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Port Colborne Celebrates Its Centennial

(STORY ON PAGE 10)



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Exciting Future Prophesied for Powder Metals

Taking an imaginative look at the future of powder metallurgy in the next decade, Inco president Albert P. Gagnebin predicts that it will gain steadily in popularity because it is economically efficient, technologically sound, and ecologically neutral.

One aspect of powder metallurgy technology, for example, is the direct production of a great variety of finished articles of pure metal or alloys without melting, such as the pure nickel sheets from which coinage is punched out. Another important advantage is the precision it permits in the creation of highly specialized alloys. Further powder metallurgy developments will probably lead to the discovery and production of alloys with as yet unheard-of properties.

Metals such as nickel, when refined in the form of powder rather than in bulk such as sheared cathodes, not only bypass the possibility of picking up impurities during remelting for use in foundries of rolling mills, but are also much easier to control to the very close tolerances required in creating the highly specialized alloys that are in steadily growing demand. Further developments will probably lead to the discovery and production of alloys with as yet unheard-of properties.

"In the Seventies," Mr. Gagnebin said, "powder metallurgy will prove invaluable to those industries on the frontiers of engineering. They will need alloys with properties that only powder metallurgy will be able to provide."

Addressing the 1970 International Powder Metallurgy Conference at New York, he noted that the powder metals industry has been growing at the rate of 15 to 20 per cent a year during the past decade, and that rate



LAKE RAMSEY was transformed into a Sea of Sails over the August 1 weekend as the Sudbury Yacht Club hosted the Canadian Y-Flyer championships. A total of 47 of the graceful and sporty little craft competed, coming from as far distant as Edmonton, and their crews were tested by everything from a light breeze to a big blow. Picture shows part of the fleet skimming over the waves. The Gold fleet championship was won by Wally Walsh of Pointe Claire, Que. with Pete Hallberg as crew. Winner of the Red fleet trophy was Larry Banbury of copper refinery process technology with his wife Adrienne as crew. In the background Inco's new super-stack, then 870 feet on its way to 1,250, dominates the skyline.

is expected to continue well into the next decade. "All of us interested in expanding the markets for powders are working with increased fervor, be we makers or end users of nickel, iron, aluminum, copper, graphite or any other."

Inco Powder Production

"As part of a \$1.1 billion expansion program in Canada," Mr. Gagnebin continued, "we are now constructing a large modern nickel carbonyl pellet and powder refinery in Copper Cliff. This refinery, due to go on-stream in 1972, will have a planned annual powder capacity of 25 million pounds of nickel powder. This, coupled with an expansion now under way at our Clydach (Wales) refinery, will mean a five-fold increase in our powder-producing capability since 1968. I think you will agree this is a fair testimonial to our faith in the growth potential of your industry."

International Nickel, Mr. Gagnebin added, is not only committing a plant to this future, but people as well. "Twenty metallurgists are now working on powders, in contrast with only one 12 years ago."

"The applications of powders," Inco's president said, "are limited only by the imagination. We have seen powders used successfully in animal feed, fungicides, magnets, filters, bushings, batteries, tire studs, coinage, cutting tools, welding electrodes, powder metallurgy parts for the automotive, aircraft and consumer industries, greases, and on and on.

Hundreds of new applications are waiting to be found. And they will be found through the research and engineering ground-work in which we are all now engaged."

Significant Contribution

Mr. Gagnebin then traced for his audience where some of Inco's work with nickel powders had led. One of the early uses was in sintered steels made by standard American practice. The result was 2, 4 and 7 per cent nickel steels that offered significant contributions to the powder metallurgy industry.

"More than 30 per cent of our nickel powder sales are being directed toward nickel-cadmium batteries. You have all seen the application of this type of power source in consumer items ranging from cordless electric toothbrushes and carving knives to flashlights. In the last several years, we have seen this power concept extended to battery-operated toys, hedge trimmers and lawn mowers. In the industrial field, we see it being used in increasing quantities for standby light facilities, fire alarms, and start-up power for aircraft and helicopters. This is a world-wide market and one that offers tremendous future growth, thanks to the dependability of the product."

Exciting Alloys Prospect

Another powder concept cited by Mr. Gagnebin is one which he said provokes excitement in anticipation of things to come. This is the conversion of powders

to high-purity alloys in wrought product form.

"At the Burnaugh, Kentucky, facility of our Huntington Alloy Products Division, for example, we have developed techniques by which we use either pure nickel powder or a blend of several elemental powders and then through pressurization within the confines of a converted 16-inch naval gun tube, we create a billet form which, after sintering, yields a product suitable for conversion to the conventional wrought forms of strip, rod or sheet. Billets as large as 4,000 pounds have been produced in this way, and purities controlled within a fraction of a tenth of a per cent have been achieved."

Custom Blending of Powders

Mr. Gagnebin also discussed roll compaction and isostatic pressing of powders, saying, "Now let's project these concepts into the future. What is so far-fetched about a steel mill or brass mill producing an alloy chemistry into any desired product form directly from powders? The bits and pieces of this technology are already here: isostatic pressing, roll compaction and forging pre-forms. Powders are now being custom-blended to meet the stringent requirements of today's many sophisticated applications. How close we are already, then, to the day when a customer can call and dictate chemistry, and then a mill, through powder metallurgy, can blend, compact, or shape; sinter and finally deliver forgings, sheet, strip, tubing, wire — you name it — to the

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INCO FAMILY ALBUM



JOINING INCO at Copper Cliff in 1956, Dan Vaillancourt worked at Creighton No. 5 shaft from 1959 to March of this year, when he transferred to Copper Cliff North as a stope leader. He was born in Britt and his bride of 1963, Claire McCendie, in Cadillac, Que. Their children are Robert, 5, and Debbie, 3, and they live in New Sudbury. Dan is an enthusiastic golfer, fisherman and hunter.

DRAGON SESTO and his wife Patricia celebrated his recent retirement on Inco pension by taking a trip back to their native Yugoslavia, where they were married in 1927. Dating back to 1942, Dragon's entire service with the Company has been in the electrolytic department at Port Colborne. Mr. and Mrs. Sesto are shown here with daughters Pat of St. Catharines, Victoria of Welland, and Mary (Mrs. Doug Cullen) of Port Colborne, and sons George, Adam, and Mike, all Inco men at Port Colborne with their father's fine record of service to shoot at.



