

The Triangle

Editor, Rudolph Kneer, Copper Cliff Associate Editor, Les Lewis, Port Colborne



On the cover . . .

One of the numerous "In-The-Hole" drills now in service at Inco underground mines. That's John Ratushniak at the controls of the drill on the 2000-foot level of Copper Cliff North mine.

Introduced to underground operations back in the early part of 1973, "ITH" drills have now completed in excess of 500,000 feet of drilling.

More about John on the back page of this book.

Cover photo by Peter vom Scheidt

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Appointments

Arne Kallio, co-ordinator, surplus disposal.

James Kirk, general foreman, matte processing.

Rudolph Kneer, editor, "the triangle", Public Affairs.

Ernest Lalonde, process foreman, Copper Cliff smelter.

Jack Lonston, co-ordinator, capital purchasing.

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Tom McConnell, planner, Garson mine.

Pep McMullen, secretary to the president, Copper Cliff.

Ken Milner, safety foreman, Copper Cliff safety office.

James Pajunen, survey party leader, Garson.

Nick Palandra, supervising buyer. Don Pierce, construction general foreman.

Barry Price, planner, Copper Cliff engineering.

Brian Rogers, chemist, Copper Cliff copper refinery.

Paul Scott, mine foreman, Copper Cliff South mine.

Kathy Shannon, maintenance clerk stenographer, Copper Cliff central shops.

Dennis St. Jean, process foreman, matte processing.

Ron SymIngton, supervisor, inventory control.

Mary Woltowich, plant security guard, plant protection, Copper Cliff. Ernest Zeitz, programmer, computer systems, Copper Cliff.



Meet John Hanion and wife, Josephine, with their two fine children, Reginald, 4, and Darlene, 6. John and Josephine are active bowlers, and the family enjoys camping during the summer months. John is a jumbo driller at Copper Clift North mine.



This is the family of Copper Cliff South mine diamond drill helper, Edward Crawford. Included are his wife, Marie, and their three boys, Edward Jr., 8, Lance, 2, and Wayne, 5. The boys enjoy visiting their grandparents' farm on beautiful Manitoulin Island.



From the Copper Clift nicket retinery, meet Garry Nahwegabhow and his wife, Ann. That's Leah, 4, on her mother's lap and Tanya, 5, in front of her father. An avid hockey player, Garry is also the sports representative for the nicket retinery.

Family Album



Charles Gatt, a painter in the mechanical department of the Port Colborne nickel refinery and his wile, Gail, are active Port Colbornites. Shown on the stairway in their attractive new home with mom and dad are Andrea. 5, and Jason, 2.

Abra Cadabra! A drop of some mysterious chemical and a rock libration A wellable mineral becomes non wellable. The lizing lowal folia bubble

Dughens It's all part of the magic of flotation

reagents

"The may blot what" i you're probably ask ng?

Pave you ever wondered now our company goes about separating the valuable minerals from the not-sovaluable portion of the preview mine?

We i — it shall part of an operation called Folation to method which transforms previously low-grade inviend into a commercial source of nicket Piolation has been a major factor in making possible the continued growth of Canadian nicket production

Curing lielation iair bubbles are lorded to rise through one pulp contained in Polation de la located in worth of indols mills. Only serected minorar particles adhere to the bubbles, while the remaintion particles sollle by gravity. The minerals that ribar on the bubbles are skimmed off as a location due togethow that sink are rejected as underbow

It all sounds relatively simple - directly in?

But it's not. Why, whoever heard of maket or copper libating? They don't in wishing wells, so why would they in flotation cells? And whoever heard of bubbles strong chough to kit mineral particles? Grit sinks to the portion of a tub even in a bubble bath.

So this is where the magic comes in

The wondrous key to the flotation process is the addition of obsymmetric reagents to one pulp. This treatment makes the desired minorals — Tke micket and copper suphides — non-wetable and Loannole, white allowing the valuetess minoring to romain wetable and non-flourable.

So that we could explain it all to you, "The triangle" visited Gerry Grilett, super-intendent of minoral dressing at the Clarabetic mult to not the towdown on the why sland wherefore's of those myst-carreagents.

According to Gerry, some reagents are collectors, some are frathers and still others are modifiers. A cullector is a chemical which adholes diself to suiphide pathnes, gilling them a water-repetent coaling that readily adheres to shair bubble. A froher is a chemical which

those magic flotation

towphens the bubble wall, prolongs (is site, and tous helps create a firal). A modifier is a reagent walch controls the effect of the corrector. For example, in some instances many of the collectors may make cowanted minorals hoalable in addition to the selected one. In tass cases, the modifier would a ter the surface of the undestable minoral so that the corrector would hall be absorbed and flocation of that miseral would be inhibited.

Incurses a chemical called xanthale as its collector and SA 1263 as its holfher (They even sound mag cal, though the tealization that SA 1263 in simply, a form of alcohor somewhar dutis the effect (The depression modifier used by Inco Io inhibit flotation of some of the minerals is time.

At any rate, the results of the lade i on of these reagents are suite astro-indire) and undoubledly a booh to the mitting industry.



One of many flotation reagents, copper sulphate is used at the Clarabelle mill to promote separation of pyrrhotite. In the picture is Gerry Gillett, superintendent of mineral dressing.

reagents

A bird's-eye view of one of Clarabelle mill's flotation cells. Forced to rise through ore pulp circulating through the cell, air bubbles attract selected mineral particles.



One of the cell banks in the Clarabelle mill flotation area. The froth lifts valuable minerals from the cells. Cleaning build-up from cell lips is Ron Pleuna. Known as concentrate, the overflow is piped to Copper Clift for further processing.



At the Cooper Cliff mill, lime is added to the pulp in the grinding circuit, acting as a depressant on the pyrmotite (iron sulphide) in the ore. In the flotation cells, the xanthate affixes itself to the sulphides of copper and nickel; air bubbles, caused by the agitation in the flotation cell, are toughened by the CS 1263; the particles, partially covered with xanthate, prefer air to water and attach themselves to the air bubbles; each "balloon". with its passengers, rises to the surface of the water. Because the bubbles and, consequently, the froth are strong, they hold their valuable mineral load until it can be removed. At this point, the brass-coloured bubbles, containing their nickel and copper sulphides, are skimmed off as a concentrate.

Says Gerry: "The entire bulk flotation

those magic flotation reagents

process lasts about 45 minutes. This is the time the average particle spends in the pulp, or the average time required to clear as many sulphides as possible out of the pulp."

He adds: "The reagents are the heart of the flotation process."

Actually, reagents are quite particular about the particles with which they team up. A collector won't cozy up to just any chunk of ore. First, ore which has emerged from the crushers must be reduced to even smaller proportions. It's pounded to powder size during a wet grinding process and this is the stage at which the collectors will react — when the surfaces of each particle are fresh.

Initially, except for the modifiers, reagents are added after the grinding circuit. They are added to the pulp, or slurry, at the beginning of each flotation stage and replenished as needed. At these times, about one tenth of a pound of xanthate and two hundredths of a pound of frother are added for every ton of pulverized ore. Flotation continues round the clock and the Frood-Stobie mill, with its 15 banks of 24 flotation cells each, is capable of processing 24,000 tons of ore per day, while the Clarabelle mill, with its 24 banks of 22 cells each, can handle as much as 35,000 tons per day.

