INCO TRIANGLE

VOLUME 7 COPPER CLIFF, ONTARIO, DECEMBER, 1947 NUMBER 9

SUNSHINE AND SHADOW, ORFORD DEPARTMENT, COPPER CLIFF SMELTER

INCO TRIANGLE

Published for all employees of The International Nickel Company of Canada, Limited.
Don M. Dunbar, Editor
EDITORIAL OFFICE COPPER CLIFF, ONT.
VOLUME 7 DECEMBER, 1947 NUMBER 9

Present Trends in Nickel Alloys

(Continued from Last Issue)

Nickel and High Nickel Alloys

The varied and versatile properties of nickel and the high nickel alloys, such as Monel and Inconel, are influencing their uses for many purposes involved in current advances of the various branches of science, including chemistry, aeronautics, electronics and medicine.

Widest use of these alloys continued to be found in the power, chemical, and associated fields where new and higher standards of operating and production efficiency are forcing greater demands upon equipment. These demands include increased resistance to high temperatures and pressures and to new and more powerful agents of corrosion, such as fluorine, the industrial uses of which are just beginning to be explored. Of particular importance is the use of such alloys in the development of methods for the production of gasoline and fuel oil from natural gas.

Ability to stand up under excessively high temperatures continued to make Inconel an important material for jet engines. The same alloy's resistance to corrosion as well as its purity-protecting qualities have been growing factors governing its selection for equipment to manufacture penicillin and other modern drugs.

Special electrical and other properties of nickel have developed markets in the rapidly expanding field of television. Typical of this development are the nickel and nickel alloy elements used in the image orthicon supersensitive eye of the television camera, and in the cathode ray tubes and amplifier tubes used in the receiver.

Some of the high strength alloys, such as heat-treated "K" Monel, are aiding in the deep-well drilling for petroleum, now a major project of the oil industry. Being non-magnetic and highly resistant to corrosion, this alloy is being used for instruments as well as for actual drilling and control equipment. Producers have shown particular interest in the material because of its ability to aid in the maintenance of production levels in highly corrosive fields.

Increased interest has been noted in the use of nickel-clad steel plate for such diversified purposes as fermenting vats and other cellar equipment in breweries to numerous applications in pulp and paper plants. A new product, also showing market possibilities, is Monel-clad strip and nickel-clad strip.

In the field of accessories, industries facing corrosion problems are turning to Monel fastenings—such as hollow, self-plugging rivets for blind working, and nails with annular grooves to give the holding power of screws.

A special type of fabricated tubing, in both nickel and Monel, is finding uses throughout a score of industries—from beer dispensing units to chemical and food processing plants. In sports, there is a marked revival of interest in high strength, corrosion-resistant alloys. Cup winners in all of the important motor boat races during the year were equipped with Monel propeller shafts.

The strong trend toward the use of Monel and Inconel in the home, which was observed immediately after the end of the war, is continuing. Applications include Monel kitchen sinks and cabinet tops as well as Monel hot water storage tanks for gas and electric heaters. There is an increased use of Inconel-sheathed heating units for electric ranges.

Alloy Cast Irons

Consumption of nickel in cast iron, particularly Ni-Hard for abrasion resistance and high nickel-bearing Ni-Resist for corrosion-resistance, expanded substantially.

The use of abrasion resisting martensitic cast irons, known as Ni-hard, containing 2.5 to 4.75% nickel, has increased considerably and they are rendering excellent service in the mining industry where the material is used for grinding balls, mill liners, pump bodies and impellers, and for other components subject to severe abrasive wear.

Corrosion, heat and wear resisting austenitic cast irons, known as Ni-Resist, containing 15 to 36% nickel, are finding greatly increased applications as cylinder liners and valve guides for internal combustion engines, in chemical equipment, heavy duty commissary ranges, pipe, glass molds, and bolts.

Low expansion wear resistant 35% nickel cast iron is in increasing demand for precision machine tool and instrument parts.

High Nickel Irons

During the year a new magnetic alloy was announced which affords a maximum permeability of about 1,000,000 as compared to about 100,000 for the best previously available material. The alloy, which contains 79% nickel, already has been used in considerable quantities of apparatus supplied to the U. S. Navy. Its use in communication transformers has been found to permit a three-fold increase in the range of frequencies transmitted. Interest in magnetic amplifiers and frequency multipliers using saturating nickel iron cores is growing rapidly.

Wrought Nickel Silver Alloys

There has been a strong post-war demand for the nickel silver alloys, of which the 18% nickel type is the most widely used. Along with the demand in the silver-plated ware industries, there has been considerable utilization of this alloy for zipper stock and springs in telephone and electrical equipment. In addition, nickel silver finds many applications for watch cases, key stock, costume jewelry and a host of other uses

(Concluded Next Issue)

It's An Old Ukrainian Custom

Every night of the week there's something doing at the Ukrainian Society clubrooms on Frood Road, but the evening of Nov. 23 was of special importance to the six members whose first name is Mike. Festivities that night took the form of a birthday party for them, each receiving a gift from the Society and a barrage of good wishes. Picture shows four of the Mike members getting their presentation from Chairman Bill Dalyk: left to right, Mike Hrycenko of the Co-Op Dairy, Mike Belkot of Frood, and Mike Prociuk, also of Frood. The other two Mikes, who weren't on hand (maybe they got mike fright), were Mike Hlibchuk of Copper Cliff and Mike Pashko of Frood. All the club members whose given name is Nick will be honored by the Society Dec. 19, while the Bills will have their innings on Jan. 14.

THE OTHER JURYCZAK

Elsewhere in this issue are pictures of Mr. and Mrs. Johnny Juryczak. Just to complete the record, this is the third member of the happy family — Derwid, aged 5, who aims to play a very sweet trumpet when he gets a bit older.

Class Dinner Is Nifty Affair At Creighton Mine

Over at Creighton Mine school, where the principal, Miss Ursula Black, keeps things on the constant hop mentally, socially, and physically, they had a nifty class dinner the night of Nov. 22 for Grades 9 and 10. The tables were attractively set in one of the classrooms, with a large replica of the school crest behind the toastmaster's chair, and it was a full-dress affair in every way.

After the dinner the class president, Jerry Gotro, proposed the toast to the King, and Joe Lovsyn toasted the guests of the evening, who included members of the teaching staff and the school board, Mr. and Mrs. R. L. Beattie, R. D. Parker, and Mr. and Mrs. T. M. Gaetz of Copper Cliff. R. D. Parker spoke in reply. The toast to the ladies was proposed by Jim Smith and acknowledged by Emilia Palys.

In the address of the evening T. M. Gaetz, assistant superintendent of mines and formerly "super" at Creighton, stressed the magnificent opportunities Canada offers her youth. "Know your country, husband and utilize her resources, and grow to be good Canadians," was the substance of his remarks.