MARCEL AMYOT and his wife Bridget are raising two families at their McCrea Heights home, as well as their three bright-eyed children, they also have a family of eight beautiful Siamese cats. Five-year-old Gary is seen here between his parents, backed up by sisters Sandra, 10, and Karen, 9. Marcel joined the Company in 1951 at Frood Mine, transferred to Stobie and later to Levack, but has returned to his "native" Frood, where he is a trackman on 2400 level. He enjoys riding Western saddle with the Rocky Mountain Valley Riders.



RENATO PEDRON built his own home in New Sudbury and his favorite pastime is making renovations and improvements there. He and his wife Anna Maria both came from Italy; their two children are 14-month-old Gary, and Enzo, 13. Renato started with the Company in 1952 at Levack, transferred in 1958 to Frood-Stobie, and in 1962 to Clorabelle open pits, where he is a bulldozer operator. He came from Treviso, Italy, to Canada in 1950; his wife Anna Maria, also Italian by birth, came from Castelfranco.



ED BLACK and his wife Aldana both grew up in the Ottawa Valley, he in Renfrew and she in Calabogie. They live in Wahnapitae, convenient to Caniston smelter, where Ed is a matorman on the blast furnace charge floor. Ed plays hockey and softball for the Rivard shift teams, and both he and his wife are active bowlers. Their two children are Liana, 4½, and Denise, 21 months.



LAVERNE PITZEL works with vibrations both on and off the job. At work he is a vibrations inspector for the preventive maintenance department at Copper Cliff. At play, he coaxes harmonious vibrations from his accordion to entertain various senior citizens' groups in Sudbury. Born at Humboldt, Saskatchewan, he started working for Inco at Copper Cliff in 1948. His wife, Eleanor, is from Rutherglen. Their children are Kathy, 12, Dorothy, 11, Shawn, 15, and Joe, 10. On July 23, Shawn added to his laurels as a long-distance swimmer by swimming 22 miles at Rock Lake, bettering his 1969 mark of 18 miles.



Regain Monarchy of Inco Golf

VICE PRESIDENT JACK FIGOTT presents the R. L. Beattie championship trophy to the Port Colborne foursome of Bill Spence (captain), Bob Noyes, Ken Burke and Brian Friedlein; they received golf sweaters as individual prizes.



RUNNERS-UP FOR THE CHAMPIONSHIP, the Copper Cliff general team, received the Alex Godfrey trophy from its donor (left), assistant to the general manager: Don Ripley (captain), Art Silver (borrowed from the mines department on compassionate grounds), Bill Allen and Bill Buchanan. Their personal prizes were golf shirts.



ASSISTANT GENERAL MANAGER Gar Green presented the E. C. Lambert trophy for the low net team score to Graham Squirell, captain of the Creighton No. 3 shaft squad of Jim Black, Vic Bachmeier, and Sean Callahan. Golf jackets were their awards.



BEFORE THE TERRIFIC CLOUDBURST literally turned it into one big marsh, the scenic Idylwyde course was at its lovely well-groomed best. In this picture at No. 7 green Ty Hanninen of Iron Ore Plant tackles a long putt, watched by Kenny Glynn, Bob Shaw, and Tom Crowther of Safety.

JOE STEELE, manager of electrical engineering in the central engineering department, Toronto (third from right), handed out hidden hole prizes to Bob Shaw (Safety), Gord Davidson (Iron Ore Plant), George Zieba (Frood Mine), Bob Coulter (Clarabelle Open Pit), and Earl Mitchell (Pay Office).



BOB SHAW of Safety shows perfect form in blasting out a difficult recovery from just under the lip of a trap.



WITH AN 80, Copper Cliff Machine Shop's Joe Sharp was the alternate winner of the low gross prize, a dozen golf balls, presented to him by general purchasing agent Mac Forsythe. Best score of the day was a sparkling 77 by Creighton's Sean Callahan.



THE WATER HAZARD on No. 1 was no problem for classy Sid Segsworth (Separation Bldg.), who sent his drive straight for the green and is seen here about to chip up for a birdie.



Three of the mines department committee which did such a fine job in staging the event are shown here, secretary-treasurer Terry Fisher, chairman Bob Ludgate, and prize-getter Bob Patterson. Others to be mentioned in dispatches were vice-chairman Monty White, drawmaster Bill (No. 9) Cushing, Rudy Kneer, George Williamson, Vern Johnston, Dereck Parmley, Peter Kaynes, and Dennis Merner, along with Idylwyde's popular pro, Carl Vanstone.

Weatherman Won The Decision But Port Colborne the Trophy



Garson miner Joe Cull powers one off No. 11 tee that must have gone 265 yards at least.

What was shaping up as another brilliant success for Inco's annual inter-plant golf tournament on August 8 fizzled out midway through the afternoon draw as torrential rains swept the Sudbury Idylwyde course and sent 144 drenched players sloshing dejectedly back to the clubhouse.

It was the first time in 33 years that the Inco tourney lost a decision to the weatherman. The morning draw of 144 players finished their 18 holes in beautiful sunshine.

The storm struck suddenly and savagely. A tremendous bolt of lightning shattered a tree not 20 feet from the clubhouse. Mack Bell of Copper Refinery, walking a short distance from the point of impact, was spun around and almost knocked down by the force of the electrical discharge.

Made Speedy Recovery

However, safely under cover, the dry players got wet and the wet players got wetter as good cheer took over and good fellowship reigned supreme. A bountiful buffet dinner was followed by presentation of trophies and prizes, and then many of the players were joined by their ladies to wind up the day's program with an enjoyable dance.

For the ninth time in the history



Manny Haines of Metals Accounting and El Umpherson of Purchasing were in no danger of winning a prize, and they couldn't have cared less.

(LEFT) When Cliff Buchanan of Copper Cliff pay office got lost in the bush, his partners had little trouble finding him in this jolly, multi-hued outfit.

ED CAVANAUGH of Copper Refinery sank a 15-footer (honest, he did it) when this picture was shot at No. 13 green. Envy are Don Mayle, Refinery, and Ken Fryer and Dale Clarke, Murray mine.