"The flotation operation is an extremely efficient method of recovering nickel and copper sulphides from the raw ore," says Gerry.

Following grinding, the resulting pulp contains about one per cent copper and one per cent nickel, but by the time flotation and further processing have been completed at the mill, and the concentrates are ready for delivery to the smelter, copper concentrate assays approximately 29 per cent copper and nickel concentrate assays about 10 per cent nickel.

That's proof positive of the success of flotation — a process which would be virtually impossible without that little bit of magic hocus pocus from flotation reagents. While Inco's interest in local rock is strictly professional, Albert Fallu's interest is purely personal.

Albert's with security and plant protection at Clarabelle mill, and has been with the company since July of '46. A couple of years ago, his youngsters were going to throw out a shoebox full of stones they'd collected. "Hotd it!" Albert was going to DO something with those colourful stones. And do something he did!

A little imagination and a lot of work later, Albert produced a handsome 2½ by 1½-foot picture ... of sorts! With a frame already at hand, he carefully

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arranged the stones on a backing of wire mesh on plywood; then, using polyfilla for holding power, he sprayed the end result with clear plastic. Et voila! An unusual conversation piece to be proudly displayed on the bar he decided to make. Out of rocks.

One thing just naturally led to another, and Albert, still heady with the sweet taste of success, started planning a stone bar for his rec room. He gathered local "samples" wherever he travelled ... Estaire, the River Valley area, Red Rock, Manitoulin, Sudbury, Copper Cliff ... they're all represented, and there's even a chunk of salt from Windsor! There's gold-bearing white quartz, black granite, mica, and, says Albert, "who knows what else ... I'm not a geologist!"

Working about an hour a day, he spent three months creating the rock bar to cover a basement cement block retaining wall. It was tedious work. He had to start from the bottom and build up. And he had to wait for each layer to harden before he could continue. But it has all paid off, for now Albert and his wife, Veronica, proudly entertain their friends from a homemade bar, four feet high, six feet long, and three feet deep.

Then, this spring, when it was known that the children — all grown up now were descending for a visit, Albert channeled his stone-handling prowess to the making of a backyard barbecue. Again success! Using field stones, he put the barbecue together in record time; then, later this summer, he "dressed" it with coloured rocks from the Sudbury area.

An avid fisherman — his 15½-pound lake trout won a Frood Athletic Association fishing contest trophy in 1967 — Albert hosted a neighbourhood fish fry this summer, putting both the bar and the barbecue to good use.

So don't throw out those rocks the kids've been bringing home — save 'em up and plan your own project!



Albert Fallu and his homemade bar. The rocks and stones are from various Northern Ontario localities.



Albert and wife, Veronica, at their homemade backyard barbecue. Note the 15-pound lake trout.

Fallu bar and barbecue

Jackie Champagne ...

Inco's new stationary engineer

To look at Jackie Champagne, you wouldn't figure she'd be too much different than any other woman. But behind that sunshine smile and beneath the curls, there beats the heart of a dedicated stationary engineer!

Jackie is Inco's very first female stationary engineer and also the first female graduate from Cambrian College's stationary engineering course. Her husband, Percy, is a stationary engineer, too, and to top it all off, they both work at the same place ... Inco's matte processing complex in Copper Cliff.

Not too many wives can say they do the same work as hubby, and, according to Jackie, it's a big advantage. "Before, I could never understand some of the problems that Percy would tell me about. Now that I'm doing the same kind of work, I'm beginning to understand what he was talking about. In fact, ever since I started, we've had fewer arguments than ever before''.

Jackie's from Thunder Bay, and Percy's a local product, born and raised in St. Charles. They met at a New Year's dance in — of all places — Moosonee! At the time, Percy was a stationary engineer with the federal government and Jackie was visiting her sister. They met, married, and moved to Copper Cliff, where Percy was scheduled to join Inco.

"After we were married, I didn't do much of anything", said Jackie. "It wasn't long before I was bored silly just sitting around the house. Then Percy mentioned that Cambrian College was starting a new course in stationary engineering and I thought, "Why not!" I called the course supervisor, Mike Horne, who told me that there was one opening. Next thing I knew, there I was, taking the course!"

Jackie doesn't consider herself a women's libber. "That idea never crossed my mind. I'm not trying to prove anything. I just believe that women shouldn't have to do certain jobs just because they're women. They should do whatever they're capable of doing, and they should do whatever is most interesting to them".

At the end of the 40-week Cambrian course, which includes about 12 weeks of practical and theoretical experience, the successful student is a fourth class stationary engineer. In July of this year, Jackie received her practical experience as a student employee at Inco and, in September, she was hired on full time. She recently wrote her final exams, and is now a stationary engineer, fourth class.

While a student trainee with Inco, she learned a lot from the more experienced stationary engineers . . . including her husband. But "I wasn't even thinking of him as my husband while he was teaching me", Jackie said. "It's a hard thing to explain, but it is possible to separate your private life from your job".

At work, Jackie doesn't completely ignore the fact that Percy's her husband; when they're on the same shift, they always have lunch together, and the conversation could quite easily lead to a discussion about their next hunting trip. You see, last year Jackie bagged four partridgel You might even say that "she puts the meat on the table for her family". But knowing Jackie, you wouldn't. Because you'd soon realize that she's not trying to prove anything; she's just being an individual . . . a pleasant rarity in this day and age of conformity.



On the job at number two powerhouse in the matte processing complex. That's Jackie Champagne and her husband, Percy. We'll leave it up to the reader to guess who gives pointers to who!



Jackie Champagne checks out a problem with her instructor, Earl Neil, during the theoretical part of her course. Earl teaches the stationary engineering course at Cambrian College and says Jackie did a great job.

Women's Invitational

A much-anticipated highlight of the Sudbury golfing season is the Women's Invitational Golf Tournament held at the Idylwylde Golf and Country Club. This year was no exception; over 140 ladies participated in the 15th annual event, including arrivals from Toronto, Hamilton, Cambridge, and other points in Ontario.

The two-day affair began with a firstnight fashion show, and wound up with Jean Stewart taking possession of the Bernice Green Invitational Trophy, which made its debut this year and will be presented annually to the tourney winner. Bernice is the president of the ladies' section of the Idylwylde Golf and Country Club, and is the wife of Gar Green, Inco's vice-president of mining and milling, Ontario Division.



Jean Stewart, left, winner of the 1975 Women's Invitational Golf Tournament held at the Idylwylde Golf and Country Club receives the Bernice Green Invitational Trophy, presented by Bernice Green, centre, and Pat Keaney, tournament chairwoman.

Wise Owl Club



Dennis Cunningham, left, assistant safety superintendent at the Iron Ore Recovery Plant, and Vince Whiting inspect the glasses that saved Vince from serious injury to his right eye. A piece of metal about the size of a .22 bullet had shattered the right lens.

