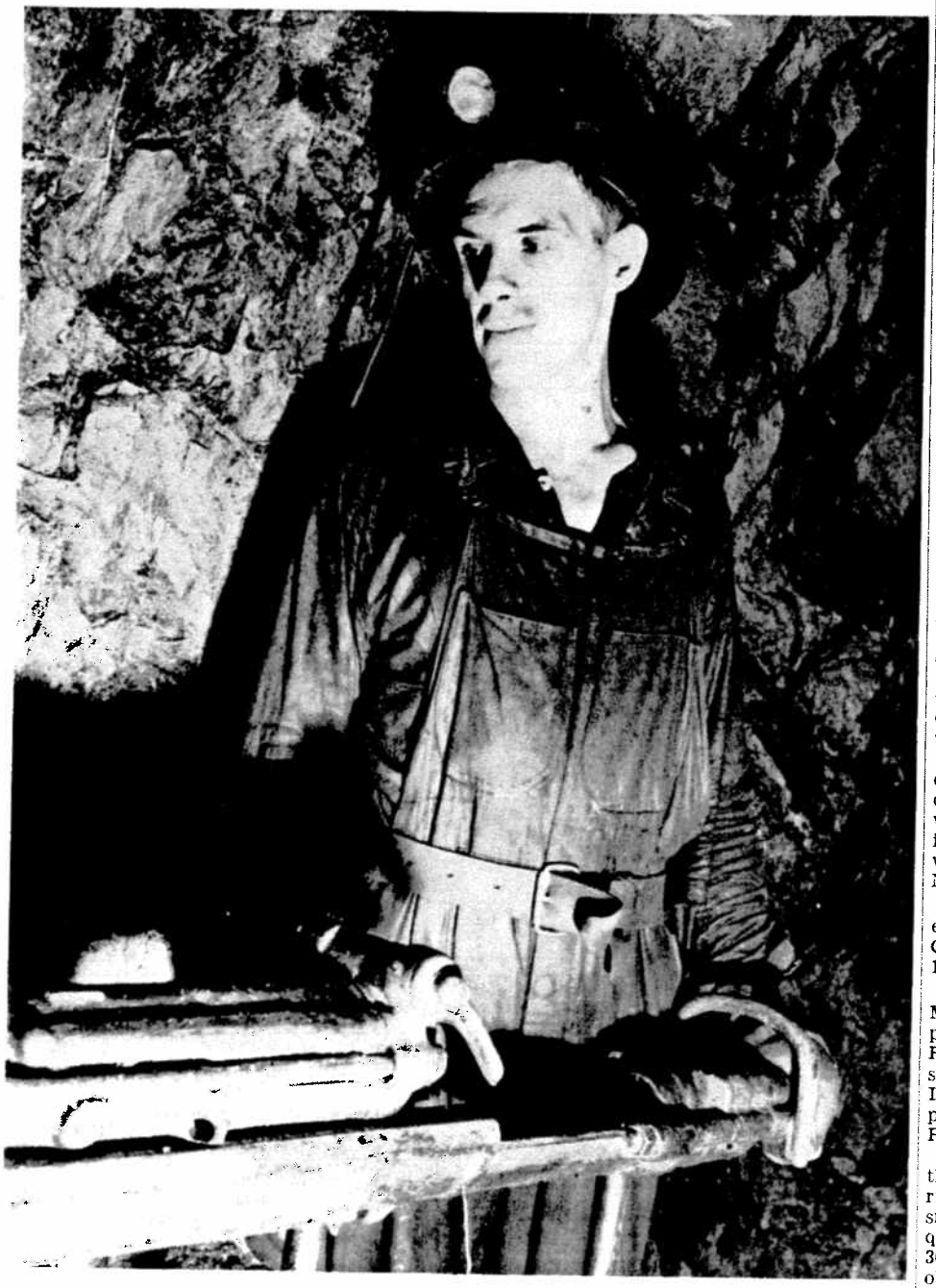
INCO TRIANGLE

VOLUME 7 COPPER CLIFF, ONTARIO, APRIL, 1947 NUMBER 1

Levack Mine Proclaimed Canada's Best in Safety

A Typical Levack Miner



RALPH DAVIDSON AT HIS DRILL ON 16 LEVEL

Levack won the Canadian championship for safe mining during 1946.

Inco mines took the first five places in the annual Ryan regional safe-mining competition for the province of Ontario.

This was the good news announced by Vice-President R. L. Beattie at the conclusion of the annual inter-plant first aid competition for the R. D. Parker shield, held March 27 at Inco Employees' Club in Sudbury.

Applause interrupted Mr. Beattie's statement as he relayed a telegram from the Canadian Institute of Mining and Metallurgy saying that Levack would receive the Ryan Award, donated by the Mines Safety Appliance Co. in memory of the late John T. Ryan and emblematic of the Canadian safety championship for metal mining.

Clean Sweep for Inco

When the vice-president went on to say that the five Inco mines had swept the field as far as the Ryan contest in Ontario was concerned, there was another outburst of applause. It was a big moment for safety-minded Incoites.

To the congratulations of the Institute Mr. Beattie added his own. "I need hardly say that I am proud, and I'm sure that the superintendents of all our mines are proud," he went on, paying tribute to the safety consciousness which is part and parcel of Inco's operations.

Levack's superintendent, popular Charlie Lively, and Neil George, the champion mine's safety engineer, were asked to stand while they received a big hand from the audience on behalf of Levack mine.

"I'd just like to express my thanks to all the boys who helped to win this award," said Charlie Lively, brief and to the point as usual. "I appreciate it very much.

With the lowest frequency of accidents for each 1,000 men employed during 1946, Levack qualified for the coveted Ryan Award, which was won last year by Garson Mine. Standing of the five Inco mines in the Ryan race was: **Levack, Creighton, Frood, Garson** and **Murray.**

Levack's winning frequency last year was even lower than that of Garson in 1945. Creighton was second contender in 1945 also; 1947 may be its year.

An interesting sidelight was revealed by Mr. Beattie, who stated that the average performance of Inco mines since 1941 on the Ryan rating basis placed Frood first, Levack second, Creighton third, and Garson fourth. It was plain that Garson had been "in there punching" all the time. Frood won the Ryan regional award for Ontario in 1944.

Last spring Charlie Lively quietly dropped the hint that Levack was definitely in the ring for the Ryan Award for 1946. Then the smoothly co-operating little camp, picturesquely situated on the Onaping River about 30 miles from Sudbury, went to work. The objective was fixed. And Levack came through with the best mine safety performance in a mining country.

INCO TRIANGLE

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Frood Takes Parker Shield

Challenged by a tricky problem, full of pitfalls and surprises, Frood and Coniston first aid teams gave a convincing display of presence of mind and St. John Ambulance training in the finals for the R. D. Parker Shield at Inco Employees' Club in Sudbury on March 27.

Frood emerged victorious and received from J. R. Gordon, Inco's technical assistant to the vice president, the prized trophy, emblematic of inter-plant annual first aid supremacy.

There was a large crowd on hand to watch the final test, which wound up a series of 13 elimination competitions in which 150 well-coached first aiders took part.

Realistic Props

Realistic props added atmosphere to the hypothetical accident in which four men, trained in first aid, were presumed to be travelling toward Teen Town in their car. Two miles from the town, three highway employees were constructing a safety rail at the side of the highway. One workman was standing at the rail on the opposite side of the road. As the car approached, the left front tire blew out and the car swerved across the road, struck the workman, and crashed into the guard rail.

Correct diagnosis of the workman's injuries revealed concussion, laceration to the forehead, and a fracture of the left femur. The first aid men were quick to give treatment.

A surprise complication of the problem developed 10 minutes after the accident when a second workman entered a nearby shack. A loud explosion was heard and the workman emerged from the shack and dropped to the ground. His "injuries" included lacerations to the face, a laceration to the right thigh with mixed haemorrhage, fractures of the left patella and right forearm, and shock accompanied by fainting spells.

The crowd enjoyed the manner in which the two first aid teams quickly assumed charge of the situation following the accident, administered skillful treatment to the injured man, took in their stride the second accident and had everything under control by the time the ambulance and doctor arrived on the scene from Teen Town. Difficulties of the elaborate test gave full play to the ability and ingenuity of the splendidly coached teams, who earned the admiration not only of the audience but also of the medical men in attendance.

A Difficult Assignment

Judges of the contest, by no means to be envied their assignment, were Dr. H. F. Mowat and Dr. J. H. Stanyon. Oral tests in first aid work were administered by Dr. J. C. Bowen.

The problem, a "meanie" if ever there were one, was prepared by T. M. Crowther, who was also in charge of erecting the props, and served as master of ceremonies. At latest reports he was still in good health.

Patients who earned plaudits for their hardiness in submitting to treatment from both first aid teams were Andy Muir of Garson and David Scott of Copper Refinery. The third highway workman was Wally McIntosh of Open Pit. Timekeeper was Tom Kierans.

A pleasing addition to the program was the appearance of the talented young violinist, Miss Mary Foys, who played several selections clearly exhibiting the talent which has made her a standout in local music festivals. She was accompanied by the noted pianist, Hugo Chatelaine.

In presenting the Parker Shield to the Frood Mine team, J. R. Gordon extended congratulations to R. H. Cleland, general safety engineer, and all members of his department, as well as to all who assisted in staging the annual competition. He presented interesting statistics on first aid training within Inco, stating that since the system was adopted in 1937 the total enrolment in first aid classes has been 5498. Of these 2867 tried the St. John Ambulance examinations, and 2783 were successful.

The Parker Shield, Mr. Gordon said in review, was won by Copper Cliff in 1937, the year it was donated, as well as in 1942, 43, and 46. Coniston won it in 1938, Copper Refinery in 1939, and Creighton in 1940. Besides carrying it off this year, Frood had won it in 1941, 44, and 45.

Before he made official announcement of the Ryan Award results, reported elsewhere in this issue, Vice President R. L. Beattie warmly congratulated both Frood and Coniston first aid teams on their performances.

