first goal in their thrilling match with Owen Sound Mercurys, Dominion champions. Down 3-8 in the third period, the local team staged a terrific scoring spree to win 10-8. Prete tallied three times.

Two Rollicking Victories Open Hockey Season

Impressive victories by both Caruso-Miners and Wolves over powerful opposition in a brace of pre-season warm-up matches must have convinced even the sourest skeptics that Sudbury has itself a pair of fine hockey teams and that this winter will be a right merry one from the entertainment point of view.

Caruso-Miners came up with the first triumph to set the fans aglow. In an exhibition match at Stanley Stadium against last year's Allan Cup champions, Owen Sound Mercurys, Leo Gasparini's boys started slowly and, it must be admitted, for the first two periods looked a little shaky on defence and not too polished on their attacking sorties. They were on the short end of an 8-3 count when they finally caught fire in the third period, but from there in they were unbeatable. They scored seven goals to completely humble the mighty Mercs and win the match 10-8.

Then it was Maxie Silverman's turn to show what he and his Sudbury Wolves had to offer. Maxie didn't pick any pushover for his team's debut either — he brought in the Pembroke Lumber Kings, a lineup which has been built to win the Allan Cup next spring. The Wolves went to work with a will, gave a finished performance in every department, won 9-4.

It's much too soon to start thinking in terms of a Dominion hockey championship for Sudbury in 1952, but it seems certain that locally there will be two strong contenders for the title. Hooked up in a league with Sault Greyhounds and North Bay Black Hawks, Caruso-Miners and Wolves will get a full season of tough competition and should be in super shape when playoff time rolls around.

With this sort of hockey as regular fare throughout the winter, and a magnificent new arena in which to watch it, things are very rosy for the railbirds.

The decision of Carusos and Miners to join forces produced a well-balanced club which is largely home-brewed. It has both Tomori and Halverson for goal, and on defence such well-known stars as Danny Linton, Tug Parri, Joe Sauve, Raoul Grenon, and Joe McIntosh. Three combinations which look mighty good up front and Scotty Saunders, Bucky Basso, and Paul Theriault; Louie Prete, Andy Mantha, and Fats Rogers; Claude Watters, Red McCarthy, and Stan Smith. And as this is written the club still has hopes of bagging Vip Pollesel and Ronny Rubic, and also Mike Bukacheski, the ex-Coniston boy who was Owen Sound's leading scorer last year. All told that's a lot of stuff.

Sudbury Hockey Club had to do a lot of importing to fill the ranks of the Wolves, and have been highly successful in their search for top-notch talent. In goal is Jack Donlevy, originally from Kirkland Lake and formerly practice goalie for Montreal Canadiens, who is also a hot baseball player. Two outstanding local bulwarks, Durno Rondini and Gino Zuliani, are signed for defence work along with Winn Mousseau, a reinstated amateur from the Pacific Coast who hails from Powassan. Forwards include Maurice Vaillancourt, the classy Sudbury boy who played for Shawinigan Falls last year after regaining his amateur status; Gordie Heale, ex-Copper Cliff player who has been with Omaha and is now seeking re-instatement as an amateur; Bill "Red" Barrett, originally from Kirkland Lake and a very fast player who was a junior with Hap Emms' Barrie Flyers and performed last year for Sarnia; Ron Castilane, the rugged, fearless Winnipeger who showed last year with Boston Olympics; Marty Burton, local smoothie who starred with the Miners; George Defillce, a re-instated amateur who was pro on the Pacific Coast under Murph Chamberlain; Harry Marchand, the Frood ball player who has been playing his hockey down Windsor way. In addition to all this material Maxie Silverman has come up with a kid line from the Porcupine Camp which is strongly reminiscent of Flynn, McClelland and Bettio; the trio, all fast and heady and full of go, are Jerry Labelle, Darrell McLaughlin and Johnny Mestan. With this splendid roster, plus some other nifty prospects who may yet ink contracts, the Wolves will be going places.

Both Caruso-Miners and Wolves have strong organizations behind them to handle the executive and financial end of the business.

THE FRONT COVER

A dull brooding sky, the trees of Nickel Park almost stripped of their leaves, and a football game on the High School campus compose the autumn scene for this issue's front cover. Snow flurries are clearly indicated. Fortunately for a great many people, the smoke continues to pour out of the smelter's three mighty stacks, weather or not.

MADE THE GRADE

First Mosquito: Why are you making such a fuss?

Second Ditto: Whoopee! I passed the screen test.

Most Valuable Player of 1951

Spike Wormington of Frood Tigers was voted the most valuable player of the 1951 Nickel Belt baseball season. The popular pitcher was the unanimous choice of the coaches and scored a possible 60 points, first time this has happened in the five years that Charlie Roffey has been giving away his annual gold watch. Runners-up were Creighton's Gerry Girard and Garson's George Armstrong. Spike hung up 10 wins against three losses in his mound duties and had a batting average of .351 in 56 trips to the plate. He has been with Frood for three seasons.

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