Vince Whiting, a maintenance mechanic at the fron Ore Recovery Plant, was helping construct an addition to the number one sintering machine when he noticed scratches on the lenses of his safety glasses. He replaced them at the safety office and went back to his job. which involved using a five-pound sledge hammer to drive a drift pin into two flange holes. As he hit the drift pin, a piece of metal about the size of a .22 bullet broke off and shattered the right lens of his safety glasses. When he realized that his eye hadn't been injured, he became an instant believer in the value of wearing safety glasses.

"All the money in the world couldn't have replaced my sight if I'd been blinded", said Vince. "If it weren't for my safety glasses, I'm sure I would have los! the sight of my right eye". Wew of the valley from Levack Minim – in drawing from the band of Montreal artist CR D. 1 Wilson, is selected from a series of 30 that 1R D – previded rounds us set to international blockets minims, plants and to surrounding areas in the Dudbury district and at find Colonian. The reproduction on the other encied this trial out studies the teach of a set of 12 that is only will be polyted without of the 1975 issues of 10 to manage.

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Ideas pay off!



\$665 William Millar matte processing



\$400 Gerry Sabourin and Paul Levesque smelter maintenance

This month, 28 employees collected \$4,700 in bonus money from the suggestion plan.

Jim Stiller, smelter maintenance, was awarded more than half the total amount when he picked up \$2,520 for suggesting that worn raceways inside converter tuyere bodies be rebuilt instead of replaced.

William Millar, matte processing, pocketed \$665 for designing a new type of guide idlers for bucket elevators.

Gerry Sabourin and Paul Levesque, smelter maintenance, split \$400 for proposing that a different type of bearing be used for pallet truck wheels.

Werner Kroetsch, smelter reverbs, took \$105 home for suggesting that furnace sample probes be cooled with treated water.

There were two separate \$100 awards. Lee Alexander, smelter reverbs, received \$100 for suggesting that wheelbarrow handles be reinforced with braces to prevent breakage, while Ray Gouln proposed that a hinged door be installed on the fettling drag overflow door.

Walter Plante, central shops, picked up \$90 for his idea to salvage the lugs on burned uptakes in the converter building.

Awards for \$75 were handed to Henry Lamothe, I.O.R.P., and Gerald McIntaggart, purchasing and warehousing. Henry suggested that cottrell door openings be half covered to allow for easier maintenance, while Gerald proposed to ship small articles by mail rather than by transport.

Ernle Evertit, smelter maintenance, received \$50 for proposing that a scatfold be installed permanently at number 52 conveyor belt, to be used for maintenance. Laurent Paradis, I.O.R.P., saw the need to install an inlet line support at the kettle pump. Robert Turner, I.O.R.P., suggested that larger drains be used at the repulp tanks. The team of **Kelth Moulton** and **Albert Zega**, matte processing, split \$40 for proposing that screening be installed over the screw conveyor at the baghouse. **Alfred Wilkle**, I.O.R.P., pocketed \$40 for designing a tool to remove pellet machine wheel bearings.

There were four \$30 awards. Roy Ladurante, matte processing, suggested to have mesh flooring over the head tanks, while Kerl Raaska, smelter maintenance, came up with a safety suggestion to supply blasting guards with fluorescent vests. Harold Stevenson and Robertson Walker, LO.R.P., collected separate awards; Harold, for suggesting that a flashing light be installed at "A" crane aisle and Robertson for proposing that wrenches be welded to magnetic filter drains.

The following employees received \$25 bonuses. Aicide Carriere, I.O.R.P., saw the need to install a temperature gauge on the copper distributing tank. Yvon Carriere, matte processing, suggested that a guardrail be installed at the walking-beam in the fluid bed roaster building. Ronald Garbut, I.O.R.P., came up with the idea to incorporate a reset button into the high ammonia alarm stop button. Oscar Grouls, I.O.R.P., proposed that a collar be installed on the tank mixers. Sydney Koslw, matte processing, suggested that a drain pipe be installed on the canning line bins. Phillip LapoInte, matte processing, saw the need to install a ladder at the top of the surge bin for better access. Dullio Orazletti, smelter reverbs, came up with the safety suggestion to lower the safety platform at the nickel reverb scrap hole. Samuel Raymond, matte processing, proposed that a drain pipe be installed on the canning line bins.

Last, but not least, is **Robert Wright**, I.O.R.P., for suggesting that a stop/start switch button be installed for the solution tank pump.

Jim Stiller hits \$2,520 jackpot



\$2,520 smelter maintenance



Joe Carroll, machinist apprentice. Garson mine.



Dave Carroll, process labourer, matte processing.



Danny Carroll jr., apprentice maintenance electrician, smelter.



Dan Carroll, drift driller, Garson mine. Four of his five sons are with Inco. Terry Carroll, motorman, Kirkwood mine.



Law Stanled Sourk in 1949, when Den-Clebox, of Haldex, New Section, decided to with non-natur, Rethy Laborated in Garsen, Optimic

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"comply there sons level is the prior THE WORLD'S LEAVEN STREET, S. C. motorman on the 1900, evel of FaceWood, mine. There is neglige addition in Obted er of last year, after 50 shifts (40) years at the Onlygin strugg of Section pair is Tolente Helshow reastined at Camprian Collection on frue his studies. In electronics ensuring technology Which does to miss) hard substitutions school diring the day and vound maar meliop is quit. Als goigh the nasings definition decision in clotter as yet. 21 years of term foots thin libe so as encyclere woulk: make dag Liepby 1

Dave is the fourth son of you and joined the company in February of this your is a process labelater. Phille precession. He prices to stay with the company flat would like to be' his a table by one of the crops located into marked in maybe to ow in my due s footsteps.

Careering and Carrolling

. . . it's a family affair at Inco . . .

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(cary conflicted how independent that they relate with nool out disinice. Aspect to when they can be leaded a who aspect to when they can be leaded a who. By Gayle Climole

A year when, and after six monthy of Garton mine, the transferred to Freed to be where the station by apprentices to pisculturan bust

Shysiche about nis end and prothers ist nool if think it's pretty bood (here's two more to go (Chris 13) Candy 14, and they's aken, wild up at rock tool. By the time ded action, young Christial protocoly peiro

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But one miniply for survive, the Casto in directed by making incolumitants of the Orest Andrews, dog trainer, with Colonel and Turk in the dog-pen behind his Lively home.



Orest Andrews has "gone to the dogs".

But that shouldn't surprise any of you who know the graphics designer with central mines training at the Frood-Stobie complex.

Why, Orest has been going to the dogs ever since 1952 — when he bought Mike, his first springer spaniel, and turned to amateur dog training as a hobby.

Now Orest doesn't train just any dog. He's quite particular about his students, in fact — no Heinz 57 variety for him. It's not that he's a snob though. It's just that it requires a very special type of animal who will run for miles — in circles, swim and wade through murky swamps while cattails tickle his nose and then return to his master with an unruffled duck or pheasant in his mouth — when he'd just as soon have it in his stomach. And all for a pat on the head!

From the time he was knee high to a grasshopper, Orest was surrounded by dogs and, since his parents were fond of menageries, cats and pigeons, too.

After commencing work with Inco, marrying Min and starting his family of three, Orest decided it was time to buy his own dog. He knew Harold Bruce, founder of the Sudbury District Kennel Club, and after buying a spaniel, he started learning all about training dogs through his affiliation with the club.