Certificates Presented

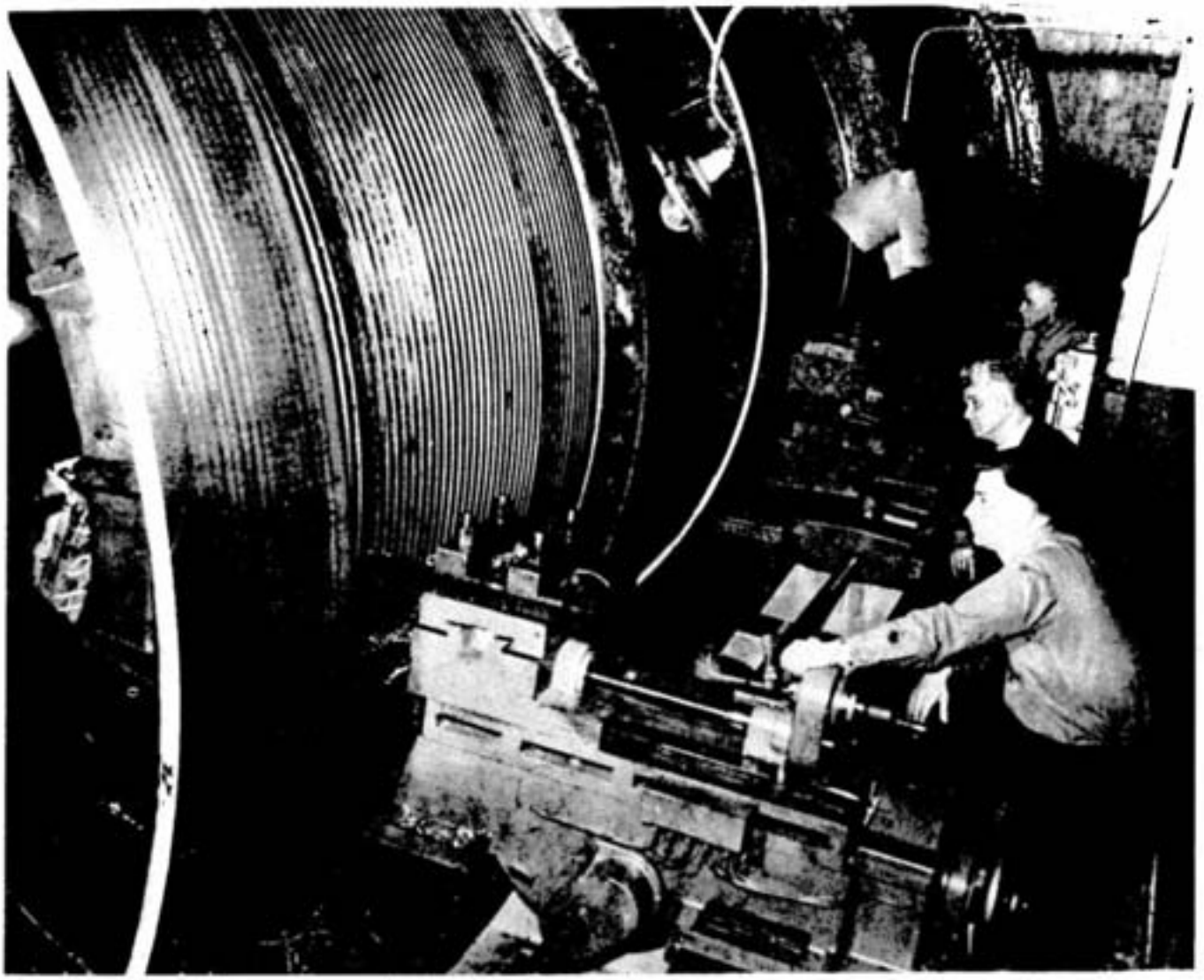
Irene Gallipeau delivered the valedictory speech for the class, after which graduation certificates were presented by R. L. Beattie. Community singing was led by R. L. Goard, with Mrs. E. Tremblay at the piano.

Planned and staged by the students themselves, the affair was a credit to their initiative in every way. In the top picture here is a view across the banquet room, looking toward the head table, with R. L. Beattie on the right of Jerry Gotro, the toastmaster, Miss Black on his left, and T. M. Gaetz second from his left. In the second picture the camera looks down the table at which was seated the graduating class.

DON'T MIND IF I DO

Dinner was late so the hostess decided to play the piano. In the uncomfortable silence that ensued, she turned to a guest and said: "Mr. Johnson, would you like a sonata before dinner?"

Mr. Johnson looked pleased. "Yes, thank you. I had a couple on the way, but I could stand another."



She Needed a Facial So They Gave Her One

Old Faithful, the ore hoist at Frood No. 3 Shaft, was due for a facial. Day in and day out, with scarcely an interruption since the shaft went into production in 1929, she'd been hauling muck from the underground until her service record was written in millions of tons. Now the old girl was looking a little frayed about the drums, and she needed a beauty treatment to perk her up for another 20 years.

They gave her the works, did the experts from Jim Ferguson's salon. For the first time in Canadian mining history, instead of sending her drums to the factory for a face-lifting, to renew the grooves in which the hoist rope lies, they practically brought the factory to her where she stood. From Dundas they shipped a special 40-foot lathe, weighing 35,000 lbs., and they installed it so its two tool posts could cut both her drums simultaneously, as a time-saver. In 40 hours of machining time they took two complete cuts off her drums, turning them round and true. For the operation, the hoist was operated at 2 r.p.m. by an electric motor through a worm reduction gear attached to the end of the drum shaft. The lead screw of the lathe was driven through a sprocket and chain drive attached to the drum shaft.

Then, when her big drums had been turned to a predetermined size, they slipped on her brand-new transformation. Rolled steel shells, cut which the previous spiral had been reversed to give the hoist rope a better lead to

Inco Men Active in Novel Y's Men's Radio Stunt

the sheave and thus reduce wear on both hoist rope and grooves, were fitted over her drums and bolted in place with counter-sunk bolts. The two shells, installed in halves, each weighed 9,265 lbs.

In just over two weeks the tricky job was done. Frood ore, which during the interval was trammed underground over to Stobie shaft and hoisted there, is whooshing up the skip compartments in No. 3 Shaft again as Old Faithful hums happily at her work. You'd never know the old girl.

Top picture shows the face-lifting in progress, the two solid tools of the lathe taking their cuts from the drums. Nearest the camera is D. Davenport, turner, of John Bertram and Sons, Dundas, and at the opposite tool post is J. W. Keenan, the firm's erector. In the centre is Jim Miles, Open Pit master mechanic, who came over to lend a hand to Norm White, Frood master mechanic, while the job was being done. In the lower picture Jim Miles and Len Hines, rigger, stand in front of one of the two new grooved shells of Old Faithful's transformation.

ANALYSIS OF CREATURE KNOWN AS WOMAN

Symbol—WO.

Accepted Atomic Weight—120.

Physical Properties—Boils at nothing and freezes at any minute. Melts when properly treated, very bitter if not well used.

Occurrence—Found wherever man exists.

Chemical Properties — Possesses great amity for gold, silver, platinum and precious stones. Violent reaction if left alone, able to absorb great amount of food matter. Turns green when placed beside a better looking specimen.

Uses—Highly ornamental, useful as a tonic in acceleration of low spirits and an equalizer of the distributing of wealth. Is probably the most effective income reducing agent known.

Caution—Highly explosive in inexperienced hands.

To know is nothing at all; to imagine is everything.

— Anatole France.

Levack May Repeat Ryan

There's a very strong possibility that Levack Mine will make history this year by winning the safe-mining championship of Canada for the second time in succession.

On Oct. 31 Levack was leading Inco mines in the annual race for the Ryan Award, which it won in 1946, and reports filtering in from outside points indicate that no other mine had a better safety record at that time.

There's no telling what will happen between now and the end of the year, of course, but the boys at Levack are all "in there pitching" to repeat their triumph. Results of the Ryan contest are not announced until early spring, when reports on the preceding year's operations have been received from all over the Dominion.

As far as Inco mines are concerned, on Oct. 31 Levack led the race with a frequency of 5.27 lost-time accidents for each 1,000 men employed; Murray was close behind with 6.65, but the rest of the pack was well back of these two leaders. Garson had 11.44, Creighton had 12.17, Stobie had 14.17, and Frood brought up the rear with 14.77.

PICK ALL-STAR TEAM

On the second annual all-star senior baseball team selected by coaches of the Nickel Belt League for the Sudbury Daily Star, Frood placed four players, Garson none, and the other four teams in the league two each. Naming of a second pitcher, and a tie for the catching position, boosted the team to 12 members.

The lineup: 1b, Perigoe, Copper Cliff; 2b, Wallace, Shamrocks; 3b, Girard, Frood; ss, Carbone, Creighton; lf, Bennett, Frood; cf, Barbe, Coniston; rf, Beaver, Shamrocks; c, Gobbo, Coniston, and Brown, Frood; util, Staples, Creighton; p, Flowerday, Frood, and Didone, Copper Cliff.