Lineups of the two finalist teams:

CONISTON: A. Beauparlant (captain), E. Albert, A. McLean, B. Henderson, and R. Snitch (coach).

FROOD: V. Laporte (captain), M. Young, F. Southern, N. Morrow, W. Hertlein (spare), and G. McPhail (coach).

The Awakening

What everybody hopes was Old Man Winter's last spree of the season came on March 25, the day of the big blizzard. Now Spring should be really on the way. This small creek, breaking through its mantle of snow, symbolizes the awakening of nature after her long hibernation.

COYOTE-HUNTING BY AIR

At their next meeting members of Copper Cliff Rod and Gun Club will see a 45-minute movie of coyote-hunting by air in the Dakota badlands. Ed Canfield, veteran commercial pilot whose exploits are featured, has shot 2,500 coyotes from the air, many of them with a shotgun.

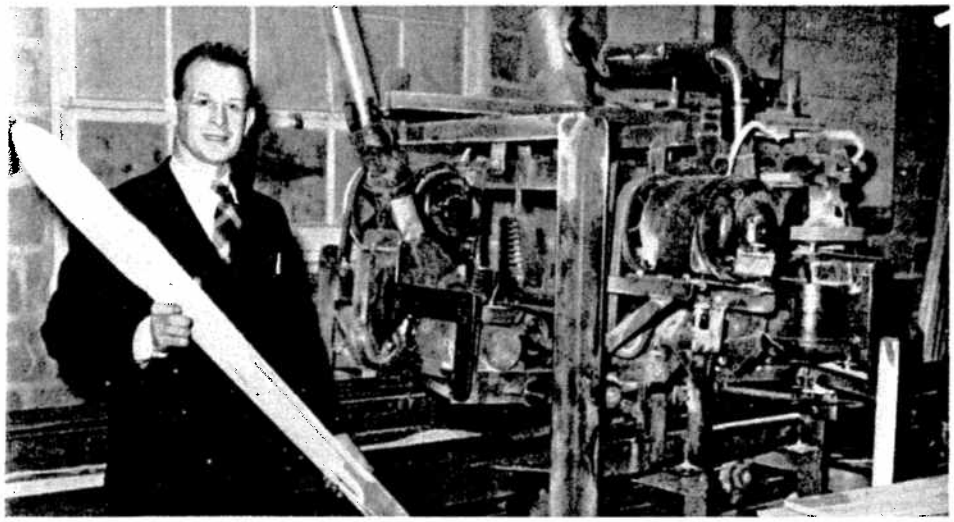
A flourishing organization with a broad program of interest to sportsmen, the Rod and Gun Club now has more than 200 members.

BELL TELEPHONE CELEBRATES

Observing the hundredth anniversary of the birth of Alexander Graham Bell, inventor of the telephone, on March 3, 1847, Sudbury branch of the Bell Telephone Co. staged a most interesting display of equipment which was witnessed by hundreds of Nickel Belt people.

It is interesting to note that a companion Canadian discovery, nickel, plays a prominent role in Bell Telephone's success. Nickel silver enters into the Bell picture in the millions of springs in office equipment, and nickel and copper are in the permalloy core material used in the loading coils, of which there are hundreds of thousands. Pure nickel is used to make the cells for voltage regulation of the storage batteries in Bell power plants.

In Canada 20 Years, Kosti Tulisalo Is Steady Tradesman, Solid Citizen



Skill with his hands, ambition to get ahead, a lively appreciation of his opportunities, and the native frugality and initiative of his race, have made a successful citizen of Kosti Tulisalo. Modest enough by some comparisons, of course, his mark in Canada is nevertheless a credit to him and a challenge to others.

Helped Build Refinery

Kosti came to this country first in 1926 and landed a job with the Fraser-Brace Construction Company. One of the contracts on which he was employed was Inco's refinery at Port Colborne, and this contact gave him the urge to hook up permanently with our organization.

In 1932 he took a year off and returned to Finland to wed the girl of his choice, Elli Niemi of Isokoru. When he came back in 1933 he headed straight for Copper Cliff and signed on with the mechanical department, in the plate shop. He's still there, recognized by his fellow workers as an able and steady tradesman.

Last summer when Toivo Pajala of Sudbury, long-experienced ski maker, decided to erect a factory, he called in Kosti Tulisalo to handle construction of the machinery, the bulk of which had to be built to his own designs. With what material he could buy, and ingeniously making shift for what was impossible to obtain, Kosti in his off hours delivered the goods. Often he worked far into the night, and week-ends, also, were sacrificed to the feverish activity of getting the plant together in time to meet the winter ski demand, but the job was done and the new firm had a very successful first season's operations. Picture shows Kosti standing beside the major unit, the planing machine which cuts the sides and tops of the skis and delivers them ready for bending and finishing. This is his pride and joy, and a very smooth item it is, indeed.

Has Many Interests

Besides various projects like this, Kosti has devoted his spare time to acquiring his own home in Copper Cliff, a duplex building, and two summer camps on Black Lake, complete with the inevitable Finnish steam bath. He's a hustler.

Mr. and Mrs. Tulisalo have two children, Kaarina, age 9, and Raimo, age 7. One of the few things their dad hasn't been able to figure out is how they can drink so much pop and eat so many chocolate bars and still keep their end up at the family dinner table.

LOTS OF OFFERS

"I hear you advertised for a wife. Any replies?"

"Sure. Hundreds."

"Good. What did they say?"

"They all said the same, 'You can have mine'."

ANOTHER YEAR

With this issue the Triangle commences another year of publication.

As the run of the news dictates, there is no room for editorial jubilation, even over such a birthday.

Levack wins the Ryan award, the five Inco mines are tops in Ontario for safe workmanship, Copper Refinery receives buttons for 100,000 safe shifts worked, Creighton awaits jewellers' production of the same prize. Port Colborne crews are rolling up impressive records of days worked without a lost-time accident, and Frood and Coniston stage a great contest for the inter-plant first aid championship.

And what more could this paper ask for its anniversary issue? Safe workers are live workers, and live workers are readers. Any paper wants readers. That may be a cold way of saying it, but it's the truth.

So it's heigh-de-ho for another year of brickbats and bouquets, and do we love them both. Don't forget to write!

Visiting Skip from Manitoba Shows The Way Home to Cliff's Curlers

WINNING rink in the Collins Cup, blue-ribbon event at Copper Cliff Curling Club, was skipped by a "visiting fireman" from Woodnorth, Man. Spending the winter with relatives in the district, Jim Cochrane was welcomed into the besom an' stane fraternity and soon demonstrated his skill at the roarin' game.

He's seen seated at the right in the above photo. In the centre of the "post-mortem" table is the Collins trophy, and perched on top of it is the broom which Jimmy is said to have worn down like a soft-lead pencil as he swept the good ones in to the button. Members of his Collins Cup rink are also pictured, left to right, Jim Rae, Ned Leore, and Vic Rae. Standing at rear left is Bill Jessup, venerable custodian of the club keys.

In a three-way round-robin to decide the Collins championship, Cochrane took the measure of two highly favored skips, Jack Duncan and Hughie Munro, each of whom had a nice collection of scalps at his belt. Munro had seven straight victories to his credit.

Also Took Single Rink

Cochrane left no doubt of his prowess by also heading the winning team in the Single Rink competition. His men were J. R. Clark, E. H. Bracken, and P. R. Leslie.

The twice-victorious skip is now back at his Western home, telling his cronies around the stove in the implement office that "they're not so tough down there at Copper Cliff, after all."

Final event for curlers will be the annual post-season bonspiel, to be held in Stanley Stadium probably during the week of April 21. Rinks from Kirkland Lake, Capreol, and Espanola will likely join the contestants from Sudbury and Copper Cliff.

With an All-Inco Family, Pete Fiorotto Won't Lack For News from Plants

PETE Fiorotto may be through at Inco but he won't lack for news of what's doing in and around the plants. Of his three sons, Louie works at Garson Mine, and Mario and Alfred are both employed in Copper Cliff shops. Then, to make it an Inco family all around, one of his daughters is married to E. Vendramin of the Copper Refinery and the other to M. Fluvian of Frood.

When Pete's final day at the smelter came around last month, a group of fellow employees gathered at the Orford office while Smelters Supt. Dunc Finlayson presented him with a well-filled purse from "the gang". Others in the above picture, front row, M. Kostash, W. Laalo, M. Farrell, F. Charron; middle row, P. Akkanen, M. Cenavini, P. Miluk, T. Shank, R. Uttley, B. Laviviere, R. Saddington, F. Morrow; back row, D. McLean, L. Scanlon, J. McCormick, F. Pigozzo, J. Luptak, E. Piette, A. Moxam, V. Maki.

Came to Cliff in 1912

Born in Italy in 1882 Pete was married there in 1905. He brought his family to Copper Cliff in 1912, joining the Inco ranks that year. At the time of his retirement on pension he had credited service of 33 years and nine months. His wife died in 1918, and he has since lived with his daughter, Mrs. Vendramin.

In 1912 he lost his left arm in an accident, but that failed to hinder either his usefulness or his good nature. As a sweeper on the charge floor of the Orford plant, Pete has been a happy and steady worker, well liked by everyone, and they all wish him pleasure and contentment in retirement.

HOW IS YOUR BRAIN-POWER?

If you want to get mail you don't have to join the Lonely Hearts Club or the Pen Pals Society. All you have to do is challenge Inco people to find more solutions to a problem than C.I.L. people did. Then just lean back and wait for the deluge.

Last month's teaser about how to arrange the eight 8's so you obtain an answer of 1,000 brought in by far the biggest batch of replies we've yet received since we flung discretion aside and went into the Brain Power business.

"I think you're going to need an awful lot of 'ammo'", wrote Don Cowcill Jr. (pappy's at Copper Refinery), referring to our thinly veiled threat of what we'd do to anybody who said they just "8" up the problem.