Since then he's trained Joe, Brandy, Trump, Trigger, Sabre, Joker, Ebon, Buck, Pete, Shorty, Turk and Colonel, all his own dogs who've accompanied him on hunting expeditions through the years, and he's also helped many owners train their own animals.

The training process for the hunting dog, whether a spaniel or a retriever, is a never-ending one. A spaniel is a flush dog, ranging ahead of the hunter, flushing game into the air, sitting until the birds are shot and then, on command, retrieving them. Retrievers on the other hand simply walk "at heel" or sit in a blind, and then retrieve the birds. Actually, Orest describes their training as "simply developing their natural instincts."

Orest likes to start training when the dogs are about six weeks old, at which time they are taught the basics of coming when called, sitting and retrieving a ball, or rolled-up sock, on command. At this point, the dog learns quickly

His dog is

by repetition of one-word commands. In later stages of development, the trained dog will respond to blasts of a whistle and hand signals.

Twice weekly, Orest takes his class of six to twelve canines, with their owners, into an area in the district most resembling an actual hunting area. These training areas must be changed regularly, so the dogs don't become too familiar with them.

Orest is overseer of the training sessions which begin with each dog, in his turn, completing a series of retrievals from the swamp at the command of his master.

Sometimes, a dog may not listen, in which case his owner can get quite wet — retrieving his dog. Punishment may consist of a scolding, or a slap with a leash; the reward is a simple pat on the head. "That's all they need," says Orest. "Most animals are more than willing to please." Naturally, there have been occasions during Orest's training career when a dog has not taken kindly to his scoldings. "Some dogs can't stand the pressure of training and get fed up with the repetition," he explains.

And there are dogs, though few and far between, which are untrainable. They may be too hyperactive and prefer to work for themselves, rather than their owner. In these instances, by the time the hunter gets to his bird, his dog is picking feathers out of his teeth.

Even at the age of one year, a dog may be set in many of his ways. But contrary to the popular adage, Orest says you can teach an "old" dog new tricks.

Orest Andrews, graphics artist with central mines training at the Frood-Stoble complex.

Tom MacDonald, left, an electrician at Copper Cliff, and Orest Andrews have a heart-to-heart talk with Tom's labrador, Rogue, during training.



picking feathers out of his teeth?

As a director of the Sudbury District Kennel Club and of the Canadian National Retriever Association, Orest spends much of his spare time at field trials for hunting dogs, during which a normal day's shoot is simulated and the dogs' performances judged. Orest is often called upon to judge official trials from coast to coast, sponsored by the Canadian Kennet Club, and informal "picnic" trials in Northern Ontario.

Orest feels the key to being a good dog trainer is not spoiling the animal. "I consider my dogs as working dogs, not lap dogs. I keep them outside in roomy kennels and they have a good stable diet. They get lots of exercise, but I seldom let them in the house. Their reward is to go out in the field working."

And that, too, is Orest's reward for his expensive (at least \$1,000 a year for running and keeping his dogs) and time-consuming hobby.

Every year when hunting season rolls around. Orest can be found miles away from his Lively home. He could be in Saskatchewan, Manitoba, or Northern Ontario, up to his waist in mud and smiling, for he's hunting duck with his two favourite students — five-year-old Turk, and Colonel, only 17 months old, who don't mind that they have to "work like dogs."

At the word of command from Orest Andrews, Turk leaps into action to retrieve a dummy trainer,

Shedding water as he emerges from the lake, Turk has retrieved the dummy trainer and returns it faithfully to his master.







Terrence Podolsky (right) vice-president responsible for Inco Canada's worldwide exploration activities, with Gordon L. Colgrove. executive assistant — exploration.

Inco's new exploration team

The recently announced restructuring of Inco Canada's exploration department established four groups within the organization, Terry Podolsky, vicepresident, told "the triangle" in an interview this month. The four groups are mines exploration, field exploration, exploration research and evaluation, and exploration administration.

Terry, whose election as vice-president was announced earlier this year, is responsible for directing the company's worldwide exploration activities. Born in Thunder Bay, he joined Inco at Copper Cliff in 1954 as a research geologist.

"The company's exploration activities have been changing over the past few years," Terry Podolsky explained. "A number of metals have been added to the traditional exploration shopping list, which, until several years ago, placed very strong emphasis on nickel and copper. The Department's specialists,

many of whom are based in Copper Cliff, are being called on to tackle new kinds of problems in new locations, including those generated by our extensive activities. outside of Canada. Currently, much of the field exploration outside of Canada. and to an increasing extent in Canada, is being carried out with partners, placing greater emphasis on the joint venture approach to exploration. The developing nickel projects in Indonesia and Guatemala require their own mines exploration personnel, thus a new facet is being added to the oldest segment of the Company's exploration team. The new organization will be better equipped to handle the Department's changing role.

"Inco Canada will spend about \$25 million this year on mineral exploration. About 130 geologists, geophysicists, and other specialists and a somewhat larger number of support personnel are engaged in the Company's worldwide search for resources of nickel and other minerals."

Glen Thrall, director, mines exploration, is responsible for the functional direction of mines exploration activities in the Ontario and Manitoba Divisions, as well as in Indonesia and Guatemala. Glen has been with Inco for 35 years, many of them spent in Copper Cliff and Thompson.

Dr. Ian Gray is director, field exploration. Ian joined Inco in 1965 and has handled exploration assignments in Copper Cliff and Australia.

Within the field exploration group, Dr. John Guy-Bray is manager, field exploration, North America, with responsibility for the conduct of these activities in Canada, Mexico and the United States. Guy joined Inco in 1964 as a research geologist in Copper Cliff. He is widely known for his work on the meteorite impact theory for the origin of the Sudbury basin structure. Reporting to Guy are the North American regional field exploration managers — Herb Stewart in Canada, Allen Sheito in Mexico and Dick Agar in the United States.

Also within the field exploration group, Al Spence continues in his position as manager, field exploration, overseas. Except for a brief return to school for post-graduate studies, AI has been with Inco since 1960, initially as a mine geologist at Sudbury, followed by field assignments in Guatemala and Australia. Working with AI are his overseas regional managers, Eoughan M. Laing in Australia, Steve Sopher in Brazil, Beni Wahju in Indonesia, Steve Malan in South Africa and Warren Delaney in the Philippines.

John Dowsett, as manager, applied geology and geophysics, has responsibility for providing technical support to worldwide field exploration activities. John is also a Copper Cliff veteran, having worked there for 17 years after joining the company in 1952.

Henry Harju is manager, exploration research and evaluation. Like AI Spence, Henry's service, which began in 1961, was interrupted by a return to school for further studies. Most of his Inco assignments involved field exploration in Canada, Guatemala, Australia and Indonesia. In the Toronto office, he is assisted by Dr. Wilf Lambo, supervisor, special studies, who joined Inco in 1971. Dick Alcock, supervisor, geological research and laboratories, who is based at the J. Roy Gordon Research Laboratory in Sheridan Park, also assists Henry. Dick joined Inco in 1964 at Copper Cliff.