☆ A novel piece of promotion that netted a substantial sum for Y.M.C.A. boys' work in Sudbury was pulled off the night of Nov. 24 by the enterprising Y's Men's Club, of which several community-conscious Inco men are members.

The Y's Men got a ready response when they put their Radio Auction proposition to Sudbury merchants, and donations included a complete variety of goods ranging from a canoe to a mink neckpiece. There were even such hard-to-get items as Prestone, Lux, and Crisco. All donations were listed on a bid-sheet, and 12,000 of these sheets were mailed to Sudbury District homes.

Caught Public Fancy

The evening of Nov. 24 the Y's Men manned a battery of telephones in the top floor of the C.D.S.; as bids for each item poured in over the wires they were posted on big boards facing the phone operators. The stunt had caught public fancy in no uncertain manner. Then at 8.00 o'clock other Y's Men went on the air over a radio hook-up installed by CHNO, and for three solid hours "knocked down" article after article to the highest bidders. When it was all over the public had bought a batch of high-class merchandise, the business men had received some good advertising, and the Y's Men had some $1,500 toward the new boys' camp they plan to build on John Island in the North Channel. There was only one fake bid.

Picture shows the hectic scene as the telephones started ringing at 7.00 o'clock. Phone operator nearest the camera is Gerry Smith of Frood. Standing behind him are Bob Morman of Refinery, Harv Mellow of Smelter, and Herb Cavers of Refinery. Others of the Inco ilk who had a hand in the show were Les Thornton and Ken McDonald of Open Pit, Al Fraser and Lloyd Hamner of Garson. After doing a lot of work on the arrangements, Bruce Seli of Copper Cliff found himself in the hospital beating a pneumonia rap when the big night rolled around, but he kept in close touch by radio.

Only in more production and in new production can the American standard of living be increased and the economy be sound.

—Alfred P. Sloan, Jr.

PICTURE CONTEST WINNERS AT LEVACK, SMELTER, CREIGHTON

Harry Sharp, the Levack camera smoothie, gathers up the 10 shining simoleons for first prize in this month's picture contest with the striking cat picture reproduced above. We think nobody will argue with this decision by Gordon Harry, who acted as judge. It's a mighty smart piece of photographic workmanship; nuff sed.

To J. McLennan, maintenance electrician at Copper Cliff, goes first honorable mention and a $1.00 award for an appealing snap of his smallest son and a cousin, in the tub. The picture is titled "Saturday Night". By the way, while he says that in this case he regards it as perfectly okay, Judge Harry does not want people to think he is giving the green light to community bathing. "We enjoy the photo contest very much," Mr. McLennan writes. "Some of the entries have been wonderful shots."

One of those tricky reflection pictures that usually starts an argument as to whether or not we've reproduced it upside down, is picked for second honorable mention and a $1.00 prize. It came from Frank Brown of Creighton, and shows an old water-filled quartz quarry in the bush between Creighton and the Soo Highway. Frank made the snap about 7.45 p.m.

Interest Is Holding Up

We're still purring over the lively interest in the pic contest, even though the number of entries has slackened off a little. We're hoping that there'll be a great batch of good snaps taken by Inco people during the Christmas festivities. And please send 'em in for sure, eh? Us folks on the rural routes just love to get mail, particularly during the long, lonesome winter.

Now for a few special mentions. Eddie Henry, son of Dewey Henry of Frood Mine, submitted a fine shot of his brother, goin' fishin' at Lake Vermillion and looking for all the world like Huckleberry Finn. Buelah Ellis of Nairn Centre sent a cute snap of Sheila Pomfrey, baby niece of Les Pomfrey who works swing shift at the Nairn and Wabagesik plants; she also enclosed some verses about the young 'un, for which thanks very much and congratulations on the way you express your poetic thoughts. Alex Herrich of Port Colborne entered a couple of good efforts, one showing Lake Erie at Morgan's Point and the other a candid shot of Patrol Leader Keith Wallace fondly toying with a pork chop at Boy Scout Camp. W. E. Chaddock offers two fine mountain scenes and also the comment (which just burned us to a crisp) that the Triangle has one fault — it isn't big enough. (Brother Chaddock, you should try filling it up some time!)

Good Shot of Smelter

David Cleland of Copper Cliff took a very clear picture of the Copper Cliff smelter. Margaret Coones of Toronto, whose dad, Percy Coones, is an Inco pensioner, submitted a view of Charlton Lake near Willisville, and judging by the technical details she mentions, is taking her photography quite seriously. Mrs. Bill Blanchard, whose hubby is a motorman underground at Frood, sent an attractive snap of daughter Lorraine, 2½. P. R. Britton took a long time-exposure, indoors, of Jean Maloney, daughter of a fellow Creighton

employee, Harold Maloney; unfortunately the cute youngster couldn't sit tight for 20 seconds, and do you know one that can, by the way? Germain Tessier of Coniston, who works in the crushing plant at the Cliff, sends a dandy snap of his daughter Paulette, 1½, taken at his summer camp at Stinson. A hearty thank-you to Frances Moir of Turbine for her remarks about the Triangle and also for her double entry, a snap of the Spanish River near the Weedmark home and another of pretty little Sharon Macartney, 3, daughter of Mr. and Mrs. H. Macartney.

And that's "30" for this trip. Keep up the great work, you camera clickers! We hope the mailboy gets round-shouldered, lugging in your entries.

51% of Incoites Bought Canada Savings Bonds

The Nickel Belt has a country-wide reputation for its high standard of living, but Incoites don't let their yen for the good things of life interfere with putting something in the old sock for a rainy day.

A total of $1,968,700 was invested by Inco employees in the Sudbury District and at Port Colborne in the 1947 issue of Canada Savings Bonds, indicating that the thrift habits encouraged by Victory Loan campaigns during the war years have by no means been lost in the shuffle of post-war adjustment. This sum represents purchases made through the payroll deduction facilities provided by the Company, and does not include bonds bought directly through the banks.

There was no selling campaign such as in the Victory Loan drives; the only promotion of the bonds was the regular publicity material issued by the Department of Finance at Ottawa.

The total number of subscribers was 6,300, or 51% of the total enrolment, which puts the average subscription at $312. When the 1946 issue of Canada Savings bonds was offered, Incoites bought a total of $1,419,050 worth, there being 5,451 subscriptions averaging $260 each.

A breakdown of the 1947 Inco bond purchases by plants follows:

PLANT	SUBS.	TOTAL
Frood Pit	416	$134,250
Frood	729	214,900
Creighton	588	196,000
Levack	216	92,750
Garson	345	110,950
Huronian	27	8,100
Coniston	266	103,200
C. Cliff	2,174	661,350
Lawson	16	4,650
Murray	120	35,050
Stobie	49	11,550
Stobie O.P.	33	11,100
Refinery	312	90,400
Police	82	20,950
Pension	1	100
Fr. Brace	30	8,350
Port Colborne	862	255,000
Inco Towns	34	10,050

HONORED FOR GUIDE WORK

At the semi-annual meeting of Sudbury District Girl Guide divisional committee, held at the Sudbury Inco Club, Mrs. Robert Jack was honored for her great achievements in her 10 years of service as district commissioner for Garson. She received a certificate of merit and ribbon from Mrs. D. H. Forster, divisional commissioner. Under her leadership Garson Girl Guides and Brownies have made outstanding progress, during which they won the Webster Shield in 1945 and the Mackey Shield in 1947.