Inco Float in Port Colborne Parade



Port Colborne News

In the big parade that was part of Port Colborne's 100th birthday celebrations, the International Nickel refinery float drew a lot of attention with its gay decorations and its symbolic display of the plant's operations. Included in the well designed layout were miniature pachuca tanks, filter presses, an anode furnace, an electrolytic plating tank, and models depicting other features of the pure nickel production process. Driver of the chariot pulling the float was Ron Daniel of the yard crew.

of the tournament everything came up roses for the Port Colborne nickel refinery entry, even without the finesse of its veteran star, Merle Noyes. The Port team of Bill Spence, Merle's son Bob, and two newcomers to the fray, Ken Burke and Brian Friedlein, kept the situation well under control. When the Copper Cliff's Bill Buchanan, for example, single-putted the first five greens, Spence threatened to throw his ball in the lake, and that was the end of that sizzling threat.

Again packed to the capacity of the course, the event moved with a minimum of holdups despite many a lost ball and bush-bound wanderer, and the mines department committee took bows from all sides on the way it handled the arrangements. When the storm drowned out the last half of the afternoon draw, they calmly displayed the wisdom of Solomon in deciding the division of the spoils.

Four bottles of Crown Royal went unclaimed at the presentations when the Special Projects team of Steve MacDonald, John Tegal, Jack Van Delden and Vince Orlando, runners-up for the

Lambert trophy, failed to surface after the cloudburst.

Brave Man Rewarded

Alf Read of Converter Dept. won a duffle bag as the most honest golfer of the tournament. Scorning the use of a hand-mashie or non-whiff counter, he manfully completed the 18 holes and confessed to 208 strokes.

A golf umbrella was the prize for the low net scorer of the day, Mike Lipinski of Process Technology, who wound up with a 70 from a 126 gross, edging out Johnny Matijevich of Pay Office, who also netted 70 but had a gross of 148.

Banquet chairman Bob Ludgate extended a special welcome to the team of Joe Steele, Ron Kruk, Ron Butler and Jack Durrell, representing the central engineering department at Toronto, and to a foursome of four Inco pensioners, Dr. Alan Harcourt, Frank Orange, Ed Racicot and Bob Steadman. Another well-known pensioner and a great golfer in his day, Ron Silver was a head-table guest and received a standing ovation.

Bill Holmberg of Thompson, vacationing at Sudbury, was another welcome visitor among his old Copper Cliff smelter golfing buddies.

Chauffeur of the golf cart showing the Triangle around the course was Inco pensioner Charlie Price, 71, who was a member of the Frood runner-up team in the first Inco tournament in 1938.

X: "I've been trying to see you all week. When may I have an appointment?"

Y: "Make a date with my secretary."

X: "I did, and we had a swell time, but I still want to see you."

Organized Activities Keep Kids Happy During Summer



COPPER CLIFF YOUTH CLUB vice-president Harold Heale keeps a fatherly eye on a volleyball match as a diminutive forward hoists the ball over that big high net. Dynamite comes in small packages — on the right little Todd Bryant puts everything into the return volley.



COUNSELLOR BRENDA LONGFELLOW is ready to render assistance if any mishap occurs as the exuberant kids frolic the park wading pool.



BEGINNERS' ART SESSIONS with brush and water colors are extremely popular with the youngsters. On the left counsellor Regina Rauffman encourages Alain Gervais to let his artistic impulses run wild, and brother Michel seems fascinated by the results.

200 Children Participating In Copper Cliff's Youth Club

Already pronounced a big success is the summer recreational program for the youth of Copper Cliff, organized by the Copper Cliff Youth Club.

Committee president is Rev. Bob Munro, vice-president Harold Heale, and treasurer Lorne Garber. Along with the executive, the community-minded committee has representation from all the town's four churches. Financial support is provided by the Town of Copper Cliff, Copper Cliff Legion, the Italian Club and the churches.

A wise move by the youth club committee was to hire professional help. Miss Sandra Houston, a graduate of Confederation College of Applied Arts and Technology with a diploma in recreational leadership, was engaged as the summer recreational director.

The recreational facilities of the public school, high school, community hall and Nickel Park are the stage for a highly diversified schedule popular with ages 4 to 14. Total registration runs around 200.

Pre-School Training

In the playground division, for children ages 4 to 5, Patsy O'Neill's able direction is aided by leaders Cynthia McDonagh and Debbie Bronicheski. Basically intended as a pre-school warm-up, the program includes group games, singing and music listening, cut-out fun, and enacting parts in simple plays. They receive basic water safety instructions at the wading pool. Attendance varies widely, but an average of 60 children show up every day.

Day Camp Averages 80

The day camp division, designed for children aged 6 to 11, is attended by an average of 80 youngsters per day. Counsellors Cathy Brown, Brenda Longfellow, Debbie Rondina, Monica Whitmer, Terry Denomme and swimming instructor Karen Trezise aid the day camp director, Nancy Garber. Counsellors for the boys' activities are Randy Pawson, Rick O'Neill and Chris Corrigan.

This division's activities are largely sports-oriented, particularly for the boys who get to play football, basketball, baseball, soccer and lacrosse. The girls participate in arts and crafts, group singing and creative drama, as well as various organized sports. Special events like firehall visits, beach parties, hikes and birthday parties are also on the agenda for this group.

Plan Overnight Trip

A teen division has also been set up for boys and girls, aged 12 to 14. This part of the program is supervised by Sandra Houston.



DAY CAMP DIRECTOR Nancy Garber (centre) and counsellors Terry Denomme and Monica Whitmer, adjust the tension of the volleyball net.

With the help of Garry Delorme and Larry Corrigan, 40 boys are involved in daily baseball games, weather permitting, with equipment loaned by the Copper Cliff Legion. An overnight camping trip has been planned for the boys for late August.

"Coffee House" Popular

A "coffee house" drop-in centre at the community hall bustles with activity every Thursday night. There is always a big rush on the ping pong tables. The teen division, which includes a dozen girls who also enjoy organized activities, finds the drop-in centre a great place to shoot the breeze between games of checkers, cards, and the wholesale consumption of soft drinks.