Two-Minute Operators

Donald Prevost of Coniston also chided us after submitting his answer. "You see, it's easy," he said. "Time to solve—about two minutes," wrote Mrs. David McKillop of 295 McKenzie St., Sudbury. "I ate that one up easily enough, just as soon as I got the Triangle," says John Pezzetta of Creighton Mine. And Lionel Lefebvre of 479 Kehoe St., Sudbury, writes, "Here is your very, very easy puzzle, '8' up in two minutes to equal 1,000."

The big majority of the answers, of course, used this solution:

888
88
8
8
8
———
1,000

But many of our readers sent in some highly ingenious methods. The men of the mines engineering department, for example, brandishing their slide rules and snarling softly, closed in on the unfortunate little riddle and mowed it down about a dozen times. One of their answers:

(8 + 8) (8X8) — [88—(8X8)] equals 1000

E. H. Capstick of the Crushing Plant figured it this way:

$$\frac{8+8\ [(8X8X8)-8]\ -8 \text{ equals } 1000}{8}$$

One of the answers from Don Fraser (metallurgical department, Copper Cliff) was:

([(8X8) ÷ (8X8)] X8) — (8 + 8 + 8) equals 1000

He's A Brain-Truster

Phil Forster of Smelter Research wrote: "I was busy batting out the solutions when a sweet voice floated down the staircase, asking, 'Say, when are you coming to bed.'" He'd reached a total of seven answers, all of them good. In fact, when he started monkeying around with decimal points, cube roots and antilogs, they were too darned good —for us.

Among the others sending in one or more smart solutions were: W. H. Armstrong, plant metallurgist, Copper Cliff; G. H. Furchner, chief chemist, Copper Refinery; Stan Dutchburn, Refinery time office; C. M. Harrison, personnel manager, Copper Cliff; D. J. Dixon, Stobie; Larry O'Brien, Refinery lab; Betty Stewart, Toronto office; Ruth Suckow, 275 Ash St., Sudbury; Mrs. H. Poirier, 293 Oak St.; Bob White, machine shop, Port Colborne; Mrs. E. J. Berton, Minnow Lake; Jimmie Currie, otherwise known as Quiz Kid Currie, Creighton; Mrs. Yvette Howell, R.R.1, Sudbury; C. R. Howard, Port Colborne; A. H. Roesli, Murray Mine; Frank Southern, Frood; H. S. Lewis, New York office.

Well, thanks for all your interest, puzzle fans. We get a big kick out of hearing from you.

Here's The New One

Now for this month's hair-greyer:

Mirandy has baked a luscious blueberry pie. How many pieces, regardless of size, is the most that you can get from it with seven straight perpendicular cuts.

Now, you figure out the question, and, if you say the word, we'll drop around and eat the pie.

GOIN' FISHIN'

Anglers, both old and young, waiting impatiently to get back at their favorite sport, will get a kick out of this portrait of a boy going fishing. He's Frank Scott, son of Frank Scott of the Copper Refinery, and although he's only 5 years old he has already dropped his line in such widely separated waters as Lake Memphramagog, at Newport, Vt., Lake Temiskaming, Lake Nipissing, and the French River Narrows, as well as in various lakes of the Sudbury District.

DRIVER'S DICTIONARY

DETOUR: The longest, roughest distance between two points.

JACK: You must have this to raise a car, and you must raise it to have a car.

PARKING SPACE: Gap in line of cars along the curb, occupied by either a driveway entrance, fire hydrant or gas pump.

ROAD HOG: Any driver ahead of you in a line of traffic.

SOFT SHOULDERS: A good thing to keep your wheels and your hands off while driving.

TRADE-IN-VALUE: An element which many car owners believe should increase, like the quality of wine, with age.

WIPER: An ingenious contrivance for spreading mud in a thin, even layer over your windshield.

Safety-Graph Meeting in Cliff Machine Shop

Here's a typical Safety-Graph meeting, one of the big guns in the ceaseless campaign against accidents in Inco machine shops. Safety Engineer Angus Harrison is seen standing at the right with the graph, a novel type of safety presentation which shows the proper methods of handling material and equipment, stresses the value of good housekeeping in a shop or plant, etc.

The picture was taken at a regular safety gathering in Copper Cliff machine shop.

Front row, B. Leech, J. Kania, R. Joly, J. Lateroute, E. Baxter, M. Fioretto, N. Temple R. Bray, N. Shrigley, J. Levesque, H. Tunney.

Second row, J, Hirdowry, A. Wuori, D. Small, G. Chisholm, R. Tweedle, C. Tremblay, G. Gaetano, A. Leppinen, D. Miatello, J. Metcalfe.

Third row, A. Peltomaki, R. Petryna, S. Bryson, R. Dobson, L. Kidd, J. Van Exan, R. Polano, G. Brose, G. Kuryk.

Fourth row, F. Gilpin, D. Welhan, B. Henry, J. MacDonald, C. Barazzuol, B. Polano, B. Succo, J. McNevin, W. Kuhl, G. Heale.

Back row, A. Graf, L. Sonania, W. Trezise, J. Jordan, L. Germa, E. Volpini, H. Bray, G. Modesto, E. Mossey, A. Sauve, H. Harrison.

Popularity Contest at Levack

Sparked by Lloyd Davis, peppy personnel director at Levack, a popularity contest was staged in conjunction with a concert by the Coniston Band at the Employees Club. Four fair contestants and their managers vied in a five-week ticket selling campaign. Winner was Miss Helen Bobiy, who unfortunately was confined to hospital for surgical treatment when results were announced at the band concert. Her sister Annie accepted her prizes for her. Picture shows Beverly Stromberg, who placed second; Annie Bobiy, and Viola Yonki. Standing are their managers, George Lockhart, Ken Taylor, and George McDonald. Fourth candidate was Eileen Obonsawin, and her manager was Jim McDonald.

ROUGH TREATMENT

He had choked her. She was dead: there was no doubt about it. He had listened to her dying gasp. Now she was cold—cold as the hands of death. Yet in his anger he was not convinced. Furiously he kicked her. To his amazement she gasped, sputtered and then began to hum softly.

"Just a little patience is all it takes, John," remarked his wife from the back seat.

"HE FORGOT"

He was an unusually good worker and very careful about his health.

He brushed his teeth twice a day.

The doctor examined him twice a year.

He wore rubbers when it rained.

He slept with the windows open.

He stuck to a diet with plenty of fresh vegetables.

He golfed, but never more than 18 holes.

He never smoked, drank or lost his temper.

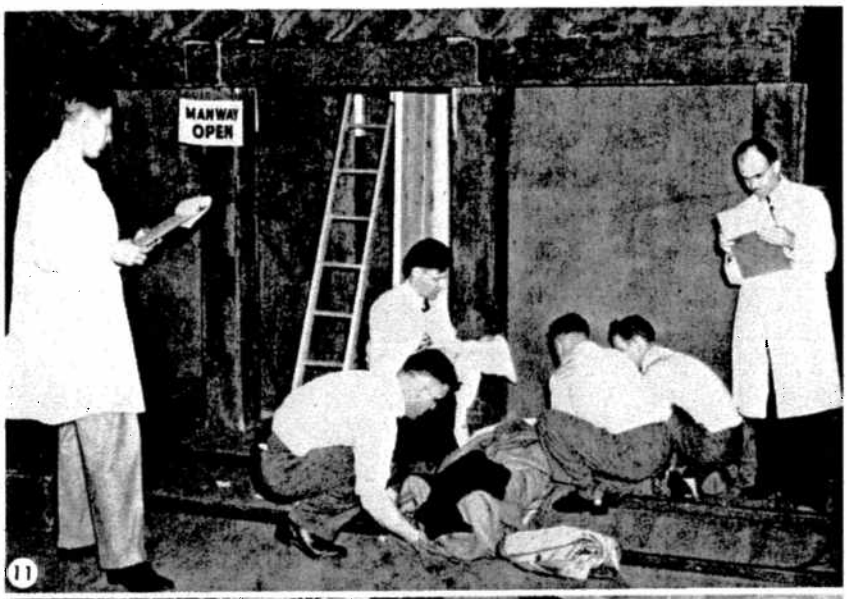
He did his daily dozen daily.

He got at least 8 hours' sleep each night.

The funeral will be next Wednesday.

He is survived by 18 specialists, four health institutes, six gymnasiums and numerous manufacturers of health foods and antiseptics.

He had forgotten that his car's tires were worn to the fabric and just couldn't stand 50 miles an hour.



10 TEAMS IN SEMI-FINALS OF ANNUAL FIRST AID TEST

A total of 10 well-trained teams, four from surface plants and six from mines, entered the lists in the semi-final contests for the R. D. Parker Shield at Inco Employees Club in Sudbury on March 18 and 20.

Coniston and Frood Win

Coniston, with a smooth display of first aid work, earned the right to represent the surface plants in the final, while Frood was equally convincing in winning the similar honor among the mines lineups.

Above are the teams taking part in the semi-finals, photographed just before they went into action:

1. Murray Mine: H. McLelland, captain; G. Geddes, L. Charron, E. Laframboise. (Coach, A. Bazzo; spare, P. Farmer).

2. Levack Mine: W. Petersen (captain); D. White, V. Mihajic, M. Hanson. (Coach, Dr. W. C. Cowan; spare, W. Sproule.)

3. Garson Mine: V. Stone (captain); B. Spencer, R. Moir, A. Muir. (Coach, O. Matson; spare, L. Tulloch.)

4. Frood Mine: winners of underground semi-final: V. Laporte, captain; M. Young, F. Southern, N. Morrow. (Coach, G. McPhail; spare, W. Hartlein.)

5. Copper Cliff: P. Forster (captain); W. McNab, L. Scanlon, A. Johnstone. (Coach, J. Perras; spare, W. Basso.)

6. Coniston, winners of surface semi-final: A. Beauparlant, captain; E. Albert, A. McLean, B. Henderson. (Coach, R. Snitch; spare, A. Rivard.