The fourth group, exploration administration, is the new responsibility of manager Oryn Pritchard. Oryn joined the Company in 1947 as a Sudbury mine geologist and, following a three-year field assignment in the Thompson nickel belt, returned to Copper Cliff in 1957, where he was concerned with Canadian field exploration. Within the group, Keith Diebel, administrator, budgets and personnel, has spent many of his 27 years with Inco in Copper Cliff and Manitoba and has undertaken assignments in Guatemala, Australia, New Caledonia and Mexico. Karl McIntosh has been appointed administrator, property and contracts. Karl joined Inco at Copper Cliff in 1939 and, following a period of wartime service, worked on many Canadian field projects before assuming responsibility for keeping track of Inco's worldwide land holdings and legislation governing mineral lands.

REAVENTABLES REAVENTABLES REAVENTABLES



"When I first told him, dad just kept shaking his head, but he has accepted it now," says Mary Woltowich. "Dad simply couldn't picture his daughter as an Inco security guard." Appointed to her new position a short while ago, Mary was previously a steno at the Copper Cliff hospital and a clerk-steno at Inco's employment office. Mary is the sister of hockey great, Eddie Shack. Who says miners can't tell a Renoir from a Van Gogh? Pollywash! Take a look at the recent cover of "Light in the Dark", a monthly publication for employees at the Copper Cliff North mine and Clarabelle open pit. Says artist **Gordon Lalonde**, a driller on the 2,200-foot level and creator of the cover: "..., 'twas nothing, I just like to draw"





"Imagine our name on the headframe, and in big, bold letters," mused Mrs. Agnes Frood while visiting the Frood-Stobie mining complex recently. A descendent of Thomas Frood who, along with James Cockburn, located and staked the deposit which now bears the Frood name, she recently emigrated from England and now lives in Toronto. Said daughter, Jennifer, also on her first trip to the Frood-Stobie area: "It's quite something to see. Sure makes you feel proud of your family name."



An impressive number of people visited Inco's Sudbury operations from May 1 to Labour Day. A total of 15,670 visitors, to be exact. Final visitor of the summer was 12-year-old **Allison Bishop** from Westmount, Quebec, who is presented here with a Canadian commemorative coin set to mark the occasion. Senior tour guide **Tom Plexman**, left, Allison and her father, **Don**, give the new coin set the once-over.



NEWSMAKERS ... NEWSMAKERS ... NEWSMAKERS

What better choice than "Jo" Walmesley, general office receptionist at Copper Cliff, to present Inco's bronze medal to Maureen Dowds, a contestant in the shot-put event of the women's track and field competition, held recently at Laurentian University. One of the qualifying trials for the 1976 Olympics, Canadian athletes were pitted against competitors from the German Democratic Republic. "Jo", a well-known member of Sudbury's Sports Hall of Fame, was a contestant in the 1938 British Empire Games.





Polishing off seven 10-ounce steaks is no easy undertaking. "It's easier than smacking your lips," according to **Jack Simmons** of Creighton Mine. A participant in the recent CIM golf tournament, Jack had no trouble consuming no less than seven of the deliciously prepared morsels, and all within a five-hour period. Commented master chef **Hugh Judges**, divisional planner: "I don't know how he did It, but he just kept coming back for more "

Drilling a 6-inch diameter hole to nearly 400 feet from surface is the latest of the many feats accomplished by inco's drilling department. Utilizing an "In-The-Hole" drill, as depicted on the cover of this month's "triangle", the vertical holes are being drilled to carry fill to the old workings of the Mond Nickel Company at Garson mine's no. one shaft. According to **Tom Parris,** executive assistant to the vice-president, mining and milling, deviation has not presented a problem, with holes breaking through as planned. Hoistman Vic Baumruck of Creighton mine has never been known as one who spends his weekends tending his garden or trimming his hedge. Not he! A sports enthusiast from 'way back, Vic spends weekends and most evenings on soccer fields in the Walden area, instructing the young in the ever-growing sport of soccer. "It's really catching on," beams Vic, whose team, the Naughton Lions, were recent winners of the Walden minor soccer cup. "I know it takes a lot of time and effort to promote soccer in our area," says he, "but watching those kids play makes it all worthwhile"

. . .

Inco ranks were well represented at the third annual CIM golf tournament which had all the earmarks of a 100,000-ton blast except for the smoke. Blessed with glorious weather, some 140 golfers drove, sliced and putted their way through 18 holes at the Onaping Golf and Country Club. Thanks to master chefs **Hugh**, **Harvey** and **Steven Judges**, assisted by **Bob Lipic**, members enjoyed deliciously prepared steaks, complete with all the trimmings. Scanning the course are CIM members **Ken Hamilton**, **Bob Jach**, **Bob Bryson** and **Dar Eady**.





John Lightfoot, Terry Tweedle, Bud Meaden and John Ricketson are checking the scoreboard following a successful golf tournament of the Copper Cliff mines association after some 75 golf addicts braved the cold and windy weather for their annual tourney at the Chelmsford Golf and Country Club recently. According to tournament organizers Gerry Switch, Dave Stalker and Len Buillon, there were prizes galore, and the usual jovial atmosphere prevailed throughout the day's event. John Sarkins was the winner of the Bob Ludgate trophy with a score of 88, while AI Maskell won the Grant Bertrim trophy with a 95. Kurt Furness, who holed out at 95, took the Don MacKeigan trophy.



The fancy typewriter is actually a terminal connected to a main time-sharing computer in Cleveland. Norm Belanger, NC lathe programmer, feeds in calculations and gets back a computer tape.



15,200 pounds of grinding, milling, boring, drilling and threading potential — the NC lathe was installed this spring. Eric Romain, machinist and NC lathe operator, is ready to start 'er up.

It's on Tape

"We're happy with it . . . it's a good thing for the shop and it's already creating more work here".

"It's about four times as efficient, and will get better".

"Right off the bat, it's created two new jobs".

"It's accurate to one-tenth of a thousandth of an inch".

The remarks are from Cecil Tremblay, numerical control co-ordinator, Copper Cliff machine shop, and, just in case you're wondering, he's talking — quite proudly, we might add — about the shop's new Boehringer P 560 NC System ... or, translated into plain simple English, a computerized lathe.

What!?

A computerized lathe?!

Exactly!

It all started about a year ago, with a justification study on the economic feasibility of purchasing and operating a numerical control lathe — known as an NC lathe. The tape-controlled machine would definitely be a step forward in the modernization of the shop, but it called for quite an investment — like about \$200,000 for the complete system. The study set out to determine if enough work was available within the company to warrant such a machine, and if the available work could be manufactured economically on the NC lathe. This meant an inspection of warehouse stock,

searching for items with a relatively high turnover that could possibly be machined on the NC lathe, thus taking some of the strain off purchasing and warehousing. Results showed that there was certainly enough work potential, and that the NC machine would eventually be capable of producing warehouse items at a reduced cost.

So now when it's time for the warehouse to reorder certain items, the machine shop gets the order and is given the opportunity to perhaps better the cost.

Because of the NC lathe's output capacity, additional work is generated by the machine; for example, the justification study revealed that an additional 1,802 hours per year of milling, 442 hours per year of drilling, and 476 hours per year of grinding could be expected. The new lathe will do work that used to be contracted out, and, in fact, is a manufacturing plant in itself.