The townspeople's overall reaction to the summer program has been one of unqualified approval. The dedication of the organizers, coupled with the skilled guidance being given by the directors and counsellors, has resulted in an enthusiastic response from the youngsters.

Our Mistake

A rather obvious error in our last issue reported Thompson's attaining of city status, and the Royal visit which so happily crowned that auspicious occasion, as having occurred on June 10 instead of July 10.

We hope that this unfortunate mistake caused no confusion in the minds of Her Majesty and her family, or the good citizens of the proud new city, leading them to wonder if they had participated in an event a full month ahead of when it actually took place.

First Local Winner in 14 Years

For the first time since 1956 a Sudbury district golfer won the prestigious Idylwyld Invitational golf tournament when Fred Silver defeated Leo Bradshaw of the Toronto Golf Club on the last hole of an exciting championship final July 11.

He was presented with the handsome International Nickel trophy by assistant general manager (mining) Gar Green, himself an ardent disciple of the game.

Son of former Idylwyld and Inco champion Ron Silver, and one of four brothers who have all demonstrated outstanding golfing ability, Fred stood up under the pressure of a tense final match in which the smooth Toronto golfer was a constant threat.

"Fred is amazing," he said afterward. "I kept waiting for him to make mistakes but they never came."

Fred's brother Mike was the consolation round winner in the championship flight of the big star-studded tourney, and his caddy was another brother, Tim, who was runner-up in the recent Northern Ontario junior finals. So the 1970 Invitational came up with a Silver lining.



Fred Silver receives the International Nickel trophy from Gar Green.

Crean Hill Man Gets \$1,000 Award

Wearing a wide grin befitting the occasion, Topi Sarkioja proudly displays the \$1,000 Suggestion Plan award he has just received from Crean Hill assistant mine superintendent Keith Alexander. On the left is assistant manager of mines Tom Parris.



"Now I can go to Finland!" was Topi Sarkioja's happy comment when he was presented with a \$1,000 Inco suggestion plan award at Crean Hill mine. Topi has been hankering for a trip back to his homeland, and the idea jackpot made it an early certainty.

The brain-wave that paid off so handsomely for Topi was his suggestion for an improvement in the control chain support, installed in shrinkage and blasthole chutes to eliminate the old conventional brow beam.

An Inco man since 1964, Topi is a construction leader at Crean Hill. With his wife Anelma and three children he lives on a farm in the Beaver Lake area about 10 miles from the mine, where he has a herd of 25 Holsteins that keeps him hustling in his spare time.

This is the second \$1,000 award presented to a Crean Hill employee, Ed Cuddy, now of Frood-Stobie mill, having hit the jackpot in February of last year.

During the past year, six other suggestions have earned \$1,000

awards, four from the Copper Cliff mill and two from Copper Cliff smelter.

On June 1, 1968, the Suggestion Plan was revised to offer a greater incentive and encourage a more active participation by all hourly-rated employees. The maximum award was raised from \$1,000 to \$5,000.

Since the inception of the revised Suggestion Plan a total of \$28,377 has been won by hourly-rated employees.

Who's going to be the first to hit that "five grand" bonanza?

Reprints Available

So great was the demand for extra copies of the July issue of the Triangle containing the picture-story on the new super-stack at Copper Cliff that our supply was quickly exhausted.

The public affairs department at Copper Cliff has had reprints made of the article for distribution at the tourist information centres and to answer requests that have come from many points across the country.

First Warship with All-Gas Turbines



H.M.S. Exmouth at speed during trials. Her new gearbox transmits the drive of all three of her propulsion gas turbines, two of which are available for cruising and one for 'sprint' use only.

Now serving with the British Royal Navy is the world's first major warship to be propelled entirely by gas turbines, which are much smaller, lighter and quicker-starting than the steam turbines conventionally used. She is the 1,500-ton Blackwood Class frigate H.M.S. Exmouth, which has been converted from steam-turbine power to become a working test-bed for marine gas turbines under actual service conditions. Experience with the ship will have a big influence on the power systems chosen for future generations of warships.

The chief problem with gas turbines is that they burn a great deal of fuel, especially when they are operated at much less than full power. This is highly inconvenient in naval service because warships spend most of their life cruising at low power and only occasionally need to accelerate to their maximum speed when action is imminent. The answer is to provide the ship with several gas turbines that can be brought into use successively as the power demand rises. Moreover, relatively small gas turbines can be used to provide the low powers needed for cruising, and a much bigger gas turbine can be held in reserve for the 'sprint' condition.

In H.M.S. Exmouth, endurance cruising is handled by two 3,500-hp Rolls-Royce *Marine Proteus* engines that can power the ship either individually or together, and the 'sprint' engine is a 15,000-hp *Marine Olympus*. All three engines drive into a common gearbox by way of synchro self-shifting clutches controlled from a machinery control room. Once any engine has been started and engaged, forward or astern speeds are adjusted by a single control lever either in the control room or on the bridge.

Nickel Materials Specified

Nickel materials are specified for many of the most critical components of the engine and transmission system of H.M.S. Exmouth. The *Marine Proteus* and *Marine Olympus* have turbine

blades and other high-temperature parts in various alloys of the Nimonic Series developed in International Nickel's Birmingham Laboratory, and their air intakes are protected from sea spray by filters of Monel Alloy 400 wire mesh. The main gearing of the ship is largely made of nickel alloy steels containing from 2½ to 4¼ per cent nickel. H.M.S. Exmouth has a single propeller and, since the conversion, this is of the controllable-pitch type so that astern movement can be achieved merely by moving the blades into reverse pitch; these blades are cast in a nickel-aluminum-bronze alloy. Another important use of nickel is in the seawater piping, which is of 90/10 cupro-nickel alloy.

Student Exchange Visit "Fabulous Experience"

"To me it was a fabulous experience," enthused Mary Linington, daughter of exploration department pilot-engineer Norm Linington, when asked about the exchange visits arranged this summer by the Canadian Council of Christians and Jews between English- and French-speaking students all across Canada.

Mary, whose exchange partner was Monique Bessette of Montreal, told the Triangle "We have made a lasting friendship, and are planning to visit each other again, either at Christmas or next summer. I know the experience has helped me in understanding and speaking French, and Monique said it was the same with her with English."