7. Open Pit: G. Passi (captain); M. McNichol, F. Boscariol, J. Turton. (Coach, B. Wotton; spare, C. Gatti).

8. Copper Refinery: F. Scott (captain); G. Walsh, J. Latreille, C. Smythers. (Coach, G. Hubbard; spare W. Toleck.)

9. Creighton Mine: M. Davies (captain); A. Matson, P. Bugg, C. Woodward. (Coach, G. Curry; spare, G. Smith).

10. Stobie Mine: P. Crofton (captain); G. Romelli, F. Dubery, A. Tyreman. (Coach, W. Young; spare, B. Richards.)

Struck by Falling Timber

Tricky first aid problems were set for both tests by the Safety Department. In the underground semi-final the teams had to minister to a miner who had been struck by a piece of timber falling down the steel chute of a manway in a square-set stope area. The patient was Leo Frappier and he was "suffering" from a fractured right jaw, fractured ribs and left elbow, arterial haemorrhage, and a wound in the right arm in which a

Refinery Workers Get Safety Buttons

foreign object was imbedded. Judges were Dr. B. F. Hazelwood and Dr. W. A. Brown. Oral tests were conducted by Dr. J. Bromley. In the 11th photo of the above layout the Creighton Mine team is seen in action.

Jumped from Window

The surface plant teams had an equally difficult problem. On a dark and rainy night the "victim," H. Everett, had jumped through a second-storey window over a drug store on to a concrete sidewalk. He was unable to speak and had received a jagged laceration of the upper right arm from shoulder to elbow, severe shock, and simple fractures of the right femur and left tibia. Judges were Dr. A. Forester, Dr. J. H. Stanyon, and Dr. J. C. Bowen. In Photo No. 12 the Copper Refinery team is busy with its solution of the test.

BARBARA ELIZABETH

Mr. and Mrs. Norman Miles of Frood take a certain amount of pride in their cute young daughter Barbara Elizabeth, 20 months old.

NO DOUBT ABOUT IT

A Chinese had a toothache and phoned the dentist for an appointment.

"Two-thirty all right?" asked the dentist.

"Yes," replied the Chinese. "Tooth hurtee all light. What time I come?"

Report Expresses Thanks of Board

"The Board of Directors of Inco "gratefully acknowledges the loyal and efficient services rendered by all of the Company's employees during 1946," President Robert C. Stanley stated in the annual report of the Company, issued last month.

With regard to the retirement system for the benefit of employees and the contributory sickness and non-occupational accident insurance plans, Mr. Stanley stated: "The Retirement System, which has been in effect since January 1, 1928 and which is financed wholly by the company and its principal subsidiaries, provides service and disability pensions and death benefits for all member employees. Trust Funds established in Canada, Great Britain and the United States implement the Retirement System under the program approved by the shareholders.

Substantial Reserve

"The balance of the Funds in the hands of the Trustees at the year-end was $22,037,973. In addition to the amounts contributed to and held by the Trustees, government bonds and other marketable securities of $13,286,112 are held in respect of the Retirement System directly by the Company under the control of the Board of Directors.

"During the year an aggregate amount of $557,446 was disbursed from the Trust Funds and the Reserve in payment of 818 pensions and 109 death benefits. The contributory sickness and non-occupational accident insurance plans, which are distinct from the Retirement System, were continued in effect and cash benefits were paid to employees in 7,725 cases."

NO RUNS, NO WEAR-OUTS

Ladies, your hosiery problems may soon be solved with stainless steel stockings. It is said that runs and wear-outs will be practically impossible in these unbelievable stockings.

It is idle to talk of peace while man is still at war with wisdom.—Maurice Maeterlinck.

Copper Refinery workers are now proudly sporting in their lapels the triangular Inco safety buttons which indicate that their plant has completed 100,000 consecutive shifts without a lost-time accident. The Refinery qualified for the award last year, and actually completed 156,337 consecutive safe shifts before their run was broken on Dec. 13. Inability of the jewellers to make delivery sooner accounted for the delay in presenting the pins to the employees.

All departments of the plant were represented at a token presentation ceremony, held in the Refinery cafeteria on March 4. The safe shift buttons were turned over by Supt. Russ Hewgill, who extended his congratulations to the Refinery workers on their splendid record, as also did R. H. Waddington, general superintendent of refineries, and R. H. Cleland, general safety engineer.

The above photograph was made during the ceremony. Those present were:

R. Slijepcevic, P. Slijepcevic, C. Wilson, F. Mayville, D. Sauve, K. Kangos, E. Bulfon, N. Scinto, E. Coulombe, C. Crouch, H. Whitton, E. Rabeau, B. Armstrong, D. McDonald, L. Young, P. Coulombe, P. Larocque, Sr., A. Wilcox, R. Price, A. Noble, A. Labbe, S. Campbell, H. Leblanc, N. Guerin, A. Welblund, R. Rodger, L. Kitchener, C. Smythers, W. Maltby, J. Juhas, J. Katulich, J. Hrytciuk, J. Hughes, P. Wabegijig, G. Bulfon, J. Dacyk, W. Koth, M. Luck, R. Mornan, J. Duncan, J. Mechan, R. Lipscombe, D. Cowcill, C. Beach, Miss H. Ledingham, R. Johnson, G. Shute, Mrs. D. Ward, J. Bischoff, G. Furchener, A. Smith, G. Hubbard, H. Greenfield.

AWAIT BUTTONS

As soon as they are received from the manufacturers, Inco safety buttons will be presented to employees at Creighton Mine who assisted in rolling up 100,000 consecutive shifts without a lost-time accident.

The record was established between July 3 and Dec. 6, 1946, and the actual total of safe shifts was 100,168.

That's the stuff to give 'em, Creighton!

The secret of success is making hay with the grass that grows under other people's feet.


LEVACK WINS THE RYAN
YOU DID IT BOYS..
CONGRATULATIONS

1

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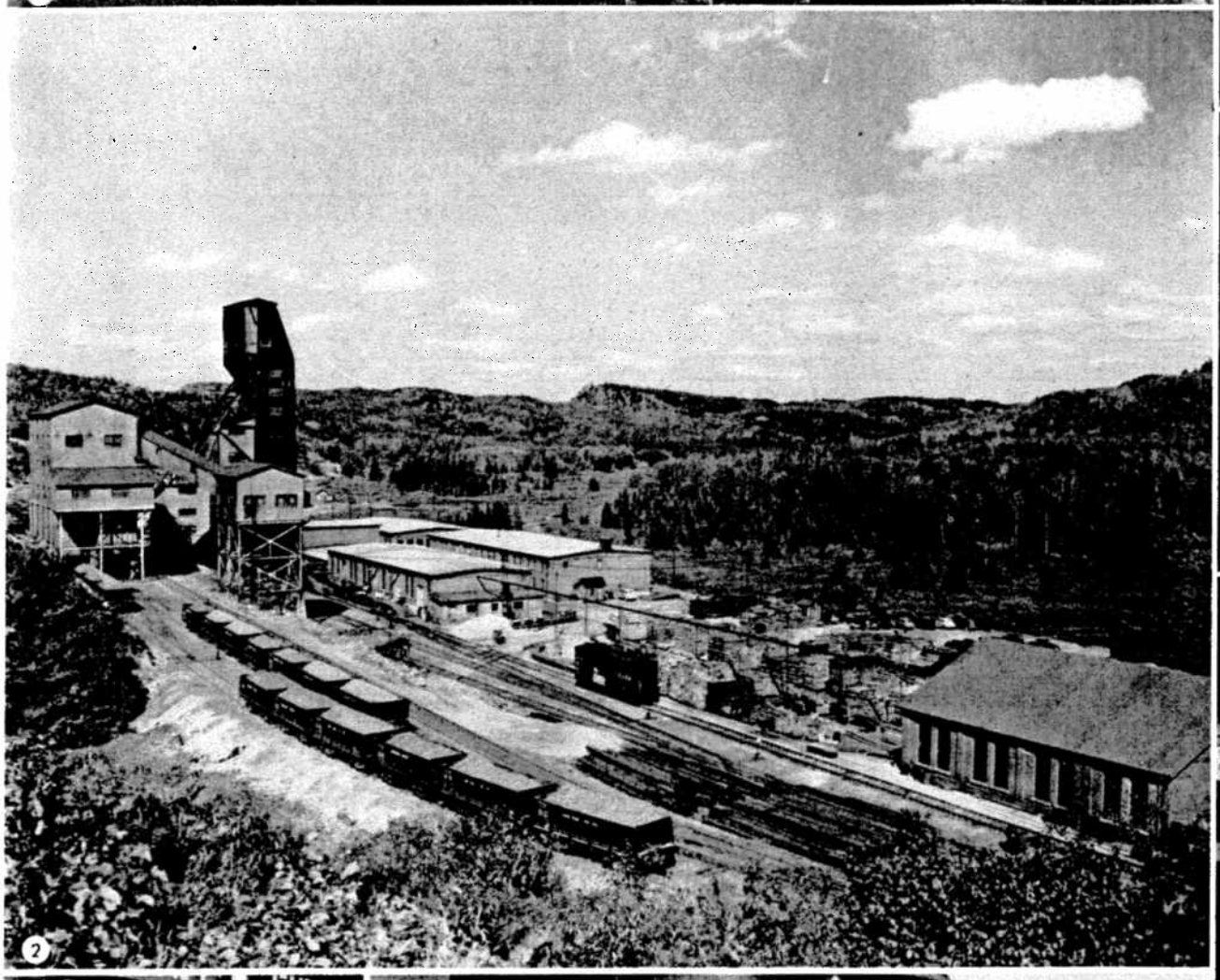

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FULL OF
FULL OF
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SAFETY'S
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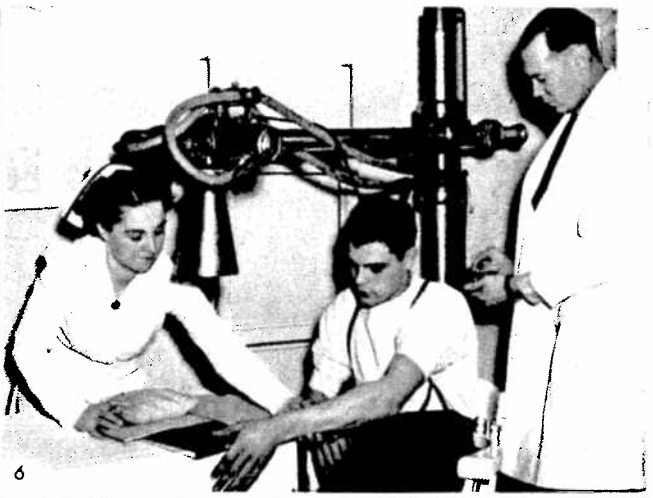

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How Levack Won the Ryan

How does a mining camp go about winning the Ryan Award for safety?