JURYCZAK AND THE JURY

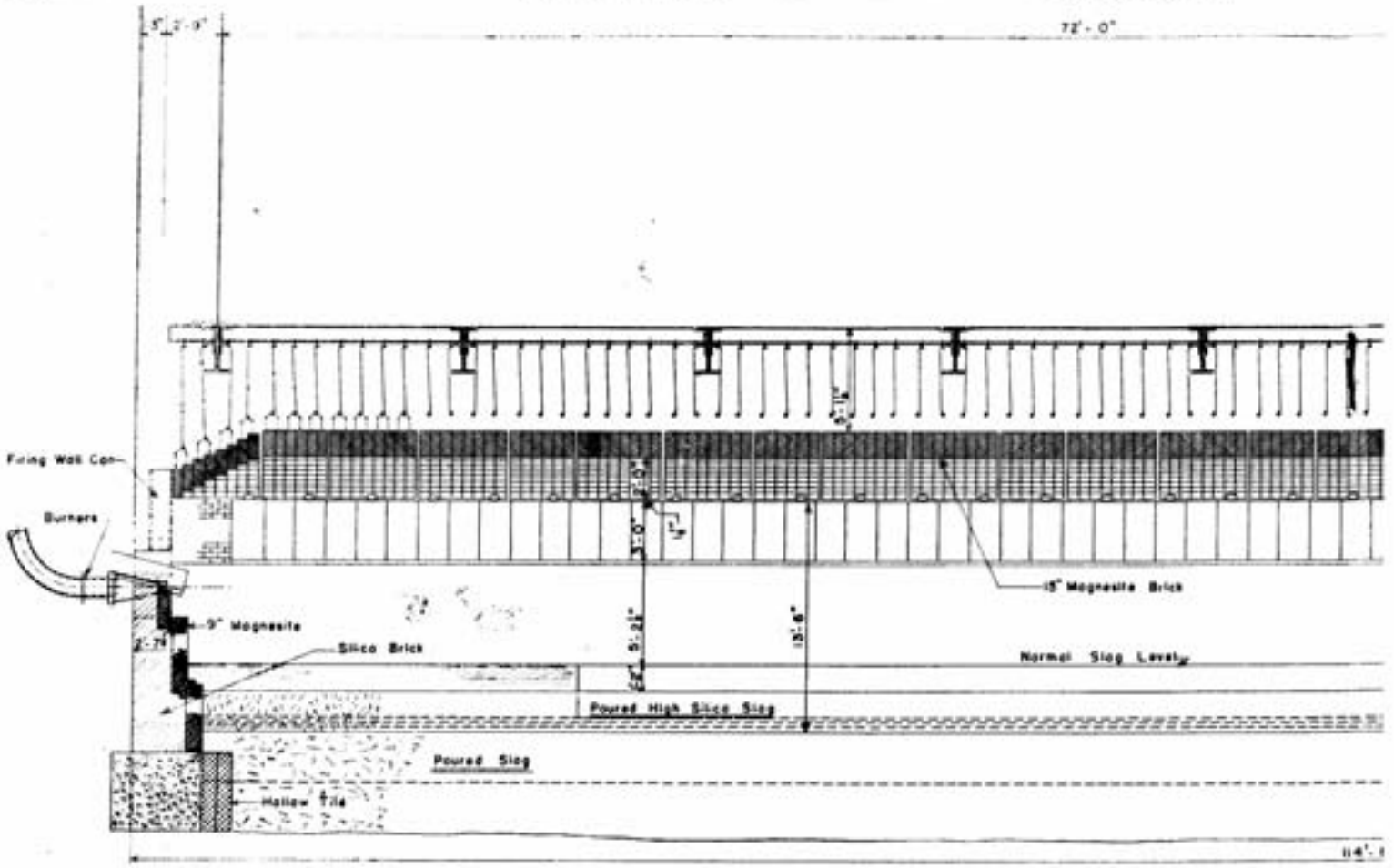
RUNS CLELAND RANCH

Here's pretty young Jo Ann, better known as "Jody", who rules the roost at the R. H. Cleland home in Copper Cliff. Her dad is General Safety Engineer when he's at work, and his opinion of his 4½-year-old daughter is no accident.

Each Saturday evening from 9.30 to 10.00 o'clock from the auditorium of Inco Employees Club, Johnny Juryczak's orchestra broadcasts a selected program of the dance music they'll be playing at that night's cabaret party. The fact that the cash customers are being lured in steadily increasing droves to these weekly get-togethers indicates that the air samples are popular, but that's not the final measure of how the radio program is going over with the public—no siree, not by any means.

The real down-to-earth dope on that radio show comes from the club lounge, right next door to the auditorium. There, gathered around the radio, wives of the orchestra boys listen to the broadcast, and theirs is no mere bobby-soxer interest. They double-check the performance on every score, and are ready with their verdict as soon as the program signs off. No wonder Juryczak and his men bear down when they hit the ether!

In the top picture the Inco Club orchestra is seen during a regular broadcast, and in the second picture is one of the Saturday night jury panels: counter-clockwise, Mrs. I. Tramontini, Mrs. J. Juryczak, Mrs. Dyke-Parker, Mrs. Art Serent and Mrs. "Happy" Clarke.



Reverb Furnaces Give Ore The Metallurgical "Hotfoot"

Copper Cliff's reverberatory furnaces make an outstanding contribution to Northern Ontario's scenic splendours because they produce the slag which cascades down the dump and bathes the night sky in softly beautiful pastels for the delight of the tourists.

Worthwhile accomplishment as that may be from a Chamber of Commerce point of view, it is nevertheless not quite the purpose for which the reverbs are operated.

There are nine of these long brick furnaces in the smelter, seven producing matte for the nickel converters and two turning out matte for the copper converters. Each one is 110 feet long by 27 feet wide, inside dimensions, and is of special brick construction to withstand the intense heat and corrosion of the process which goes on inside it night and day, week in and week out. Since operation of the nickel and the copper reverbs is essentially the same, Triangle will confine this description to one of the nickel furnaces.

It's A Hard Life

Ore from the mine runs into some very unceremonious treatment in its long trek from skip to cathode. Its age-long slumber underground is rudely shattered by inquisitive drills and thunderous blasts. Crushers squash and crumble it. Rod mills grind it to a pulp, flotation machines drown it, and roasters shove it down from hearth to hearth until it's plenty hot under the collar. But it begins to get really uncomfortable when it's dumped into the 2,600-degree bath inside a reverberatory furnace. That's a pretty tough spot for dumb, harmless sulphides.

Like red hot dust and just below its melting point after its trip over the 11 hearths of a roasting furnace where water and a great deal of its sulphur has been driven off, the nickel-copper concentrate from the concentrator, now in the form of a calcine, is delivered by gravity through pipes to the reverberatory department. It arrives at the head of drag conveyors, the steel paddles of which operate in dustproof housings and run along both sides of the top of the reverb furnace. At a rate of approximately 1,500 tons a day, the calcine drops into the reverb through fettling pipes, which are six-inch tubes spaced three feet apart and connecting the conveyor with the interior of the furnace.

Inside the reverb is roaring, blinding flame. The calcine piles along both sides of the furnace and slowly melts in the terrific heat, running into the bath of molten sulphides which boils three feet deep in the V-shaped trough they form along the bottom of the furnace.

How Slag Is Formed

Then this feature of the smelting process begins to get in its real work. The calcine contains a large percentage of iron oxide, and it's up to the reverb to remove much of this impurity. So when the calcine is fettled into the reverb, it has been mixed with about one part of sand to four parts of concentrate. The silica contained in the sand does the trick. The iron oxide unites with the silica to form iron silicate, or slag. Lighter than the molten nickel-copper sulphides, the slag floats to the top of the bath.