Vida Grinius, daughter of Copper Cliff smelter loading machine operator Vytautas Grinius, who also had the experience, said "It worked out just great. My partner was Ghislaine Dandurand of St-Leonard, Quebec, and we got along perfectly together. We found we had a lot of mutual interests. I also got a big thrill out of meeting a lot of the students from Western Canada who were

on the train that picked us up along the way to our partners' homes in Quebec."

Almost 3,000 students, one half French-speaking and the other half English-speaking, participated in the project, designed to promote a greater appreciation of Canada's two major cultural groups. The students spent two weeks at each other's homes, and enjoyed bus tours and other arranged entertainment.

Stainless Still the Biggest

Again in 1969, stainless steel was the main consumer of the element nickel. Some 320 million pounds of the 820 million pounds of nickel consumed last year went to stainless, representing 39 per cent of the total. Nickel imparts strength and corrosion-resistant properties to stainless.

A man never feels more as if life were a total failure than when he is being towed to a garage in a brand new car.

North Bay Decides Stack No Danger

A special committee of the North Bay and District Chamber of Commerce is unanimously convinced that the planned 1,250 ft. Inco stack at Copper Cliff will not represent danger to that area.

Ken Esselmont, chairman of the chamber's anti-pollution committee, announced a lengthy meeting with Inco representatives produced convincing evidence that emissions from the stack will be well within the limits of safety provided by the provincial government.

The meeting was at Pinewood Park, and was attended by Dr. Louis S. Renzoni, vice-president, special technical projects, Inco, Toronto, and Dr. Morris Katz, professor of chemistry, natural sciences division, York University, along with six members of the C of C including president Bill Olmsted.

The first cut in a giant anniversary cake, baked and iced to form the number 50, is made by Mr. and Mrs. Fred Spencer of their golden wedding party, attended by 300. Seven of their nine sons work for International Nickel, from which Mr. Spencer retired on pension in 1963 after 41 years' service.



50 Years Married

The dictionary gives an old Scottish definition of a spouse as "the part of a house where the family sit and eat." And so, true to the name, Coniston's Mr. and Mrs. Fred Spencer recently sat down with most of their family and ate, this time for a very special reason — five decades had passed since Fred married Marie-Anne Grimard in Sudbury on July 26, 1920.

The Spencer family has grown wonderfully since that wedding day 50 years ago. Of the 300 who sat down to dinner at the Sorrento Hotel to honor Fred and his wife, 69 were direct descendants of the "bride and groom". Twelve children, 43 grandchildren and 14 great-grandchildren comprise the latest census of the living Spencer tree.

Seven of Fred's nine sons work for Inco. Counting Fred's own 41 years' service, the Spencer boys have so far racked up an impressive 193 years.

Five of the sons are employed

at their dad's old stamping grounds, Coniston smelter; Wilfred, Lionel, Leonard and Bob are in the planned maintenance department, while Roger works in the transportation department. Bringing the total of Inco Spencers to seven, Rolly works in the Copper Cliff car shop, and Aldege is a hoistman at Murray. Four of the sons are members of the Inco Quarter Century Club with their father.

The senior Mr. Spencer worked 35 of his 41 Inco years as a converter aisle crane operator at Coniston. Now 73, he is in excellent health. His wife is "much younger" and after successful treatment of a circulatory trouble, she, too, is well on her way to enjoying good health.

Mayor Mike Solki of the Town of Coniston was the emcee for the gala celebration. Many messages of congratulations were received. Friends and relatives from as far away as Quebec City and Winnipeg were in attendance.

Fred retired from the Company in 1963. He and his wife will continue to reside in Coniston.

The Lovely, Tranquil MANITOULIN

Although it is only about 90 miles from Sudbury, a surprisingly large percentage of Inco people have never toured Manitoulin Island, one of Ontario's greatest holiday treasures. In tranquil rural charm it has a look of New England about it, with its fishing villages, sandy beaches, interesting museums, picnic and recreation areas, hidden coves, and magnificent views out over Georgian Bay. For the sportsman its woods abound in deer, and it is one of the province's most productive areas for the taking of lake and rainbow trout and black bass. The following appreciation of Manitoulin was published recently in the *Toronto Globe and Mail*:

By LESMA HOSSACK

WHEN SEEKING A HOME for his people, Manitou, chief spirit of the Ojibway Indians, insisted it have deer to stalk and fish to spear, clear waters to drink and swim in, sugar maples to tap, and trees aplenty with bark for canoes and long houses. A tall order, but Manitou found it all in a large island in Lake Huron.

Manitoulin Island has changed little from the time the Indians moved there many moons ago. The bear-walker, or medicine man, still walks the island foretelling the future. Deer roam woodlands, and 101 lakes abound in fish.

Take Highway 17 to McKerrow and turn south onto the vastly improved Highway 68. The road winds its way through Espanola, crosses a series of causeways linking Birch Island and Great Cloche Island, and finally traverses a

swing bridge that leads into Little Current, Manitoulin's largest town (population 1,600).

Although it is the largest freshwater island in the world (110 miles long and from 3 to 50 miles wide), Manitoulin is still small enough to circumnavigate in one day. It is advisable, though, to take at least two days and to leave plenty of free time for sightseeing, shopping and meandering down side roads where cows, sheep, ducks and pigs have right of way.

Heading south and following the Manitowaning Bay coast, the road ambles by blue lakes, through green valleys and across rocky, treed hills. Old fashioned snake fences zig-zag along both sides of the road.

An Ancient Civilization

First point of interest is Sheguandah, a small village six miles from Little Current. It is built on the site of one of the oldest civilizations in North America. Artifacts dating back 30,000 years have been dug from the surrounding hills. Many of these are on display in Ottawa's National Museum.

A few miles farther on is a lookout with splendid views of Manitowaning Bay. Then the road veers east to go through the northern section of the Sheguandah Indian Reserve, one of five on the island (there are 3,600 Indians, accounting for about one-third of the population).