That's a question which is probably in many minds this week as the news spreads through the country of Levack's triumph.

As it did last year at Garson, the Triangle camera sought the answer at Levack. The answer is the same; the Ryan Award is won through the "everlasting team-work of every blooming soul."

Co-operation, by the day and by the hour, between every department of the mine, backed by a wholesome respect in every individual for the value of safety, is what does the trick.

Let's take a quick look at Levack mine and some of the reasons why it was Canada's safest in 1946:

1. In the first place, here's the sign which broke the glad news to the men. As they emerged from the "dry" on their way to the collarhouse, this was the bulletin that greeted them. It was the pay-off on a year of solid effort and careful workmanship.

Has Picturesque Setting

2. And this is the plant which led all Canadian metal-mining operations in safety. Discovered in 1889 by James Stobie and first operated in 1913 by the Mond Nickel Company, the Levack mine became an Inco property in 1929 through the merger of Mond and International Nickel. In December of that year the buildings at No. 1 shaft were destroyed by fire. They were rebuilt in 1930, but the mine did not operate again until 1937. In 1938 No. 2 Shaft was sunk and new surface buildings constructed; it is this plant which is pictured above. Cars of ore, ready for shipment to Copper Cliff, appear in the foreground. At the right is the framing shop, and immediately in front of it the timber yard. Warehouse, office building and changehouse, and part of the collarhouse are seen beside the headframe, to the left of which is the rockhouse.

About 30 miles from Sudbury, and slightly more than a mile from the mine, the village of Levack is built on a sand plain beside the Onaping River. The surrounding country is ruggedly beautiful, and abounds in excellent fishing waters and hunting grounds. Four miles from the village are High Falls, dropping a total of 100 feet, and seven miles away are Onaping Falls with a total drop of 200 feet.

"Tall and Short Of It"

3. When you say "the everlasting team-work of every blooming soul," you mean among other things the old employees and the young employees, the short men and the tall men. Here's an example of those two; on the left is a veteran Levack miner, Fred Kolenc; his tall buddy, Frank Senarchuk, signed on only recently.

4. It's long been recognized that happy homes have a direct influence on plant or mine safety. A contented man is usually a safer workman. This glimpse into an average Levack home certainly indicates that contentment reigns supreme there. Another safe day's work behind him, Adam Frohlick reads a bedtime story to sons Ronnie and Bill, while young Bernard relaxes in his mummy's arms. Adam is a stope boss on 12 level in the mine.

5. It's hard to say just where safety consciousness is most important in a plant, at the top or at the bottom of the employment ladder. Probably the need is as vital in either place, as well as on every rung in between. Mine Supt. Charlie Lively (seated) and Mine Foreman Casey Jones, seen here planning an underground development,

(Continued on Page 11)

The Men of Levack Mine

In photographs on this and the opposite page are the people who won the safe mining championship of Canada in 1946. We wish they could be clearer to Triangle readers, but the chore of reproducing all those faces in this small space is more than the photographic and engraving laws allow. Suffice it to say that they were a happy crew when photographed (no wonder) and an easy assignment for shutter-shark Bill Couture and his big lens.

You'll be wondering about the fellows in the white hats. They're the Martin Callahan shift, and they won the Lively Award for August. The Lively Award, a very smart shield donated by the Levack mine superintendent, is for monthly safety competition. Special safety promotion stunts, such as those white hats, get credits. Proper working places count too. Judges are Mine Supt. Lively, Mine Foreman Jones, and Safety Engineer George. The competition was inaugurated in June of 1946 and had more than a lot to do with that Ryan Award.

Centred in one of the groups is a shield. That's the Lively Award, and the outfit holding it is the Stan Snider shift, which won it three times.

How Levack Won

(Continued from Page 9)

pulled their full share of the load in Levack's Ryan win.

6. No man in his right mind yearns for hospital treatment, but it's nice to know that skilled medical people and modern facilities are close by if the occasion arises. Levack has a very smart little hospital, completely equipped for emergency cases. In this demonstration of the X-Ray machine the patient is R. Purvis and the attractive nurse is Ruth Stockdale, with Dr. W. C. Cowan operating the unit.

Stunts Spread Safety Gospel

7. As part of the continuous safety promotion at Levack, the various levels in the mine vied with each other in stunts to spread the safety gospel. Here Alfie Mallette, of 14 West, parades through the clock alley as the men punch in for the day. His sandwich board proclaims to Nelpha Lahay that he's full of vigor and vim, and this he demonstrates by carrying a 75-lb. sinker, an 8-lb. sledge, and sundry other items. Because he is a safe workman he's sound in every limb and able to carry the freight like that. Demonstrations such as this earned points in the monthly competition for the Lively Award for Safety.

8. Every job in the mine is periodically demonstrated the correct way (which is the safe way) to group of miners, both old and new. Its invaluable instruction to the new man, and it's a refresher course for the old-timer. In this picture, a demonstration of blasting in a square set stope is under way. W. Sproule is making a spitter for lighting the blast. Beside him are G. Pashko, A. Frohlick, and G. Clarke. Standing are W. Wass, W. Kereluk, M. Pocrnich, G. Descoteaux, and W. Linnik.

9. Here's an underground demonstration of the right way to bar a chute. M. Dusick holds the bar. Kneeling are F. Bulback, D. Runions, H. Bouffard, J. Duval, P. Vaillancourt, B. Broda, J. Kay, J. MacIntosh, L. Villeneuve. Standing are A. Cutting, G. Cole, D. Latondress, J. Brandle, W. Ceaser, E. Kelly.

10. How to re-rail a Granby car without risking an injury is being shown here. S. Snider watches the demonstration; the "teacher" is R. Huneault; the "student" is A. Cucksey. Kneeling behind them are R. Cote, J. Woodsworth, L. Chevrier. Standing are F. Dubois, P. Trottier, A. McPhee, S. Montpellier, B. Shemly, A. Kaczmarski, L. St. Onge, A. Duquanne.

"It's In The Family"

11. At Levack safety is not only in the mine, it's in the family. Here's a father-and-son combination that helped put the mine over the top in the Ryan contest. At left is W. J. Hykin, the pappy, and with him is his son Bill.

12. Frequent entertainments at the Employees' Club, often featuring the local talent with which the camp abounds, play their part in fostering community spirit and co-operation, on which successful safety promotion is founded. Picture shows part of the capacity crowd at a recent gathering in the club.

There you have them—just a few of the reasons why Levack was the safest mine in Canada in 1946.

Not bad reasons at that, are they?

Male Section of Heavenly Choir?

If there were only a few big white clouds floating around in the background, and the odd harp dangling over the railing, you might easily think this angelic group was the male section of the heavenly choir. The picture was made at Inco Employees Club during a Parker first aid contest, and these were Copper Refinery rooters: Lionel Roy, "Whit" Whitton, Alex Crossgrove, Al Welblund, Mel Luck, Jack Duncan, and Joe Bischoff.

LEGION AND HIGH SCHOOL PROVIDE THE SILVER LINING

"Can they take the South?"

So read the caption over a picture of Copper Cliff Redmen in last month's Triangle. And the cutlines went on to say that the Redmen were practically a cinch for the N.O.H.A. junior championship.

Well, you can't hang a headline-writer for being loyal to the local team, but from here in it looks as if all prophecies in this paper will be handled by our Second Guess Dept.

Once the remorseless wheels of fate got a-grinding, it turned out that the Redmen couldn't take the North, much less the South. Running smackeroo into the heavier Porcupine Combines, who back-checked them right into the ice, the Redmen dropped the N.O.H.A. series one game to four. The Cliff kids looked good in spots, but the Porkies seldom let them get organized for those lightning-like scoring sorties which completely routed the Soo. And the Cliff defence couldn't stand up against Combines' powerful drives on goal.

Hollinger Too Good Also

Thus the Nickel Belt's junior hopes went poof. So also did the dreams of anybody in this bailiwick who was toying with the idea of our garnering a senior title. Sudbury Wolves, despite the coaching of Allan-Cupper Red Stuart and the executive support of such notables as W. E. Mason and F. M. Donegan, came a cropper when they attempted to hurdle the Hollinger Greenshirts. It was much the same story as with the juniors. Wolves were up against a better team, and they also limped from the course with only one victory in five heats.

Still another Nickel Belt lineup failed to get past the North in its title hunt. After taking the measure of the Sco in the juvenile playoffs, Sudbury Grads were snowed under by South Porcupine Red Wings.

But all these dark clouds had a silver lining, in the form of Copper Cliff High School. After battling their way to the top of the heap in a hot local inter-scholastic league, the Cliff studes went on to trim Scollard Hall of North Bay in the finals of a four-team playoff at Stanley Stadium.

Then Coach Bert McClelland led his collegians down the pike to Kingston. There they quickly won recognition as "one of the smartest young hockey teams seen here in years." They brushed aside Belleville High School, 21-2, with the line of Yacker Flynn, Tatter McClellan, and Eddie Martel punching in the basketball total of 14 goals. In similar fashion they disposed of Cornwall Collegiate and came home with the secondary school championship of Ontario.

The Cliff lineup: Organ; Byers and Sauve; Flynn, McClellan and Martel; Z. Toppazzini, J. Toppazzini, Pollesel, Core, Bennett.