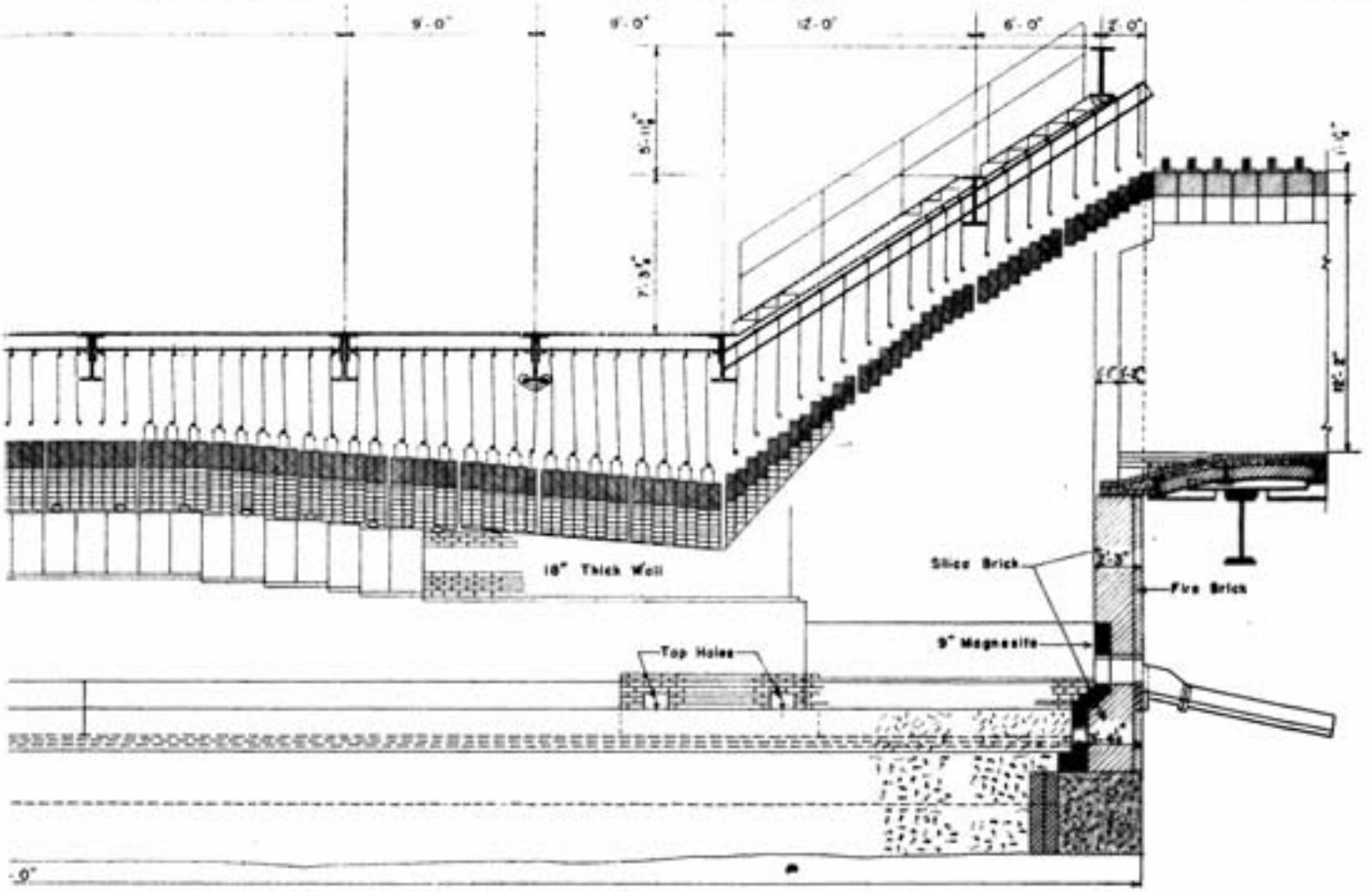
At one end of the furnace, just below the surface of the bath, is a small hole through which the slag is skimmed off almost continuously. On a cement platform outside the furnace stands the skimmer with his long iron bar, watching that the skimming hole does not clog up, that no nickel-copper values escape with the slag, and that the slag is running freely down the water-cooled launder, or chute, which feeds it into a slag pot on the tracks below.

The only interruption to the steady stream of slag from the furnace is when the pot below has received its load of 20 tons and another one must be pulled into position. Then the skimmer "buds up" the slag hole temporarily with a plug of clay, which is easily broken away when another slag pot is in place and skimming is to be resumed. The slag train is usually made up of 18 pots, and when these are filled they are hauled out to the slag dump, usually about every half hour.

Tapping The Matte

In the lower part of the bath the molten nickel-copper iron sulphides, now a grade of matte suitable for the next step in the smelting process, are ready for transfer whenever the converters require them. From 12 to 15 times each eight-hour shift, matte is tapped from the reverb, through a hole in the side wall of the furnace 17 feet from the skimming end. A heavy dull red, it flows down a covered clay-lined chute or launder into a matte ladle which is spotted on the transfer track in a tunnel below the end of the launder and parallel with the furnace. The tapper, like the slag-skimmer, stands ready to keep the tapping hole clear and matte running steadily.

Its capacity 185 cubic feet, the big steel matte ladle has been lined with two or three coatings of frozen converter slag to protect it from the action which would take place immediately if the matte were to come in contact with it. Although it is made of four-inch steel, the stream of matte would consume it like sugar in tea if the slag were not there to protect it.



SKETCH SHOWS HOW REVERB ROOF IS HUNG

The suspended arch roof of a reverberatory furnace is clearly illustrated in this sketch, or "longitudinal elevation" as the boys in the engineering dept. call it. Suspended from beams running the full length and breadth of the furnace are hangers supporting 15-in. magnesite bricks in cans. Construction of the furnace to withstand the terrific heat and weight of the molten bath is also clearly shown.

Fed To Converter

When it is filled, the matte ladle is hauled through the tunnel to the converter aisle, and one of the powerful overhead cranes picks it up with ponderous ease, swings it carefully into position above the fiery throat of a converter, and nonchalantly pours the 12 tons of molten sulphides into the seething belly of that thirsty monster. So once again a reverb has "delivered the goods."

Matte ladles are also used when it comes time to skim slag from the converter, into which a mixture of quartz and low grade mine rock is also introduced to lure away the balance of the iron impurity from the sulphides. Converter slag, coming from a more advanced stage of the smelting process, contains nickel-copper values which can be recovered, so it is fed back into the reverb through a launder in the end opposite to where skimming is done.

170 Tons Per Day

Fuel for the reverb is powdered coal, crushed in the coal plant and blown through pipes to an 80-ton bin above the furnace, from which screw conveyors carry it down to be picked up by fan air and blown into the furnace with its four burners. A reverb requires for each day's operation about 170 tons of coal.

Smoke and gas from the reverb enter a furnace flue which is connected with a main header flue feeding to the big brick stack. In order to eliminate the gas as much as possible from the matte and slag as they are being taken from the furnace, large hoods are hung over the matte ladle and over the slag launder above the slag pot. These hoods are connected to the reverberatory header flue, and have greatly improved working conditions in the reverberatory department.

In five of the reverbs the waste heat is used to accomplish another important purpose besides converting calcines into sulphide soup a la silicate. On the flues of the second, third, fourth, fifth, and sixth nickel reverbs are bypasses which allow the waste heat to be used for heating boilers, two of them 750 horsepower, one 1,200 horsepower and two 1,800 horsepower, which furnish steam to all buildings in the Copper Cliff plant.

Nine men man a reverb. The tapper draws off the matte; the two skimmers draw off the slag. The two roof men clean off any spillage of calcines around the fettling pipes, help the tapper, and operate the conveyor which pulls the matte ladle through the transfer tunnel into the converter aisle. Two fettlers control the flow of calcines into the furnace by operating small gates located just above the fettling pipes. Two converter slag men keep their slag chute clean and assist the craneman in returning converter slag to the reverb.

TOUGH GUY

The criminal was an old "toughy". The law had shot him numerous times without serious injury. He'd been captured, had escaped, and been recaptured. Finally, with obvious bravado, he walked to the electric chair. He didn't flinch, but after he'd been strapped into the chair by a bunch of huskies, he seemed to sag and grow a little pale. Suddenly he barked: "Well, turn on the juice!"

"Turn on the juice?" the electrician blurted. "Why, it's been on for five minutes."

The time which we have at our disposal every day is elastic; the passions that we feel expand it, those that we inspire contract it; and habit fills up what remains.

—Marcel Proust.

NUCLEAR FISSION

"We had a bad explosion at our house last night. Somebody told Dad the new maid was dynamite; so he decided to investigate.

"As soon as he touched her she exploded. Mother went through the roof, grandma hit the ceiling, and Dad went all to pieces."