Next town is Manitowaning, reputed to have been the home of the Great Spirit Manitou. Legends relate he went by strange ways to visit his people, walking through an underground passageway between the mainland and the Wikwemikong Peninsula. To prove to the Indians such a tunnel did not exist tagged fish were once turned loose in South Bay. A couple of days later one was caught in Manitowaning Bay.

The town boasts the only race track on the island (harness racing is popular in the summer), the oldest church in northern Ontario, and an oldtime home, blacksmith's shop and museum, all with displays of early island life.

Largest Indian Reserve

Just outside the town a side road leads to the Wikwemikong (Continued on Page 13)



Not so tranquil as the heading of this article suggests is this young Indian, whooping it up at the famous annual pow-wow at Wikwemikong.



This picturesque Anglican mission church, built about 1868, is on the Indian reserve near Sheguandah.



The beautiful Bridal Veil Falls, near Kagawong, a must for camera jans. **BELOW:** Fishermen are in their glory on Manitoulin, famous for lake and rainbow trout and black bass.



Aerial view of the waterfront at Little Current, one of the most popular rendezvous targets for yachtsmen on the Great Lakes.



Ontario Dept. of Tourism



HOW THE INDIANS MARKED THEIR TRAILS

The early settlers found that the most convenient routes of travel, to avoid swamps and other hazards, had been established by the Indians and clearly marked for direction through the bush by bending and tying saplings to shape their growth. In different areas different shapes were used. The marker shown above is located on the property of Ernest Ott, at the base of Sugar Loaf Hill, the 150-foot height of land on the lakeshore which was used as an observation post during the War of 1812. Posing at the marker is young Christopher Borg.



GRINDING STONE FROM ORIGINAL MILL

Cute little Tina Cullen, 7-year-old granddaughter of new Inco pensioner Dragan Sesto, stands beside a souvenir of Port Colborne's earliest days, a grinding stone from the Sugar Loaf grist mill built in 1790. The mill was built nearby at Ramey's Bend by a pioneer settler from Pennsylvania, Christian Sevitz (Zavitz), and was a notable factor in the early development of the Niagara District. Legend has it that Kaspar Ramey and his party were killed by a band of marauding Indians at the Zavitz mill in 1834.

PORT COLBORNE

HISTORICAL PLAQUE

Port Colborne's mayor, Inco pensioner Nis Nissen, unveils at City Hall historical plaque on the founding of Port Colborne, where the village council first met in January, 1870. Assisting him (left) is Les Gray of the Archaeological & Historical Sites Board, London. It was in 1831, the plaque relates, that Gravelly Bay, the future location of the city, was chosen as the southern terminus of the Welland Canal. The presentation on July 25 touched off the city's week-long Centennial program.



At a gala Centennial party at the Port Colborne Club, Inco refinery manager Vern Barker appeared as Sir John A. Macdonald.

IMPORTANT SEAWAY and industrial Niagara Peninsula, Port Colborne has ting up its heels for a week in celebration birthday. The village became a town 1918, the year the vital International Nickel operations commenced, amalgamated ing Humberstone in 1952, and became established city in 1966. Its population 22,000, harmoniously representing many cultures. Inco's 2,159 employees and their joined whole-heartedly with their fellow the happy Centennial of their pretty, smartly modern little city. A big factor of the celebrations was the energetic volunteer fire department.



WE IS 100



ON OUR COVER

On a Centennial Sunday afternoon drive, in appropriate period costumes made by his wife Diana, Carmel Borg and his family turn off the road onto the old Indian trail that led from Reeb's Bay around the base of Sugar Loaf Hill to Gravelly Bay, the original name of Port Colborne.

The snappy surrey with the fringe on top was loaned for the occasion by Ross Clemenz, and the handsome horse by Charles Steele.

Born in Malta, Carmel is a chlorination man at the nickel refinery. His children, vastly enjoying the ride, are Christopher, 9, Lana, 7, and Shawn 6.

A NOBLE RELIC

A cherished relic of the early days is this fine old steam fire engine bought by the Village of Humberstone (now part of Port Colborne) in 1913. In later years it was relegated to service as a standby boiler at the dairy, but was rescued from this ignoble fate, lovingly restored to its original condition and power by members of Port Colborne's volunteer fire department, and now stands in state at the East Side Fire Hall. It can still shoot a 100-lb. stream. "Adorning" it here in this Centennial picture are eight of the volunteer firemen who work at Inco. Charlie "Rock Island" Gatt, Andy "483" Vasko, George "Live Wire" Rukavina, Jim "King" Haggerty, Doug "Rope" Duggan, Bob "Reddy the Fox" Mirrieles, and Stan "East Side Chief" Rudyk. It cost \$1,500, raised by collecting and selling scrap iron, various donations, and hundreds of hours of volunteer labor to make the old engine look and work like new. Even the nickel plating was completely restored. It has since appeared in many parades on both sides of the border.



CENTENNIAL BALL AT THE ARENA A STANDOUT SUCCESS

In the huge crowd enjoying the big Centennial Ball at the Port Colborne Arena, nobody had a better time, or looked more handsome and charming, than this group who were among the many Inco people present: George and Doreen Near, Paul and Rose Anne Ivanich, Mickey and Kathleen Rivers, John and Stephanie Marshall, Chuck and Anne Goss, and George and Gert Smith.

RING OUT WILD BELLES

That water-skier in the background may not quite fit the period, but anyhow here's a daring bathing party on the beach at Lake Erie 'way back when. Enacting the giddy scene are three Inco safety department staff members, secretary Darlene Gilbert, head nurse Mary Grace, and nurse Vi Crawford, along with Vi's Inco carpenter husband Walter and children Allan and Nora.



TASTY TREATS AT THE INTERNATIONAL FOOD FAIR

Below: Hordes of hungry customers surrounded the booths at the Centennial Food Fair at Lakeside Park. On the left popular dryman "Salty" Shelton gets a liberal serving of cabbage rolls from Matilda Toth, wife of plant security officer Charlie Toth. On the right plant fitter Bruno Tonnelli, his wife Theresa, and daughters Bebbie and Bunny, enjoy the delicious Italian pizza served by Mrs. Mary Falcioni and her helpers, Rose Mary Vit and Christine Tonnelli.