Legion Took N.O.H.A. Title

Another nice slice of silver lining to the black clouds of senior-junior gloom was provided by the Canadian Legion team, master-minded by Frankie Graham and injected with Al Welblund's enthusiasm. After finishing out the season in Nickel Belt senior company, the Legion entered the intermediate N.O.H.A. playoffs, polished off North Bay, and then trimmed Rouyn Flashes at Kirkland Lake for the northern championship. The Legion played great-hearted hockey to earn their title. In the second game with Rouyn they overcame a three-goal deficit and won out 6-5.

The Legion lineup: Silverson; Miles and Vaillancourt; Hamilton; Nazar and Knapp; Vanclieaf, Horeck, Keaney, Rogers, Prete, Vannier, McNabb.

That brings us to the midget category. Once again Stanley Stadium is to be the scene of the all-Ontario playoffs for the small fry. Don't pay no never mind to us, but the Copper Cliff squirts should cop the laurels.

SEEMS TO FIT, TOO

After what Hollinger Greenshirts did to Sudbury Wolves in the senior N.O.H.A., centre-man Jim Dewey is apparently considering a change of weapons for next year. The camera caught him getting the feel of a different type of stick, in one of the mine collarhouses. Moose Jaw papers please copy.

LeBorgne Did Fine Job

In the regular Midget N.H.L. schedule, operated smoothly and efficiently at the Stadium all winter by Yves LeBorgne, with some 175 youngsters taking part, Rangers emerged victorious in the senior section playoffs, defeating Detroit in the finals for the Robert C. Stanley Cup. The Ranger lineup: Toppazzini, McClellan, Gatien, Farrell (goal), Kavanaugh, Vendramin, Cleland. Top scorers in this section were Harry Bellay, Jerry Toppazzini, and Cherry Nicoli, and Morris Farrell was the leading goalie.

Among the farm teams in the midget setup, playoff honors and crests went to Detroit: Evans (goal), Taus, Prescott, Strong, Neary, Peroni, Dozzi, Holden, Woods, Merrifield, Rondini, Bassinet. Star rating in this section went to Uguccioni, Prescott, Strong and Sleaver.

In minor farm company it was Rangers for the championship: Livingstone (goal), Pollesel, Kent, Crossgrove, Wilkie, Leclair, Bennett, Meaden, Williams. Ace performers among the minor farmers were Pollesel, Meaden, and Williams.

And that's the hockey story for the 1946-47 season. We didn't catch so many trophies, but we had a lot of fun.

HOW TRUE! HOW TRUE!

At a recent Safety meeting, the speaker had given many reasons why Care should be taken and Safety constantly observed.

He concluded by asking one of the audience—an Irishman—to name six of the most important reasons why a man should always observe Safety rules while at his work. "Me-self, the four kids and Bridget" was the reply.

$1,000,000 For New Houses in Copper Cliff

A $1,000,000 housing program in Copper Cliff will be launched by International Nickel Company as soon as the frost is out of the ground.

Contracts for pouring foundations, laying water lines, and grading streets were let last week.

The housing shortage in the Sudbury District, said to be more acute than ever before, has prompted the Company to take the initiative in providing more homes for its employees, despite peak construction costs and difficulty in obtaining materials.

Also Enlarging Schools

In addition to the $1,000,000 appropriation for housing, additions to Copper Cliff public and high schools will be erected.

"We are aiming at having the entire program completed by next fall," S. A. Crandall, acting chief engineer, told the Triangle. Coming on top of the big expansion program at the smelter, the new housing project has the engineering department hustling harder than ever, but they're on top of their job.

Largest block of the new five and six-roomed houses will be built on Nickel St., which branches off Balsam St. a short distance north west of the underpass. This street was originally laid out about 25 years ago, and some 30 houses were erected on it which have since been torn down.

On the opposite side of Balsam two new streets will be laid out. One is to be called McNevin St. in honor of the late "Sandy" McNevin, one of Copper Cliff's first councillors, who operated a shoe repair shop in the town; the other is to be named McKeen St. in honor of the late "Dad" McKeen, another Cliff old-timer.

Other groups of new homes will be constructed on Evans Road, Orford St., Finland St., Poplar St., and Cobalt St.

In general the new houses will be of frame construction, with insul brick siding or brick veneer on the lower storey and shingles or clapboard on the upper storey.

Modern Installations

They will be completely insulated and will be equipped with air-conditioning heating plants, thermostatically controlled and having automatic humidifiers through which all air will be filtered. They will have hardwood floors, plastered walls, and will be trimmed with B. C. fir, stained and varnished.

Concrete for the foundations will be mixed with a special ingredient to make it as dense and impervious to moisture as possible.

COPPER CLIFF

Lionel Bourcier (Army).

FROOD

Maurice Trottier (Army).

GARSON

Elmo J. Patching (Army).

LEVACK

Geo. B. Edwards (Army), Frank Raducha (R.C.A.F.).

Gomoll Family Splits $10 Booty

A varied and highly creditable collection of snapshots made the task of judging the "Picture of the Month" contest a difficult one for the staff of Dickie's Drug Store, guest adjudicators.

There were no "show" entries, but the group was unusually uniform. So Dispenser Dickie took a bottle of sulpha pills in one hand and a flit gun in the other, offered a short prayer for divine guidance, and let his practised film judge's eye do its best.

Results of this novel but effective system were as follows:

First Prize, $10.00, Carol Gomoll of Garson Mine. Subject: her sister Terrie and the family pup, Laddie. Background, the Garson school. And a very clean, attractive snapshot, too.

Honorable Mention. $1.00, Mrs. Wm. Hanson, Levack. Subject, her granddaughter Glorianne Lewkoski and fishing line. Scene, Ministic Lake, Levack.

Honorable Mention, $1.00, Fred Parkinson, Copper Cliff Concentrator. Subject, Niagara Falls. Time, his summer holidays last year.

Here's a hearty thank-you to all who sent in entries. Better luck next time for those who didn't make the money. And thanks too to Dispenser Dickie and his System.

Judge for next month: George Dietrich, manager of Liggett's Drug Store.

And let's have some nice snow scenes taken after the big blizzard, eh?

Tommy Reid is Sorely Missed

A "happy warrior" is Tommy Reid, who retired on pension April 1 at Port Colborne Refinery. The stripping floor will miss his cheerful smile.

Born in 1882 in Lancashire, England, the son of a joiner, Tommy came to Canada in 1910. Behind him lay a broad experience in foundries and cotton mills.

First he headed for Vancouver, went through a succession of jobs which included a stint in a laundry, and was johnny-on-the-spot when the First Great War was declared. He enlisted in the 47th infantry.

Tommy arrived at Port Colborne in 1919 and has been there ever since. During the 1922 layoff he put in the time at the cork works.

In the refinery he served in the power plant for some five years, then transferred to No. 5 Building on the stripping floor, where he did his stuff until his retirement.

A steady and popular worker, he was admired for his efficiency by men half his age.

Married in 1905, Tommy suffered the bereavement of his wife in 1946. He has one daughter, Marjorie, who is attending high school.

Active as a cricket, he has several offers of jobs to consider. When he isn't thinking them over he muses about his early days when, as a boy of 11, got his first job. Then he spent half a day at school and half a day at work, for which he drew 50c per week. At the age of 13 he was working full time, and of course his wages were increased to $1.00 per week.

Tommy has no gripe against the present-day system which treats youngsters in a vastly different way from when he was a boy. In fact he's all for it.

As for the Nickel Company: "They've treated me fair and square," he says in his good Lancashire way, "and I'll always be their friend."

Good enough, Tommy Reid. The Nickel Company and all your fellow workers will always be your friends, too.

Fraser, French Vice Presidents

H. J. Fraser and H. J. French were elected as additional vice-presidents of the International Nickel Company, Inc., Robert C. Stanley, president, announced on March 5th.

Mr. Fraser has been assistant vice-president since June, 1943. Both he and Mr. French are assistant vice-presidents of The International Nickel Company of Canada, Limited, the parent company.

A native of Brockville, Ont., Mr. Fraser in World War I served in Siberia with the Canadian army. His first association with International Nickel was in 1920 when he was employed at its Port Colborne refinery during summer vacation.

He joined the Huntington Works of the International Nickel Company in May, 1923, following his graduation from Queen's University. After serving some years in various technical and operating capacities, he was promoted to the New York office in February, 1935, becoming assistant manager of the production department. He has been assistant vice-president of both The International Nickel Company, Inc., and the parent company since June, 1943.

Mr. French, after receiving the degree of metallurgical engineer from the School of Mines, Columbia University, in 1915, served with the U. S. army during World War I. In 1919 he joined the metallurgical staff of the U. S. Bureau of Standards in Washington, subsequently becoming assistant chief of the division of metallurgy.

He became associated with International Nickel in 1929 and was for years in charge of alloy steel development. Assistant manager of the development and research division since September, 1943, Mr. French was recently appointed an assistant vice-president of the International Nickel Company of Canada, Limited.

CUSTOMS EAST AND WEST

A sailor, after placing some flowers on a comrade's grave in the Far East, noticed an old Chinaman placing a bowl of rice on a grave nearby, and asked: "What time do you expect your friend to come up and eat the rice, Charlie?"

The Chinaman replied with a smile: "Same time your friend come up to smell flowers."

SHARP-EYED READER

"Make up your mind!" advises H. S. Lewis of the New York office in a memo to the Triangle.

Sharp-eyed reader Lewis noticed in our last issue that in the "Romance of Nickel" chapter the population of Sudbury was given as 32,000, but on the side of the Chamber of Commerce float picture in the winter carnival parade it was announced as 40,000.

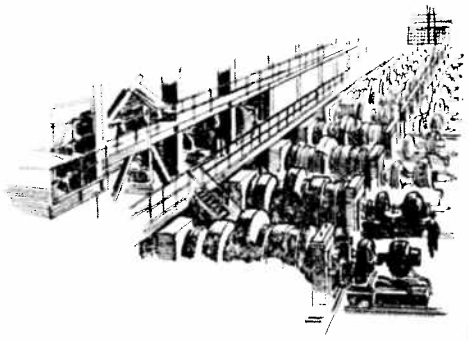
Be reasonable there, H.S. old boy. You know how Chambers of Commerce are. Seems to us we've read some highly conflicting reports on the weather in California, for instance.