Nute Memorial to Encourage Embryo Curlers at Cliff

C. W. "SAM" NUTE

Shortly before his death last May, C. W. "Sam" Nute, ardent Copper Cliff curler and past president of the Northern Ontario Curling Association, expressed his intention of putting up a trophy to stimulate interest in curling among the young boys of the town. His wish has been carried out with the presentation to the curling club last month of the C. W. Nute Memorial Cup, and it's a beauty.

All boys in Copper Cliff in secondary school or up to 19 years of age may take part in the competition for the Nute Cup. No fee will be charged them, and brooms and stones will be supplied. They will be allowed use of the ice from 4.30 to 6.00 o'clock some afternoons and also on week-ends at times to be arranged. Oldsters will be on hand to instruct them in the fine points of the bonnie game.

Sponsorship of the junior group, and the resumption of curling schedules for men on shift, are features of what looks like a big year for Copper Cliff Curling Club. President A. Godfrey expects a hefty increase in last year's membership of 130, particularly when the town's new housing project is completed. If the weatherman is agreeable, curling will be underway by Dec. 15.

Vice-president of the club is Jack Duncan, who chairmans the special committee in charge of junior curling. Secretary-treasurer and his assistant are Tom Birney and Mills Austin. Members of the executive are R. Bell, R. Hendry, F. Matte, F. H. Clarke, G. Henry, H. Munro, E. G. Stoneman, Dr. C. R. Ferguson, J. Hudson, and H. J. Mutz. The rink committee is composed of J. W. Garrow, D. Finlayson, and H. Hyland. The competition committee has G. M. Ferguson, M. Austin, T. J. Birney, and G. Telford, while shift curling will be in charge of F. Matte, R. Hendry, S. Spratt, and G. Telford.

IT ALL DEPENDS

A gossip is a person who talks to you about others; a bore is one who talks to you about himself; a brilliant conversationalist is one who talks to you about yourself.

YOUR HEAD MUST BE USED TO CONSERVE YOUR HEART

The heart is a sealed-in motor which is virtually inaccessible during life. It cannot be serviced or replaced and when it fails, you fail with it.

It is well constructed for the task it has to do and this is greater than most people realize. At the rate of 70 beats per minute, in a week or even a day it totals up to fantastic figures.

However, busy as the heart appears to be, the cycle consists of a beat and a rest and it actually rests about two-thirds of the time. This fact plus an excellent blood supply controls fatigue in the heart muscle.

When the heart is young and healthy there is more reserve to take care of the peaks of stress and effort to which we subject it. But as a person nears the age of 40 a period is reached when it is wise to think of conserving this vital organ.

Heart Strains

Factors which increase the load on the heart are overweight, emotional stresses, prolonged physical effort and chronic fatigue. If one or more of these conditions is present a sincere attempt should be made to minimize it and slow down.

The important thing to remember is that you cannot do at 40 what you once did at 20. Your heart is like a rubber band that no longer has all its former elasticity. If you stretch it too far something has to give.

Exercise Sensibly

There must be a balance between rest and exercise. At least 56 hours of sleep a week is required. When you exercise avoid such effort that will cause shortness of breath and an uncomfortable feeling in the chest. Always quit before you are really tired out. Compete with people in your own age bracket and let the young people have their day.

Avoid peaks of effort such as running upstairs, trying to catch a streetcar on the run or even resist the challenge of the first empty section of a revolving door. The few seconds or minutes gained are rarely put to useful advantage. Cultivate a deliberate attitude and you may even accomplish more in the long run.

Careful Diet

Care with your diet is essential. Not only is a well balanced diet important but so are the size of the meals and the manner in which you eat them. Large meals eaten in a hurry place a heavy strain on the heart and if you exert yourself directly after, you are really looking for trouble. If a person is at all inclined to overweight, fats, sweets and starches should be limited.

No man is wholly independent. To some extent in some capacity, either large or small, he must depend on others.

Women Compete In Garson Test

Displaying smooth proficiency in St. John Ambulance work, women of the Garson nursing division took part in a First Aid competition to determine their local team championship and also to decide who would enter the lists against Sudbury in the annual test for the Dr. R. M. Mitchell Trophy.

Winning team, coached by Bob McCauley, was the one pictured here, left to right: Mrs. Bob McCauley, Mrs. Cecil Smerdon, Mrs. Albert Morin (captain), and Mrs. Ernie Brankley. Judge of the event was T. M. Crowther of the Inco Safety Department at Copper Cliff, seen at the right with his score sheet.

Dr. R. M. Mitchell was on hand to present individual trophies to the winners on behalf of their nursing division. Time-keeper was Safety Engineer George Quilty of Garson, and the "patient" who submitted cheerfully to the rigours of First Aid treatment after a hypothetical accident was Mrs. V. Kaattri.

The losing team, coached by Ollie Matson, was composed of Mrs. J. Malin (captain), Mrs. G. Gregg, Mrs. Ted Brankley, and Mrs. John Morrison.

Garson had won the Mitchell Trophy for the district championship two years in a row but, competing in the finals against the Sudbury entry, Mrs. Morin's lineup had to concede defeat for 1947 by a margin of only four points. Captained by Mrs. Pearl Klein, the Sudbury squad was comprised of Ethel Brown, Lillian Davis, and Lila Conroy. Dr. W. J. Bell of Toronto, provincial commander of the Brigade, judged the final contest.

YOUNG THESPIANS DRAW LAUGHS WITH WELL-DIRECTED COMEDY

Gales of hearty laughter from the audience rewarded the cast which presented a one-act play, "The Patched Coat", at the annual commencement exercises of Copper Cliff High School, under the clever direction of Miss Gertrude Wilson.

Behind-Scenes Workers

In the above picture layout are scenes prior to the final curtain call. The group in the first photo is composed of the behind-the-scenes workers without whose aid no play could be a success: standing, Shirley Kampi, Phyllis Hobden, Miss G. Wilson, Gino Pollesel, and Derno Minardi; sitting, Vilma Lahti, Dorothy Sinclair, and Joan Stoddart.

Three of the handsome male members of the cast are seen in No. 2 in a pre-curtain huddle: Bill Sleaver, Charlie Tuttle, and Louis Core. Not pictured, Jim Lee.

Margaret Mowat, in No. 3, is about to receive from Shirley Kampi the excellent make-up effort which transformed her into Grandma Hamilton.

In No. 4 are Fay Young, Ann Morrow, and Margaret Sauve, pretty young co-eds who took the parts of the Hamilton girls, Gladys, Effie, and Maybelle.

No. 5 shows Joy Meeks, who played Dinah, the colored maid, gazing woefully into a hand mirror as Vilma Lahti starts to mask her with the inevitable blackface.

Triple-Threat Scholar

In the long list of presentations made during the commencement exercises, outstanding were those to brilliant Helen Martel, the valedictorian, who is now attending University of Toronto. She received the Inco award of $30 for attaining the highest standing in Grade 13, the Robert Simpson scholarship of $100 for proficiency, and the Dominion-provincial scholarship of $500 for her scholastic record.

Two other Dominion-provincial scholarship winners, now attending Normal School at North Bay, were Edith Salo and Ruth Watson, who received $250 each.

Rounding out the entertainment side of the program were much enjoyed selections by the girls' glee club, singing in four-part harmony. They were expertly conducted by Miss Mary O'Sullivan, with J. Dunn as accompanist.

Pardon Us If Our Slip Was Showing!

To The Editor:

The Copper Cliff cribbage team wishes to draw attention to a misstatement of fact appearing in your last issue. It was reported there that the Refinery cribbage team had beaten the Copper Cliff cribbage team in three straight encounters. Those familiar with the two teams would automatically discount the story because of its inherent improbability. For the benefit of others we wish to correct the record by stating that of the three encounters the Copper Cliff team won the first two and the Refinery team was permitted to take the third by a small margin.

Publication of this letter will alleviate the embarrassment of the Refinery team for having been pictured in an impossible light.

—Copper Cliff Cribbage Team.