-APPOINTMENTS-

ONTARIO DIVISION

J. A. Pigott, vice-president and general manager, announced the following appointments effective July 22:

C. F. Hews, assistant manager of mines;

M. C. Kossatz, superintendent of safety.

Both will make their headquarters at Copper Cliff.

Dr. Charles E. O'Neill, assistant vice-president, process research, Toronto, announced the following appointments at the Port Colborne research stations:

Dr. J. A. Bell, general superintendent of research stations;

B. J. Brandt, assistant to the general superintendent of research stations;

T. A. Mossey, previously superintendent of No. 1 research station, has been assigned to operations at the Copper Cliff nickel refinery;

R. D. Robinson, superintendent No. 1 research station;

F. Olano, superintendent No. 2 research station;

Dr. J. A. Blanco, superintendent No. 3 research station;

G. M. Lissaman, superintendent technical services;

Dr. L. Baltas, assistant superintendent, No. 1 research station;

Dr. G. Biguria, assistant superintendent, No. 2 research station.

Dr. Bell will continue to be located at Port Colborne and will report to D. Kelly, director of process development, Toronto. The remaining personnel with the exception of Mr. Mossey will continue to be located at Port Colborne and will report to Dr. Bell.

C. F. HEWS

Superintendent of safety for the Ontario division since 1967, Charles Hews had previously been superintendent of diamond drilling since July of 1965.

Born in Ottawa and brought up in Webbwood, he attended Sudbury High School and went on to Queen's University, from which he graduated in 1950 with a B.Sc. degree in mining. He served two and a half years in the RCAF during World War II.

After two years' experience at the McIntyre mine at Timmins he joined International Nickel, starting in the efficiency department at Creighton mine.

In 1956, following several months in the mine department at Copper Cliff, he became safety engineer at Levack mine, after which he held the positions of divisional foreman, general foreman, and underground superintendent. He was appointed assistant superintendent of Levack mine in January of 1964.



C. F. Hews

His marriage to Marjory Light took place at Falconbridge in 1947. He has four children.

He is chairman of the very active Sudbury branch of the Canadian Institute of Mining & Metallurgy and is also vice-president of the Mines Accident Prevention Association of Ontario.

His chief recreation is his summer camp at Long Lake.

M. C. KOSSATZ

Underground superintendent at Levack mine since May of 1967, Mason (Eric) Kossatz has been with International Nickel since 1953, when he was employed in the efficiency office at Creighton mine.

Born at Chalk River, Ontario, he joined the Ottawa Camerons

Regiment before completing high school and served overseas for almost five years. When he returned he finished his secondary school education and went on to the University of Toronto, from which he graduated in 1953 with a B.A.Sc. degree in mining.

During two of his university vacations he worked at Frood and Creighton mines.

He became a shift boss at Creighton in 1955 and four years later moved over to Frood as research supervisor on the development of the undercut-and-fill method of mining.

After two years as safety engineer at Murray and Frood-Stobie mines, he was a general foreman at Frood and then, in 1964, at Creighton.

He was married at Hove, England, in 1945 to Elsie Bish, and has one daughter.

Golf, curling and trailer camping are his favorite diversions, along with flying, at which he recently earned his pilot's license.

DR. JAMES A. E. BELL

Born at Noranda, Quebec, "Sandy" Bell enrolled in the faculty of science at the University of Toronto, receiving his bachelor's degree in 1961, his master's degree in 1962, and his doctorate in 1965.

He commenced his professional career with International Nickel at Copper Cliff in 1965 as a senior research engineer in the research department at Copper Cliff, and the following year was transferred to the J. Roy Gordon research laboratory at Sheridan Park, Toronto, as group leader, pyrometallurgy. In 1968 he moved to Port Colborne where he was appointed superintendent of research stations.



J. A. E. Bell

His marriage to Karen Holland of Port Credit took place in 1964.

Tennis, water sports, skiing and curling are his recreations.

B. J. BRANDT

Born in Amsterdam, Holland, Ben Brandt attended the University of Amsterdam and came to Canada in 1948 to join International Nickel's metallurgical department at the Coniston smelter.

He was transferred to the research department at Copper Cliff in 1950, and in 1964 to Thompson as superintendent of research.

In June, 1969, his appointment was announced as assistant superintendent of research stations, Port Colborne.

He holds patents on several chemical processes.

His marriage to Mieke van Hoor took place in Amsterdam in 1948.

Duplicate bridge is his favorite pastime.

T. A. MOSSEY

Tom Mossey, who was born in Copper Cliff, graduated from Queen's University, Kingston, in 1955 with a B.Sc. degree in chemical engineering. During his university vacations he had been employed in the oxygen plant, metallurgical department, and copper refinery at the Copper Cliff operations.

Joining Inco following graduation he was engaged in special projects and pilot plant investigations until his transfer to the Port Colborne research stations in 1959. Assigned to No. 1 research station, he was a test engineer and then senior project engineer, and was appointed assistant superintendent in 1969.

He was married at Copper Cliff in 1959 to Diane Nickle, and has three children.

Sailing, badminton, and land-scaping are his favorite diversions.

R. D. ROBINSON

Dale Robinson, who was born in Calgary, graduated from the University of Alberta in 1962 with a B.Sc. degree in chemical engineering, and then joined International Nickel as a test engineer at No. 1 research station, Port Colborne. He became a project engineer in 1967 and a senior project engineer in 1969.

He married a Port Colborne girl, Anne Nissen, in 1966.



R. D. Robinson

Curling and water skiing are his recreations.

F. OLANO

Cardenas, Cuba, was the birthplace of Francisco Olano, who graduated in 1940 from the Technical Institute in Havana with a degree in electrical technology.

From 1945 to 1960 he was employed at the nickel plant at Nicaro where, at the time of his resignation, he was assistant general production superintendent.

He joined International Nickel in 1961 as senior process engineer at No. 2 research station, Port Colborne.

His marriage to Adelaida Delgado took place in Havana in 1940; he has two sons.

F. Olano

F. Olano

F. Olano

DR. J. A. BLANCO

Starting with International Nickel in the process technology department at Copper Cliff in 1968, Jose Blanco was transferred the following year to No. 2 research station at Port Colborne as a senior project engineer.