The Romance Of Nickel

(Continued from Last Issue)

Crushing and Grinding

The ore, as it comes from the mine, is composed of rock and a number of minerals which contain nickel, copper, iron, sulphur and a small quantity of precious metals. The purpose of crushing and grinding is to break the



Battery of 34 Grinding Mills

particles of rock away from the mineral sulphides.

In a building several times as large as a modern hockey stadium, giant cone crushers smash the lumps of ore to one-quarter inch diameter or less. Then in long batteries of grinding mills the ore, now mixed with water, is ground as fine as fine sand.

Flotation

In long rows of tanks, by a specialized process, the mineral particles are "floated" off, while the rock particles settle to the bottom. Then in other tanks the copper sulphides are

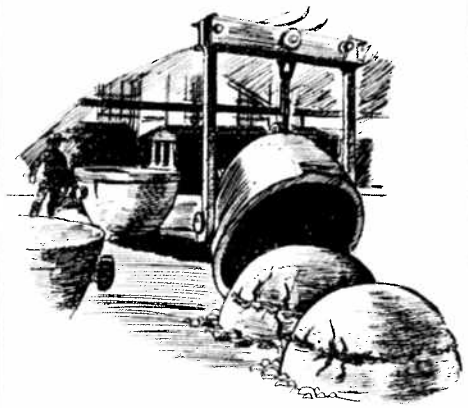
Flotation Tanks

"floated" off and the nickel sulphides settle to the bottom. From this separation process two products emerge, one of which contains most of the nickel and some copper the other containing most of the copper and some nickel. Then in settling tanks and filters most of the water is removed and the remainder, looking like black mud, goes to the smelter.

Charging Matte To a Converter

Smelting

In the huge smelting plant, the nickel concentrate is roasted in great hearth furnaces to get rid of most of the sulphur. It is melted in reverberatory furnaces, and most of the impurities skimmed off as slag. Still in a molten state it is conveyed in huge ladles and poured into the converters. Sand or quartz is added and air is blown into the mixture. This burns off more sulphur and gets rid of the iron.



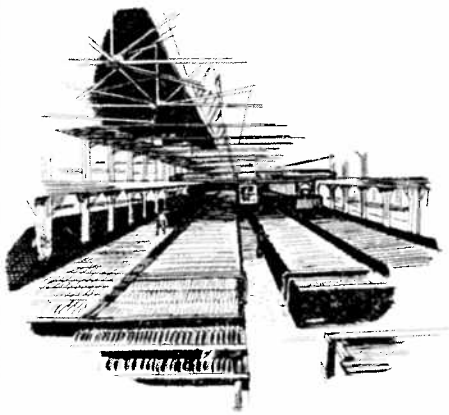
Separation By The Orford Process

What is left, now known as Bessemer matte, is separated by the Orford process into nickel sulphide and copper sulphide. The copper "tops" are further purified and transferred in the molten state to the International Nickel Company's "Orco" copper refinery nearby — the largest copper refinery in the British Empire. The nickel "bottoms" are broken up and shipped to the nickel refinery at Port Colborne.

Refining in Canada

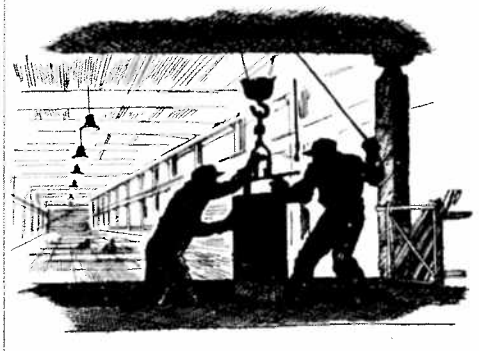
At Port Colborne, Ontario, where the waters of Lake Erie enter the Welland Canal, and close to the plentiful supply of electric power from Niagara Falls, is located The International Nickel Company's great nickel refinery.

Here the nickel "bottoms" from the Copper Cliff smelter are crushed and ground, washed with hot water to remove the sodium sulphide, roasted to remove more sulphur, melted in oil-fired furnaces and poured into moulds. The resulting 425-pound slabs of metal go to the electrolytic refinery as anodes.



Rows of Electrolytic Tanks

This vast refinery covers twelve acres of ground and is filled with row upon row of concrete tanks. The anodes, consisting of impure nickel and containing a small percentage of platinum metals, are lowered into a nickel sulphate solution in the tanks. The impure nickel anodes are slowly eaten away by the electrolytic process and the nickel is deposited as cathodes. These cathodes which are 99.9% pure nickel, including a fraction of a per cent of cobalt, are removed from the tanks and cut up into the sizes required by the various users of electrolytic nickel. The residue from the tanks contains the platinum and other precious metals. This is concentrated to remove a large part of the impurities, and the concentrate goes to the company's platinum metals refinery in Acton, a suburb of London, England. From it are obtained platinum, gold, silver, palladium, rhodium, ruthenium and iridium. This refinery supplies about half the world consumption of platinum metals.



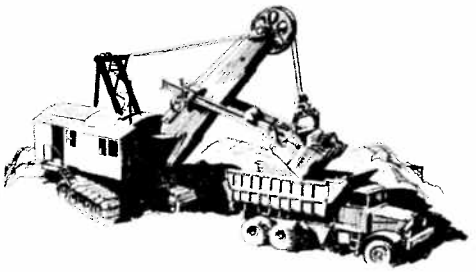
Removing Nickel Cathode from Tank

* * *

PART THREE

What Nickel Is Used For

Until about fifty years ago there was little demand for nickel except for nickel plating, for nickel coins, and for nickel silver used as a base for silver-plated ware. Since that time, and especially since 1921, hundreds of additional uses have been discovered for this metal, largely through scientific research.

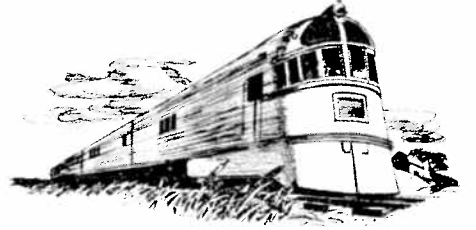


In Gears of Power Shovels and Trucks

Strong, Tough Nickel Steels

Nickel itself is strong and tough and resists wear; it also imparts these same qualities to other metals with which it is mixed or "alloyed." When added to steel, for instance, it produces an alloy that is stronger, tougher and more resistant to wear than the steel itself.

Because of their greater strength, steels containing from 1½% to 5½% nickel are very extensively used for the gears, steering parts, crankshafts and other vital parts of automobiles. The great strength and toughness of nickel steels are even more essential in many parts of trucks, buses, tractors, steam shovels and freight cars because these must stand up under repeated heavy shocks and strains. Nickel steels are used in all types of machinery in mills, factories and shops in ship propulsion machinery; in the machinery used for drilling, producing and refining petroleum; in the engines and landing gears of aeroplanes.



In Modern Stainless Steel Trains

Heat and Corrosion Resisting Steels

Nickel does not rust, and stoutly resists corrosion by salt water, by many acids, caustics and other chemicals. It also stands up under heat. So nickel, when alloyed with steel along with chromium or other alloying elements, helps to make those metals resistant to heat and corrosion too.

Stainless steel, for instance, containing 8% nickel and 18% chromium, is used in hotel and restaurant kitchens and in food processing plants because it resists the corrosion of the food juices and does not contaminate foods. Some modern streamlined trains are completely built with a stainless steel framework and encased in stainless steel sheets so thin, yet so strong, that weight and operating costs are substantially reduced. Ordinary steel sheets would soon rust through — the stainless steel does not even need the protection of paint.

Nickel steels, too, are used in industrial furnaces where they give strength and long service at high temperatures. They are also used in sub-zero temperatures — in cold climates, and in oil refineries and liquid air machinery at temperatures as low as —300 F., where ordinary steels tend to become brittle and break.

In Sub-Zero Temperatures

Special Nickel Alloy Irons

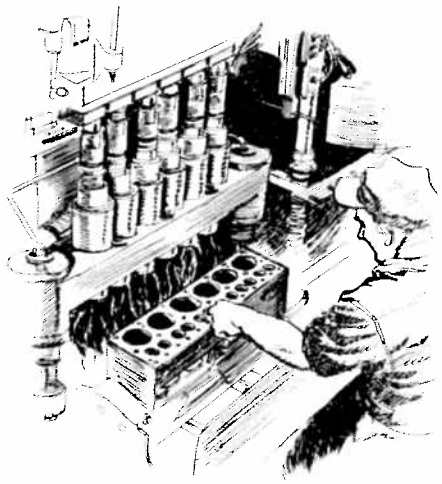
Many unusual alloys are required in the intricate instruments and equipment of various kinds being used today, and many special alloys containing from 2% to 90% nickel have been developed for these special services, and for equipment which must stand up at high temperatures and under corrosive conditions.

Through the use of nickel, alloy irons have been developed that are magnetic, others that are non-magnetic. Non-magnetic alloys are widely used in aeroplane instruments, and magnetic alloys in the radio and telephone industries.

Special nickel alloys have also been developed which show practically no expansion or contraction in changing temperatures — others that expand and contract a great deal in heat and cold. These are widely used in thermostats. A piece of alloy of this type is used in practically every automobile speedometer to offset inaccurate readings which would otherwise result from changes in atmospheric temperatures.

Nickel Cast Iron

In the years following the first World War when the nickel industry was depressed due to lack of markets, nickel research scientists began a thorough study of cast iron. Taking advantage of all experimental work previously carried out by other research scientists, they proved conclusively that cast iron could be improved by adding small percentages of nickel. Nickel makes the metal finer and more uniform in texture. It also increases its strength, toughness and resistance to corrosion.



In Precision Machine

Since that time nickel alloy iron has been adopted for scores of new uses. It is widely used in the machine tool industry for the beds of lathes and heavy machine tools. The engine blocks and cylinder heads of gasoline and diesel engines are generally made of nickel alloy iron.