Ed. Note: While admitting an unfortunate error in reporting, as far as the standing of the two cribbage teams was concerned at the actual time of publication, we cannot and will not be censured for our great mystic power to divine the course of events before they come to pass. About four days after we received this letter, the Refinery cribbage team walloped the Copper Cliff cribbage team —but good! Your crib, Citizen Zurbrigg.

MAN, BOY, AND DOG

The happy character in this snapshot is Archie Dagg, who works underground at Frood Mine. In the crook of one arm he has his husky, 4-month-old son Brian, and in the other arm he has the family bulldog, Tim. Another reason he's smiling is because his wife was holding the camera. Everything was oke with Archie right then.

The whole universe is a parable which hides God from the unworthy, while it reveals him to the devout.

—Philip Vollmer, Ph.D.

One Side of Muck Pile In a Garson Stope....

SLUSHER HOISTS SAVE BACKS AND BOOST MUCKING SPEED

A slusher hoist, back-saving replacement for the old mucking shovel, and concrete flooring, still in the experimental stage as a replacement for timber, are the features illustrated in the two pictures on this and the opposite page of operations in a typical cut-and-fill stope at Garson Mine.

The big muck pile in the background of the above picture is ore which has been broken down from the roof of the stope by drilling and blasting, and Tom Ballantyne is busy scraping it with his slusher into the chute immediately in front of him, from which it is drawn off on the level 40 ft. below for tramming.

Air at 85 lbs. pressure to operate the slusher is supplied by compressors on surface which pump it into the network of lines running throughout the mine.

Have Over 200 Slushers

Within the past few years shovelling has been completely replaced by mechanical mucking in Inco mines with the exception, of course, of clean-up work. More than 200 slushers are now in operation, ranging in size from 3½ h.p. to 125 h.p. The latter are used where the cave-in method of mining is employed and big muck has to be handled. The slusher illustrated above is 15 h.p.

A slusherman handles about four times as much ore as did a man with a shovel. He becomes so dexterous in manipulating the scraper that it almost appears human as it nudges and coaxes an unwilling big chunk of muck down the chute. He also develops ingenious methods of rigging his cables so as to move the slusher hoist from one position to another under its own power, thus avoiding the necessity of having to bar or bull it.

Flooring Catches Fines

The size of the cut-and-fill stope depends on the size of the orebody at the particular point of operation, but averages about 25 ft. wide by 150 ft. long. The mining procedure is to take a full cut from the roof of the stope, mucking out the ore with the slusher after each drilling round is blasted. Without a solid flooring in the stope it would be impossible to remove all the fines, or small particles of ore, which usually contain higher metal values. When the full cut from the roof has been mined, the chute is raised to the next floor with the timber framework seen in the right background of the above photo, and the manway and supply compartment is extended. Then the stope is filled to about half its height with waste material, a new flooring is laid, and the cutting and mucking cycle is commenced again.

The picture on the next page, taken from the opposite side of the muck pile, completes the view of the stope midway through a cut. The miner with the long scaling bar is completing the standard safety precaution of testing the uncut section of the roof for loose. The expanse of flooring is ready for mucking operations, after which it will be buried beneath tons of fill as mining progresses.

FAST BADMINTON LOOP

Eight teams are hot-footing it after the Nickel Belt Badminton League title this season, one more than last year, and competition is already at concert pitch. Two of last season's entries, CYO and Creighton, have withdrawn, but St. Louis Club, "Y", and Falconbridge have entered two lineups each, which with Sudbury Inco Club and Copper Cliff make up the eight-team loop.

Re-election of Vern Tupling as president and Stella Crawford as secretary-treasurer, and naming of Ovide Gauthier to succeed Walter Wilson as vice-president, filled out the league's slate of officers.

....and Here's Other Side; Note Concrete Floor

Falconbridge Takes Opener

Back in the Nickel Belt hockey wars again after an absence of five seasons, a Falconbridge team swept to triumph in the season's curtain-raiser at Stanley Stadium, the MacAskill Cup series. Two third-period goals from the stick of Jerry Seguin gave the Combines a 5-4 victory over Sudbury Wolves in the final game.

Wolves had eliminated Sacred Heart College 7-5, and Falconbridge had taken the measure of Copper Cliff Redmen, 2-0.

Picture shows Duncan Finlayson, president of Copper Cliff Branch of the Canadian Legion, presenting the MacAskill Cup at the end of the final match to Gord Harley, the North Bay boy who captains the Falconbridge entry. The Legion realized a tidy sum from the net gate of the series for its welfare work.

Better-Balanced League

Plenty of new faces and a better-balanced league than last year are inducements which are already turning out the customers in gratifying numbers. There was no big fat edge for any team in the MacAskill series, and the dopesters figure it to be that way all season. Looking a long way ahead to playoff time, indications are that the Nickel Belt's senior entry in the NOHA will have a tough time getting by the Sault, which has gone all-out to build a real team this year, whereas the local junior entry will probably meet its thorniest opposition in the North.

A favorite pastime of the railbirds these nights is toying with the prospect of how far last year's Copper Cliff Redmen would go this season if they had remained together. The way the Cliff kids are starring in junior ranks down south, the feeling is that nothing could have stopped them from the Eastern Canada title at least, in 1948. Playing with Guelph, Yacker Flynn and Tatter McClellan are among the top scorers in the Junior OHA, as also is Armstrong, who is performing with Stratford. Sambo Bettio is the leading goal-getter with Boston Olympics, and Telford is being used just about 60 minutes per game with the same outfit. Portland is being called the best defenceman in the Junior OHA, and Toppazini is now hitting his real stride with St. Catharines after an early slump.

VISITED AT PORT COLBORNE

A welcome visitor at Port Colborne plant on Nov. 15 was Nelpha Lahay, who brought greetings from Incoites at Levack Mine to those at the nickel refinery. He had a chat with Jim Walter, assistant to the supt. in charge of personnel at Port, describing his work as cage-tender at "Canada's safest mine".

THE MEDIUM

"Papa," queried the son, "what is the person called who brings you in contact with the spirit world?"

"A bartender, my son."

Junior Badminton League at Copper Cliff

All Inco community halls report greatly increased badminton activity this season, but at no point is this more evident than at Copper Cliff, where Steward Owen McDermott has organized 50 junior players into a five-team league which is tops for keen interest and sizzling competition. Playing after school, Saturdays, and the odd evening during the week, the budding stars are developing fast under their coach's enthusiastic supervision.

Pictured here is the turnout at a typical Saturday morning session: front row, Betty Mash, Phyllis Hobden, Margaret Mowat, Fay Young, Dorothy Sinclair, Margaret Sauve, Joan Stoddart, Maureen Pappin, Lois McNeil, Isabel Boyle; middle row, Amy Wulff, Marilyn Gillespie, Connie Norman, Marilyn Beech, Jean Mash, Doreen MacKinnon; back row, Bill Yeo, Jack Cullen, Darrell Shields, John Birney, Barry Price, Derio Nicoli, Bill Coo, Kornel Sharko, Gino Pollesel, Adelchi Bulfon.

Other badminton activity at Copper Cliff Community Hall includes entries in both the Church and Nickel Belt leagues, as well as a thriving house league in which the four teams are captained by DeSoto, Stephenson, Wilson and McDermott. They sure are batting that bird around in the smelter town these nights.

TECH TAKES RUGBY TITLE

For the first time in 15 years the Northern Ontario senior rugby title and the Poupore Cup came to Sudbury when the Tech team smothered Timmins High and Vocational School 42-5 in the final at Queen's Athletic Field. It was the ninth win in 10 games for the powerful victors, and the first defeat in nine starts for the losers.

This was Sudbury Tech's lineup:

Sudbury Tech—Flying wing, Dickie; halves, Rapsky, Makarinsky and York; quarter, Puro; snap, Borovich; insides, Reipas and Duncan; middles, Pella and Satinen; outsides, Bonhomme and Cuomo; subs, Geoffrey, Cecile, Depatie, Gereghty, McVittie, Rubic, Hogle, Burns, Walford, Kallio, Christakos, Woitowich.