It'd be pretty complicated to try to describe all the technical aspects of the lathe and exactly how it works so we won't! Instead, we'll highlight the main essentials: when a work order comes in to the shop. Cecil checks it to see if the NC lathe could or should be used. Then the programmers - two new positions created by the installation of the lathe last spring - study the requirements, figure out the tools needed for the job, and feed their calculations into a TermiNet to obtain a computer tape acceptable to the lathe. The TermiNet is a terminal - looks like a big fancy. electric typewriter - that's connected to a main time-sharing computer located in Cleveland and based on a Geturn Programming System for NC lathes.

The programmer then gives the tape to the lathe operator, along with instructions for mounting tools onto the tooling system — turret — of the lathe. A Boehringer optical tool pre-setting device is used to locate the exact position of the cutting tools for each job; these dimensions, when recorded in the memory bank of the control cabinet beside the lathe, become known as offsets; an offset will measure the distance from the centre of the turret to the tip of the cutting tool, and will compensate for tool wear.

When the operator receives a tape from the programmer, he feeds it into the control cabinet and prepares the turret by affixing the required cutting tools for the job, such as threading, grooving, boring, or drilling tools.

Once this is done, the lathe is all set to go, properly programmed for the specific job at hand. The operator mounts the piece to be worked on, turns the lathe on, and watches modern technology at work!



Rick O'Bonsawin, machinist, makes final adjustments on the Boehringer optical tool pre-setting device, used to locate the exact position of the cutting tools needed for each job.

As Highway 144 leaves Sudbury and roams in a north-westerly direction towards Timmins, a scattering of highway signs indicate the presence of towns; Dowling, Leviack, Onaping and Cartier nestle behind trees, hills and along rivers. Separated by virgin bush country, they're remote from one another.

With the implementation of regional government, Dowling, Levack, Onaping and Cartier, henceforth designated as Onaping Falls, became one, related through shared services and political boundaries.

At the time, the people of these towns experienced a feeling akin to that of the new "in-laws" at a shot-gun wedding. With no previous bond to unite them, and not much knowledge of each others' affairs, the new arrangement was of no great significance, but presented, perhaps, the fertile soil for future animosity.

Such was the state of affairs when a survey, conducted by a group of summer students with the aid of a L.I.P. grant, set out to determine the needs and wishes of the various towns.

On the survey questionnaire, a number of interested citizens noted that a community newspaper could be the cement with which to glue the relationships between the towns. They figured that "communication" was the key word.

For those who had put their "John-Hancocks" down for a newspaper, a little surprise was in store. A meeting was called — a most peculiar meeting, without a spokesman, without anyone with newspaper experience. Within minutes, the interested parties were struck by a stunning realization — if they wanted a community newspaper, they would have to produce it themselves.

No one remembers exactly how it all happened, but, within the hour, a newspaper was born — the "Onaping Falls News". It was a spontaneous event.

"I'll sell the advertising!" shouled Darcy Bell, an Inco process technologist at Levack. "I'll write the sports," piped Dan Kelly, an Inco employee at the Levack mine warehouse. He claimed he went to all the games anyway. "Who can type?" asked another. Before long, every newspaper post was filled.

Thus the "Onaping Falls News" emerged, a volunteer community effort with the purpose of providing a line of communication to solidify the interests of



Chairwoman of the "Onaping Falls News", Joy Bell. The weekly, non-profit 12-page paper is published by a group of volunteers as a public service for the residents of Dowling, Levack, Onaping and Cartier.



No matter what... She goes

all the communities within Onaping Falls. The profits of the newspaper, if any, were to be distributed to needy community efforts.

"No organization which has applied to us for financial assistance has been refused", says a proud and pleased Joy Bell, the paper's chairwoman.

The "Onaping Falls News", a twelvepage newspaper, delivered by mail once a week, is now in its third year of publication.

As the newspaper evolved, it became apparent that some kind of constitution was required and that someone would have to be mediator for the group. The idea of a chairman or chairwoman elected annually by the majority of the newspaper committee provided a means of settling disputes over editorial content.

Joy Bell laughingly tells of the heated debates that take place on Monday nights at the newspaper's headquarters, the basement of the Falconbridge First Aid Centre. "Our writers and editors can get themselves pretty worked up about an issue in their town." Occasionally an inflamed and impassioned editorial will have to fall under group scrutiny. "We all read the editorial and argue the pros and cons." A vote is taken, with



Staff of the "Onaping Falls News". Standing, left, Maureen Ferguson, Levack editor; Leroy Talbot, Cartier editor; Jackie Murray, treasurer. Around table from left. Dan Kelly, sports editor; Julie Brekljacich, secretary; Kevin Suter, high school editor; Karen Nesbitt, Dowling editor; Hugh Ferguson, subscription manager, and Mary Ann Petterson, Onaping editor.

to bed on Mondays

the chairwoman casting the deciding vote. "That's our way of getting things into their proper perspective." Due caution has to be exercised because the newspaper is not, in any official sense, a business, and each of its members could be sued for libel.

By every conceivable measure, the "Onaping Falls News" has proved to be a great success. The merchants of the respective towns have expressed their gratitude unstintingly. There are no problems about selling advertising or gathering voluntary subscriptions. Everyone knows the money is going back into the community. The enthusiasm of the



Paste-up time with Kevin Suter, manager Darcy Bell and Dan Kelly.

readership is demonstrated daily by the jangle of phones in the homes of editors in Onaping, Dowling, Levack and Cartier "Hello, I have an item for the newspaper"

Don't think the sweet smell of success has filled the producers of the "Onaping Falls News" with delusions of grandeur. They remember only too well their trials and errors ... "at first we didn't know enough to stay within the specified lines ... half our words were missing along the margins." It didn't do their adult egos much good to realize that young Kevin Suter, a high school student with some experience on a school paper, was the only one with some notion of how things ought to be done. Nor did it immediately hit home that they had committed themselves to a routine that would take top priority in their lives. Joy Bell reflects pointedly ... "you can't just decide to get tired of it and go to the movies Monday night. Monday night is newspaper night ... come hell or high water." She recalls a day she wanted to throw it all overboard. "Can you imagine? The day of my daughter's wedding there I was, with hair in curlers, delivering newspapers to the post offices just an hour or so before the ceremony."

All agree, those Monday nights make it all worthwhile. The smell of Lepage's glue, the kettle boiling for instant coffee, the clatter of typewriters ... laughter and lively commentary, and a few hours later another issue of the "Onaping Falls News" is ready for the printers. Then, the heady glow of satisfaction ... a successful, purposeful community effort.

No matter what ...

She goes to bed on Mondays



Putting it all together. Dan Kelly and Coleman mine ventilation supervisor, Hugh Ferguson.



Tigers in tennis shoes

By Les Lewis

According to Lino Di Pasquale, coach of the Port Colborne Atom Division Allstar Soccer team, the day is coming when the "soccer bug" will hit area fans and rival the enthusiasm with which it is received in other countries.