Nickel Alloyed With Many Metals

In this modern world we find nickel being alloyed with a great number of metals where special characteristics are required. It is alloyed with copper, brass and bronze to give greater resistance to corrosion and wear, or to give a white color; with aluminum to provide a metal that is strong but light in weight; with molybdenum, cobalt, titanium and gold.

Nickel in Everyday Life

Actually nickel is with you and does things for you from the time you get up in the morning till you go to sleep at night.

Let us start with the clock beside your bed. Nickel plating gives it its cheerful, rust-proof shininess. If it is an electric clock, magnetic nickel alloys make possible its compact size and low current consumption.

If the house is cold, you turn on the heat. The valve is of tough nickel bronze. If the furnace is an oil burner — a good oil burner — the fire pot is made of a heat-resistant nickel-chromium-iron alloy.

In the Ba'hroom of Your Home

Now you're in the bathroom. The water runs through gleaming fittings of solid nickel silver. As you brush your teeth, remember — in plants where tooth pastes are made, their purity is guarded by "Monel" and pure nickel utensils. The soap you use was processed in kettles of nickel-clad steel, "Monel" or pure nickel.

Nickel steel and nickel cast iron have been used in the machinery that made your shoes. As for your clothing, "Monel" dyeing machines, since they are not acted upon by the dye solutions, have made possible the delicate shades so popular these days.

At Breakfast

And now for breakfast! In a silver-plated nickel silver percolator you make your morning coffee. Nickel-chromium wire has come into general use for electrical heating elements because it stands heat so well. It makes your toast, and cooks the food on your electric range. In the packing plant where your bacon was cured the equipment which came in contact with the meat was "Monel" — sanitary and easy to keep clean. Even the purity of the salt on your table depends on nickel. In the salt refinery, wet salt and brine rapidly corrode most metals, but "Monel" suffers no ill effects whatever. And as for sugar, filters of "Monel" mesh now give much longer service in sugar refineries than the canvas filters formerly used.

In Cars, Trucks, Buses

Now you're on your way to the plant or office. Whether you ride in a street car, bus or automobile, you can rest assured that a good deal of nickel was used in its manufacture. Through the use of nickel, modern automobiles and trucks have become infinitely safer and more dependable than those of a few years ago. By using alloys of nickel with iron, steel, aluminum and copper, engineers are able to produce parts that are smaller and lighter but tougher and longer lasting — parts that stand up under higher temperatures, higher pressures and faster speeds.

Even the gasoline in your tank was "cracked" in a still utilizing corrosion-resistant nickel-chromium-iron, stainless steel, and nickel-copper alloys.

On the Railroad

If you have to take a trip on the train, you will be interested to know that sturdier engines and freight and passenger cars are being built today, and at the same time their weight is being reduced, by lighter, stronger alloys containing nickel. In modern locomotives, steam pressures and temperatures have climbed to points that would have been impossible a few years ago. So the locomotive of today pulls a much greater load in proportion to its weight, because of the tougher, stronger, longer-lasting nickel alloys used in its construction.

Nickel Has Thousands of Uses

As you walk along the street you see a foundation being dug for a new building. Nickel steel parts give strength and shock resistance to that burrowing power shovel. The life of the tractors down there has been lengthened by the use of nickel alloy steel in parts that must stand abuse. Cranes are lighter and stronger than they used to be, because of nickel steel.

Far up overhead a plane is defying height and distances. Nickel alloys, because of their strength and resistance to heat, have contributed greatly to the efficiency, safety, durability and light weight of the modern aero engine.

No matter what restaurant you pick at lunch time, you'll find nickel a big factor in its operation. Back in the kitchen "Monel" and stainless steel are used for sinks, steam tables and other surfaces which come in contact with food. These nickel-bearing metals are good-looking, sanitary and easy to keep clean. While they cost more than yesterday's galvanized steel, they are actually cheaper because they last so long.

In the Home

Back home at the end of your working day you sit down and turn on the radio. In the tubes for today's radios as well as for the television sets now being developed, pure nickel is essential.

After dinner someone suggests a movie. If it's a technicolor picture, nickel has played a big part in its production, for nickel alloys are essential in the special machinery used in developing and transferring the film.

When you return home you open the door with a nickel silver key. As you settle down to sleep at night and pull the bed clothes up around your shoulders, don't forget that the sheets were bleached and laundered in machines made of "Monel." Because of its corrosion resistance, it keeps them clean and spotless.

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Nickel Supports Them All

PART FOUR

What Nickel Means to Canada

In the city of Sudbury and in the towns and

(Continued on Page 16)

The Romance of Nickel

(Continued from Page 15)

villages located in the mining district in the Sudbury area, about 60,000 people are living today. Practically all these people, whether they be miners, grocers, doctors, electricians or bus drivers, get their living directly or indirectly from the Canadian nickel industry.

About 2,500 people are employed in the nickel refinery at Port Colborne. Thousands more in all parts of Canada also earn their living by producing or supplying the products purchased by the nickel mines, mills, smelters and refineries, or by the people who work for the Canadian nickel industry.

Sending Timber Underground

More than 77,000,000 board feet of lumber and timber have been used in the International Nickel Company's mines in one year, to timber up the shafts, drifts and stopes and for other uses around the mines. This is the equivalent of 4,000 carloads of timber, or more than ten carloads every day in the year. Scores of men earn their living in the woods and in the sawmills, producing this timber.

In one year 16,853 kegs of nails were purchased for use at the nickel mines and plants, or the equivalent of more than two tons of nails every day in the year. The manufacture of these nails means jobs for a large number of men.

In one year 910 tons of steel was used in operating the converters and furnaces at Copper Cliff. More than 10,000 tons of grinding rods were used in the rod mills for grinding the ore. More than 850,000 feet of pipe were purchased. Hundreds of men in Canadian steel plants and mills earn their living producing these materials.

In one year The International Nickel Company used more than 4,500 tons of explosives; more than 35,000 tons of sodium sulphate from the Province of Saskatchewan, and 6,000 tons of lime. Much of the money paid for the purchase of these products finds its way, as wages, into the pockets of Canadians.

The International Nickel Company purchases hundreds of thousands of dollars worth of other kinds of supplies each year — ore cars, miners' lamps, machinery, coal, drills, boots, overalls, helmets, paint, oil. Canadians in all parts of Canada earn their daily bread producing these things.

Creating Employment

In one year The International Nickel Company paid over six million dollars to Canadian railroads for freight. This represents employment for scores of Canadian railwaymen.

All these people in turn spend their earnings on food products from Canadian farms, on clothing, furniture, groceries, dentist bills, rent, and scores of other items, and so help to create further employment throughout the Dominion.

Over 95% of the nickel produced from the Sudbury mines is exported to the United States, Great Britain and other industrial countries. Our prosperity depends in a large measure on our exports. The export of Canadian nickel is a substantial factor in helping Canada maintain a favourable balance of trade with other countries.

Professional Stars Headliners Of Skating Carnival April 18-19

A group of the young artists in the Carnival's junior pageant: Rita Gratton, Kaarina Tulisalo, Katharine Cressey, Heather Crossgrove, Ann Elane Stevens, Sharron Gilbert, and Donna Souch.

Headlined by outstanding professional talent, and with upwards of 200 local performers taking part in a timely "United Nations Revue", the 11th annual carnival of the Copper Cliff Skating Club, at Stanley Stadium on April 18-19, promises to be a standout in the long string of hit shows to the credit of this fine organization.

The scintillating skating team of Conyers & Kearney tops the bill of visiting stars. Jimmie Conyers and May Kearney are rated aces in the acrobatic and adagio field, and will come to the Cliff after a brilliant season climaxed by appearances at the great Winnipeg Winter Carnival.

Dick Nutter, the third professional booked for the Copper Cliff show, is a noted Boston comedian whose ice antics are said to be a riot of fun. He's in demand all over Canada and the U.S.

Colorful Costume Parade

The Stadium, ice and all, will be decked out in the United Nations motif, and the colorful parade of costumes worn by the club skaters will carry out the theme. The junior number, involving about 130 carefully coached young hopefuls, will be devoted chiefly to a costume pageant of Canada's history which, the Carnival's organizers believe, will score a big hit with the crowds, particularly in Canada's "Citizenship Year."

Such favorites as Dorothy Digby McCarthy, Ann Aubin, and Joyce Salo, who need no introduction to local audiences, will be seen in solo performances. The clever young pairs, Alfred Digby Jr.—Greta Faddick, and Elphio Grottoli—Gladys Lennie, have worked up new routines certain to please the public. Another popular club pair will be Virginia Digby and Bernadette Farrell.

Keen interest is being shown in the first appearance locally of the Gratton Sisters of Toronto, Elizabeth and Barbara, who will also be among the visiting stars. These youngsters are reported to have much of the dash and verve of the famous Caley Sisters, and a brilliant future is predicted for them.

Other "outside" attractions are still a possibility.

A special musical score for the Carnival has been written by Maestro Dan Totino, and the Coniston Band is hard at work on it.

Championships and Tests

Recently decided were the 1947 champions of the Copper Cliff Skating Club. Junior champion is Margaret Duncan, and runner-up in this class was Dorothy Jarrett. The intermediate ladies' championship was won by Bernadette Farrell. Senior men's honors went to Alfred Digby Jr., and intermediate men's honors to Elphio Grottoli.

An innovation in the club this year was the holding of bronze and dance tests for the members. Although no member qualified in the dance tests, many passed the bronze preliminary and several proudly achieved bronze medal standing. Inauguration of these annual tests is regarded as a very progressive step, and undoubtedly will boost the general standard of skating in the club.

FISHERMAN'S DE-LIAR

A device has recently appeared on the market which should just about put an end to the ever present disputes encountered by fishermen the world over as to who caught the biggest one. It is a small compact gadget which will weigh and measure the fish as soon as it is caught. The fisherman's "de-liar" incorporates a two-foot steel tape and a Monel hook to which is attached a spring calibrated to measure up to ten pounds.

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