They Keep General Office Spic

Gleaming woodwork and shining floors greet the General Office staff at Copper Cliff when it troops in to work each morning. Members of the "silent service" which is responsible for the spic and span appearance of the big building are seen here: left to right, John Livingstone, dean of the janitor corps with 17 years on the job; Sid Anderson, who worked for 12 years in the plant before joining the janitor crew six years ago; Paul Jansson, the celebrated cross-country ski champion, who has just returned from a three-month trip to Finland to visit his aged mother and who says Canada looks better than ever to him; Alma Puppato; Angelo Delmul, who has been with the janitor corps for 14 years. Seated is Isabel Martin. Other members of the efficient, hard-working crew are Yolanda Zilio and Mary Rinaldo.

FINEST EQUIPMENT FOR LAB. AT COPPER CLIFF HOSPITAL

As a result of the Company's policy of furnishing every department at Copper Cliff Hospital with the most modern equipment available, the institution has what is recognized as one of the finest medical laboratories in Canada for a hospital of its size.

Top picture shows the immaculately clean lab., which is equipped to handle blood counts of all descriptions, all types of medical analysis, and blood chemistry for the detection of some 20 abnormal values which may occur in the blood. In connection with blood chemistry, a particularly interesting piece of equipment is the photo-electric colorimeter, which measures the density of the blood color to aid in determining any unusual condition.

The lab. maintains a "walking" blood bank —a list of men of all blood types who are working in the plant and are available on a few moments' notice to give transfusions.

Operating one of the lab.'s high-powered binocular microscopes in the second picture is the technician, Bob Paton, who first started at Copper Cliff Hospital in the spring of 1938, and returned last January by popular request after serving almost five years in the Navy part of the time on the aircraft carrier HMS Puncher. Bob is proud as a peacock of his lab., and won't even let anyone else "scrub the deck" for him.

He was married in 1941 to Miss Anna Kraul of London, who was a nurse-in-training when the persuasive Scot appeared on the scene. They have two kiddies—Bob Jr., 3½, and Jane Ann, one year; they live in Copper Cliff.

All men are not born with genius, but every man can acquire purpose, and purpose is the backbone and marrow of genius.

—Bulwer.

HOW IS YOUR BRAIN-POWER?

Well, he made it. The man Harrison, we mean. On a technicality, of course, we might have needled him into that barking fox act on the post office steps, but it didn't seem quite cricket in view of the circumstances.

"You win, Uncle," Clarence wrote to us the day after the paper came out. "The Triangle had been delivered almost two hours before a chum tipped me off that I had better take a look. I took a look and — oh, brother — I could see that this one was a honey. I thought I'd be lucky to get the answer in two days. I learned to crawl years ago, so just get me a fox to give me lessons in barking, and I'll deliver the goods."

The catch was that within two hours after he got the paper, Clarence had a sheet full of 4's in answer to the November brain-curdler. So, what with Christmas coming up and such, we're relenting . . .

It was a toughie, too, judging by the large number of fans who didn't turn in solutions of how to make those four fours total every number from 1 to 21 by applying addition, subtraction, multiplication, or division, with the use of one decimal point permissible but no squares or square roots or biting in the clinches allowed. The only people sending correct answers to be judged by the Research Dept., which submitted the problem, were Clarence Harrison, E. H. Capstick of the Concentrator, Walter Dydyk of Murray Mine, Lionel Roy of Copper Refinery, and Steve Cuthbert of Port Colborne.

"Oh, so you want to play rough," wrote Cuthbert, and enclosed a doozer which we're using as this month's challenge to the intelligentsia. Hang on to your thinking caps, kids; here we go:

PORT COLBORNE INCO

CNORL

BINOR

BNRRP

NNICN

BRORO

CLCTE

NIRRN

OCRI

Now assign a number from 0 to 9 to each of the letters so that the problem works out arithmetically. We're warning you, it's a heart-breaker.

Calamity and prosperity are the touch-stones of integrity.

—Pagoda Proverb.

FROOD JUNIORS ARE CHAMPS

The reorganization of the Nickel Belt junior baseball league, after a lapse of several years, was a feather in the cap of its supporters and a big boon to a bunch of smart young senior prospects. Frood took the title this year, defeating Conision three games to one in the playoffs, and here's the lineup that did the trick: back row, left to right, Eldon Carmichael, Johnnie Luptak, Johnny Barbeau, Bud Hall, Floyd Johnson, Norm Flowerday (assistant coach), and Ed Fortier; front row, Bernard Kallies, Don Soulliere, Toby Leipala, Cleo Lalonde (mascot), Freddie Stevens (coach), Henry Boyd, and Ed Lacosta. Absent, Art Hughes.

MASSED CHOIR AND CAROLS AT CLUB CONCERT

The Christmas theme will predominate in the second program of the Little Symphony Concert series to be given at the Copper Cliff Club on Sunday evening, Dec. 21. An impressive array of talent has been booked by the series impressario, Roy C. Barnes, to provide a memorable evening in the spirit of the Yuletide season.

Combined choirs of three Copper Cliff churches, St. Stanislaus Roman Catholic, St. John's Anglican, and Copper Cliff United, will blend their voices in Christmas anthems under the leadership of Mrs. E. C. Lambert. The Little Symphony Orchestra, with Michael Moore of Sudbury as guest conductor, will play special arrangements of Christmas music. The audience will join at various stages of the program in singing Christmas carols.

Creighton Couple To Sing

A gifted Creighton couple, Mr. and Mrs. Grant Boland, will be vocal soloists; Mrs. Boland is a soprano and her husband a baritone. Norman Kneeshaw, L.R.S.M., of Copper Cliff, will play two piano selections. Rachmaninoff's Prelude in C Sharp Minor and the Hungarian Rhapsody by Liszt, and Archie Canapini, the well-known Sudbury violinist, will also be a guest artist. A string quartet from the orchestra will be composed of A. G. Bell and Mike Shamley, violins, Rev. F. Bain, viola, and Ezra Lemke, cello, and will be accompanied at the piano by Miss Naomi Perras.

The program will be announced by Arnold Ross, chairman of the entertainment committee of the Copper Cliff Club, and will commence at 8.45 p.m. A capacity audience is expected.

Great ability without discretion comes almost invariably to a tragic end.

Barbara Silver A Star Performer

Following in the footsteps of her athletic pappy, Art Silver of the Mines Dept., Barbara Silver distinguished herself this year by turning in the outstanding performance at Creighton Mine Public School's track and field meet. She won all possible points in the events for her age group.

Other champs declared at the end of a highly successful day's competition were:

Boys: 6 and 7 years, Frank Morassutti; 8, 9, 10 years, Walter Softich; 11, 12, 13 years, Tom Stefanko; 14 and over, Harry Pentney.

Girls: 6 and 7 years, Barbara Silver; 8, 9, 10 years, Bertha Zlonis; 11, 12, 13 years, Seba Stephenson; 14 and over, Sophie Kuzma.

The gladiators were divided into two groups for team competition on the day's events, and the Blues took the Whites into camp with 63 points to 56.

Wotta Mug!

Want a beer mug with everything but jet propulsion? Go to Australia.

An Australian information bureau reveals the special features of a super beer mug invented by a Brisbane sewage contractor.

The special features include:

1. A built-in instrument panel.
2. A signal light to indicate when the mug is nearly empty.
3. An automatic horn to attract the barman's attention.
4. A mechanical fly swatter.
5. De-frothing apparatus.
6. A photo-electric eye to warn of beer drip.
7. A thermometer to test beer temperature.
8. A hydrometer to detect the presence of water in beer.
9. A gyro-horizontal gauge to register sway.
10. A patent non-slip lip-grip.
11. A built-in folding ash tray.
12. Hydraulic compression struts so that the mug can be banged on the floor or bar with safety.
13. A tap extension tube for drinking in a recumbent position.
14. The mug is also equipped with a "spring-grip for passionate drinkers."

PRINTED IN CANADA