"Soccer isn't an expensive game," says Lino, "all you need are 11 to 18 boys within a specific age group, and you have a team. Supply them with a coach who can give them basic instructions, and pretty soon you'll have a group of tigers in tennis shoes."

The Italo-Canadian Society in Port Colborne is the sponsor of Lino's team. In co-operation with the parents, who chauffeur the small fry to all the games and boost their moral with some lusty cheering from the bleachers, a very successful operation unfolds.

In preparation for this season, workouts began in March in the gym at Our Lady of Counsel School. This year, the team, in addition to the regular and Niagara Peninsula competitions, decided to try its luck in the Ontario Cup playdowns.

At the beginning of the season, 96 teams were entered. Port Colborne is one of the 16 teams still in contention for the Cup and continued on the victory trail with a convincing 4-0 victory over Dino's TV in a game played at the Optimist field in Niagara Falls. The boys average two games per week, with an additional night set aside for practising. Incidentally, the team is in first place in the house league and the boys are confident they will maintain that position.

Lino joined Inco in 1956 and is presently with the yard department, while Bruno Favero, the team's manager and trainer, started one year earlier and now works in the foundry additives plant.

As we approach the climax of another season, "hats off" to all those who so willingly donate their time toward the training and guidance of these youngsters.

As that wise old bird. Joe Azzopardi, would say, "A family that kicks together, sticks together."



That's coach Lino Di Pasquale talking to his players at half time break during a recent game played in Niagara Falls. He seems to be getting his point across to Paul Favero, John Di Pasquale, Wayne Rae and John Bidgood. Lino says the "soccer bug" is starting to hit area fans. Already many Port Colborne residents turn out for the games.



Continuing on its victory trail is this Port Colborne Atom Division Allstar Soccer team. Front row, left to right, Wayne Rae, Paul Favero, John Green, Ken Nan, Pat Ciantar, Stephen Gerencser and Steve Abel. Second row, John Groetelaars, Robert Longarini, Greg Zaparaniuk, John Di Pasquale, John Bidgood, Tony Citrigno and John Cavasin. Back row, Tony Trasatti, assistant coach, Lino Di Pasquale, coach, and Bruno Favero, manager.

When you've been with a company for over 40 years, specializing in one particular field all that time, you're bound to become quite proficient. Throughout those years, you've given your best, you've acquired a fair bit of knowledge, and, somewhere along the way, you've gained a reputation for really knowing your stuff.

Like Inco's Archie Massey.

Archie began his mining career back in 1929, at Frood mine. He went over to Garson mine in 1942, then to Creighton in 1950, and headed for Copper Cliff North mine in 1967. About a year later, he began thinking of retiring, and, in 1969, took an early service pension, leaving the company as area superintendent of Copper Cliff North and South mines.

But if you're like Archie, you're only 60 years old when you retire. You've got a busy, active mind, a storehouse of valuable mining information and you'd still like to keep in touch with the mining industry.

So what do you do?

Well, for Archie, the solution was and still is — CESO . . . Canadian Executive Service Overseas.

CESO's sole objective is to help the economic progress of developing countries by recruiting Canadian experts, mostly retired, and matching their expertise with requests from overseas enterprises experiencing growing pains.

Volunteers such as Archie serve abroad for anywhere from two to six months; CESO pays the return air fare of the volunteer and his wife to the site of the project, and the client pays their living expenses while on assignment.

Was Archie interested? You bet your sweet caplamp!

In January of 1970, Archie and wife, Eileen, left their handsome home in Sudbury's Long Lake area for a rather uncertain six months in Africa. They arrived in Nigeria just two days after the 30-month Nigerian-Biafran war had ended. Needless to say, their timing could have been a wee bit better!

Archie's job, as mining consultant, was to establish a granite quarry at Abeokuta, 65 miles north of Lagos, Nigeria's capital, and teach the Nigerians how to operate it. "We got the whole thing rolling about three weeks before we left to come home," said Archie. And according to Eileen, the biggest change was "going from our 20 below January weather to the average 100 degrees above in Nigeria. Beastly hot!"

CESO project number two took the Masseys to the Philippines in 1973, again for a six-month term, and this time troubleshooting for two firms . . . one needed help instituting the underground block caving method that Inco had developed at its Creighton mine, and the other needed general help with a basalt guarry.

Last fall, the Masseys were off again to the Philippines, this time to lend expertise to four different firms ... Monarch International, a construction company having problems at its limestone quarries; Benguet Consolidated — they operated two mines, copper and gold, and "they had all kinds of problems"; Batong Buhay was opening up a large copper deposit and needed help at the planning and development stage, and a subsidiary of the Philex Corporation was asking for help. Archie divided his time between all four.

This year? Well, Archie's not sure yet. "Perhaps the Philippine Iron Mines.

hello CESO,



Eileen and Archie Massey remember past CESO assignments. Their Long Lake area home is filled with souvenirs and memories.

Maybe a gold mine at Marinduque."

Says Eileen, "what makes it nice is, after you finish these assignments, you can make some really nice trips home. You're halfway 'round the world anyway, so you might as well take advantage of it."

Between assignments, Archie spends his time consulting, golfing, gardening and playing bridge. And of course, there's always the children ... son Al's with Inco's transportation department. Marjorie spent nine years with data processing in Copper Cliff and now, married to Ray Lalonde and living in Toronto, she's with Inco computers in Toronto's Royal Trust Building. Then there's Cheryl, with data processing in Copper Cliff, Judy in San Francisco, and Pauline in Los Angeles. And there's Edgardo Sibol, a 16-year-old Filipino foster child. "He's pretty smart," says Archie, "he's into his second year of high school this fall."

"So you can see I haven't had too many dull moments. Actually, I enjoy volunteer work with CESO more than, say, spending two or three months in Florida. After all, you can't play golf ALL the time! CESO? It's kind of like a regular job, only you don't have the pressures, and you're not responsible for costs."

CESO. Canadian Executive Service Overseas. Perhaps YOU should be considering it for YOUR retirement days. CESO is always looking for volunteers. and it's just a matter of them matching your expertise with an overseas company that's in need of your particular talents.

And what a way to get some travelling in!

goodbye Archie!



Archie explains to a group of Nigerians how a granite quarry will help in the expansion of the local airport. Wite, Eileen, is second from left.



Philippine foster child, Edgardo Sibol, second from left, with his family.



Completion of Archie's 1970 Nigerian project a granite quarry to provide gravel for muchneeded concrete and asphalt.



Time out for a little relaxation. For Archie, it's a session on the greens.



Quartz uarry



Nestled in the midst of spectacular Rainbow Country, Inco's Lawson Quarry is situated on the north shore of Frood Lake, some 60 miles southwest of Copper Cliff, just past Espanola and a touch before Whitefish Falls.

There's a singular lack of fanfare surrounding the unassuming quarry perhaps because of its location, probably because of its smooth efficiency — but, quietly and unobtrusively, it performs a vital service for the company's Copper Cliff smelter.

To acquaint you with Lawson Quarry, "the triangle" reports . . .

A hill of quartzite, 2,700 feet long, 900 feet wide at its base, and originally 200 feet above ground level, has been mined by Inco's open pit method since January of 1942; since then, the quarry has produced fourteen million tons of quartzite — better known simply as quartz — which is used as a "flux", or reagent, in smelting operations.

Basically speaking, the flux, when introduced to converter matte at the smelter, helps to form an iron silicate slag; explained further, material for the converters contains a fair amount of iron oxide, which must be removed; this iron oxide unites with the silica content of quartz to form an iron silicate slag, which is skimmed from the converters and transferred to the reverberatory furnaces, where contained converter matte is removed.

George Quilty, superintendent of the quarry, is in day-to-day contact with the smelter in order to determine quartz requirements, which will vary according to smelter demand; normally, quartz is shipped three times a week — about 20 rail cars per trip — for an average monthly output of approximately 17,000 tons.

A total force of eight maintains a fairly straightforward operation; drill, then blast the quartz loose; drill the oversize, scoop up by electric shovel and load into truck; dump down crusher chute, crush, convey up to loading bin, dump into rail cars, and move 'em out!



An overall view of the quarry's crushing and loading facility. The road immediately to the right winds up to the actual quarry.

Equipment in use includes a rotary drill — similar to that used at the Clarabelle open pit in Copper Cliff — a three-and-a-half cubic-yard electric shovel, two 35-ton haulage trucks, with two more on standby, a watering truck, a bulldozer, a front-end loader, and a threeton service truck.

And, in keeping with the company's concern regarding matters of the environment, the quarry's crushing facility is fully enclosed and utilizes a vacuum dust system; the quarry itself is constantly watered down, and blasting has been cut back to once every three months or so.

Oversimplified, maybe, but there you have it . . . Inco's Lawson Quarry, unsung hero of the Copper Cliff smelter!



Approximately 17,000 tons of quartz travel the 60-odd miles to Copper Cliff per month. George Quilty's set to ship another train load.



George Guy at the loading area. Quartz is dumped into 70-ton rail cars for shipment three times weekly to the Copper Cliff smelter.



George Quility, superintendent, checks with electric shovel operator. Rodney Aelick. Percy Gravel's at the wheel of the truck.

1770 laws H apt 909 Sudbury, Catario Typ thank partien Superintendent, Morth theme elo saturnational nickel be of beende to apper bliff, Onterio bear For bettim : Thank you very much for the converier sholograph of say torel tree. The tour was a memorable regerieve for me. The under-ground lay out was begger, brighter and more airy then I had expected from recollection of my father's comments about underground. But to retired in '+9.

I was happy to actually see the harf warders made by the Jarvitt workedge students tung put in place. The scorp trame and ducal - Lauled one care automatically dumped heally intrigued me as ded. the crusher. The lunchroom was better equipped than many I have sur in other " adustrias. This seen to same a very rappy even at David There. By there to you and those while uplained the under . ground scortinge and the

Bernardine Yackman



So, who's hiding the picks and the shovels?

That's what the gals want to know every time they bravely venture underground on a ladies' day tour at any one of 10 Inco mines.

The women's preconceived ideas of mining — complete with visions of coalfaced workers, brows beaded with sweat, slugging inch by inch through cramped tunnels with picks and shovels — are quickly shattered as they wind their way for the first time through the maze of drifts comprising Inco's underground network.

At Copper Cliff's North mine, Garnet Smith, mine foreman, safety, has witnessed this enlightenment in many of the 571 women — and some 78 men who have participated in the 23 "ladies' " day tours there since December 7, 1972.

As four organizer, Garnet has seen

operations in the Sent com. at here always been proved of these people renginged in more up and the dates only renforced about pride Levendy permandere Machman

What! No Shovels?

guilfriends, inothers, doughters and wives. (not to mention a few Curious fellows) caubously climb into the cage as (key embars on their journey through the insuck or club i at Nach mine

Clad in oversized dovernils, hard nats and safely goggles, the girls present an outlandish appearance as they head towards the "scenic lookeut" at North mine for a breathtaking view at the 400-foot love of the gap by aftermath of a one and-two-in mismillion ton blast in 1974. They probe even deepen into the depins of the earth, stopping at the 2000 level, earpings infact, for a pokleg and stopen demonstration. They gather round the Grangest urg train as the bottom demo outpines the floads, and then proces at 0 the 2200 level for a poking of the ords of the 2200 level for a poking the ords of the 2200 level for a poking.

Sudden - one woman announces a discovery shire made - a shove propped against the wall of the refuge station where the group has come to rest. Only one shove: In a two prid-a-hall hour tour

The linal stops are the cage and skip noist roums on surface where the gals reliab the sensation of open space all around them

Alter shedding their costumes, the moths-lurned-pulterflies are treated to refreshments and a question and enswor sets on before heading home.

Says Grimet with entrusiasm. "These ladies" day lours flave been great for employee relations. They allow the other half of the loam some moight into the working environment underground and most often, they relouronised."

They really expect to see those picks and shovels. fors of much and lots of model. And they're always amaged that the drifts are so big, i adds Gamet with a chuckle

The tours al North nume are monthly affairs now melti regularly and e August of 1973 with an average of 27 people on each. Organization of the tours begins with the firling out of dentilication forms, obtainable at the first and or personne office. A week before the tour, the names are complied and attendance to confirmed for a final Jst

Tours at North in he are always on Thursdays, times coinciding with cage availability

On four, the ladies are accompanied by six guilles, all on t workers on shift who have agreed in advance to part clipate. There is always a four reader and a follower (usually Garnet) to arrange for the cage and various demonstrations.

The success of the tours at North in he can be gauged on the basis of well over 100 errors all favourable, received from satisfied customers by Grant Beform, mine super clencent

The overall success of the odles day excursions might be measured in card by the large numbers of women who have taken advantage of them this past year.

They include 503 at Levack, 124 at Coleman, 24 at Frood, 102 at Garson, 293 at Creighton, 74 at Copper Cliff South mine, and 167 at Copper Cliff North mine

They're the gals who, when they open their scrapbooks to that group picture, compliments of the mine they visited, smilled the familiar fact in the sea of hard hats and coveralis and know they reticher in knowledge of that vasit and mysterious world undergroup o



_{logo} writer John Ratushniak

"The difference between yesteryear's and today's mining methods," sums up John Ratushniak, "is the same as the difference between a model T Ford and a Cadillac." John should know, having been with Inco underground operations for the past 24 years.

This month's logo writer is an "In-The-Hole" driller at the Copper Cliff North mine. One of the first drillers to operate an "In-The-Hole" drill when it was initially introduced to Inco underground operations in the early part of 1973, John claims that operating the "In-The-Hole" drill is a far cry from the more conventional drilling equipment of days gone by. Says he: "They're easy to operate and contribute greatly to a cleaner and better overall working environment."

John and his wife, Romana, hail from Canora, Saskatchewan, and are the proud parents of John jr., 21, a student at Laurentian University, Susan, 18, at Nickel District Collegiate, and Sandra, 13, a grade 8 student. A resident of Sudbury for the past 26 years, John is justly proud of his attractive home. "I built it myself and I know just about every nail's location and, believe me, it's built to last."

The "mining game"? "A great life," says John, "never a dull moment — I'd recommend it as a career for any ambitious young fellow."

"The triangle" is proud to display John's penmanship on the cover.