Born at Asturias, Spain, he graduated from the University of Oviedo in 1957 with a bachelor of science degree. He received his master's degree in 1961 from Northwestern University at Evanston, Illinois, and his doctorate from Syracuse University at Syracuse, N.Y., in 1967.

Prior to joining Inco he was an assistant professor for two years at Clarkson University, Potsdam, N.Y.

He was married to Huguette Mialhe in Le Puy, France, in 1968.

For recreation he likes fly fishing, hiking, and photography.

J. A. Blanco

J. A. Blanco

J. A. Blanco

G. M. LISSAMAN

Although born in Montreal, Gordon Lissaman received his university education at Sheffield, England, graduating in 1953 with an honors degree in metallurgy.

He spent two years in the British Army.

His International Nickel association commenced early in 1954 as a milling test engineer in the former research department at Copper Cliff. He was transferred to the Port Colborne research facility in 1959 as a shift supervisor in No. 1 station, where he became supervising chemist; in 1968 he was appointed senior research chemist, research stations.

His marriage to Lorna Mary



G. M. Lissaman

Rudge of Whyteleafe, Surrey, England, took place at Sudbury in 1958. He has two sons.

Gardening, golf and stamp collecting are his favorite diversions.

DR. L. BALTAS

Thessaloniki, Greece, was the birthplace of Leonidas Baltas, who, during his university years at McGill was a summer employee at the National Research Council and a laboratory demonstrator at the university. He received a B.Eng. degree and, in 1967, his Ph.D.

He joined International Nickel in May 1967 as a research chemical engineer at Sheridan Park, Toronto, and early in 1969 moved over to the research facility at Port Colborne as a senior project engineer.

He is unmarried. Boy Scout leadership, philately, theology, languages and hiking are included in his outside interests.



L. Baltas

DR. G. BIGURIA

Although born in Guatemala City, Guatemala, Gabriel Biguria received all his advanced technical training in the United States, graduating from Case Institute of Technology in 1963 with a bachelor of science degree in chemical engineering, and then going on for his master's degree (1965) and doctorate (1968) from Lehigh University.

He had a brief previous employment with International Nickel in 1962 at the research laboratory at Bayonne, N.J., while on university vacation. He was assistant research professor at Rutgers University for two years.

He joined the Company in 1969 as senior project engineer in No. 2 research station, Port Colborne.

He married Olga de Leon at Guatemala City in 1967 and has one child.

For recreation he enjoys squash, sailing, skiing and photography.



G. Biguria

NEW INCO ALLOYS

Six new nickel-base alloys have been developed in the research laboratories of International Nickel. All resistant to high-temperature corrosion, the alloys are of interest for applications in marine and industrial gas turbines where components are particularly prone to hot-corrosion by sulphated sea salt or the products of combustion of impure fuels.

Possible applications include rotor blades, flame tubes, nozzle guide vanes and stressed parts in gas turbines operating at temperatures up to 1,000°C.

Manitoulin

(Continued from Page 9)

Peninsula and the island's largest Indian Reserve. There Ojibway Indians fashion moccasins, beaded necklaces and belts and other handicrafts to sell in souvenir shops in the towns or by the roadside.

Turning south, the road cuts through dense woods, and passes rocky outcrops that change color with the light of day. About 10 miles north of South Bay another road leads east through farm country and across rickety bridges that span trout streams to Providence Bay.

A town of old frame houses with vegetable gardens and flower beds in front yards, it was named by British sailors. Their ship was wrecked when caught in a storm on Lake Huron. The sailors feared they would not survive, but most were washed ashore, escaping death by what their captain said was an act of Providence. The Indians prefer to call the town Bedekodawangong (meaning, where sand curves around water). Their name is more apt.

There are playgrounds for children, and picnic tables. Fossil rocks are found at the west end of the bay and along the east side an occasional gemstone turns up.

Unfortunate Squaw

Now the road turns north and wends up to Gore Bay, on the North Channel coast. Along the way turnoffs lead to lakes Mindemoya, Big Manitou and Kagawong. Out in Lake Mindemoya (Ojibway for old woman) is a small island that looks somewhat like a human figure in a crawling position. Legend relates it was once a woman, the squaw of a chief. One day she spoiled a brew being readied for a council meeting. In his rage the chief kicked the squaw off a cliff. She landed on her hands and knees in the water and was transformed into an island.

Gore Bay, on the main east-west highway and about midway between Little Current and the New England-type town of Mel-drum Bay on the westernmost point, is the seat of Manitoulin's government. A livewire little town with wide streets and flower-bordered lawns, it has a deep harbor lying between high hills. It also boasts of the island's only airport (frequently the site of Indian folklore dances in the summer), a weekly dance and a Saturday morning farmers market that commences at 10 a.m.

Handcrafting Boats

First town, heading east, and on the way back to Little Current, is Kagawong. Just as you enter town, on the right is a smallish frame building with a large sign reading Berry Boats. Stop and go inside. Craftsmen will be at work making cedar-strip boats by hand.

Nearing Little Current you pass, on the right, a large rock

Freezers Can Turn Into "Death Boxes" For Young Children

Do you have a freezer in your house? A picnic cooler? And a young child to fit into them? Then be especially wary, for an alarming number of children are suffocating in these "death boxes" right in their own homes.

When authorities tabulated the number of suffocations in refrigerators for 1964 they discovered that the toll was a shocking 44—the worst on record. The previous all-time high was in 1962 when 35 youngsters died in refrigerators.

"Everyone knows the abandoned refrigerator on a back porch or empty lot can be a killer," says Phil Dykstra, head of the National Safety Council's home department. "But few people suspect that children will also crawl into a small cooler or freezer. These, too, are tightly insulated, and the air supply in the small cooler is quickly exhausted."

While his mother thought he was riding his tricycle, a four-year-old boy in New York last year wandered into the garage and climbed into a picnic cooler his father had bought two weeks previously. Although the cooler was only 22 inches long, 12 inches wide and 15 inches deep, the child managed to squeeze tightly inside. The lid fell shut and locked. The boy's sister, sent to look for him, found the dead child lying on his back.

This is hardly a freak case. Three other children died in almost identical accidents last summer in Denver, Chicago and Houston.

Three Little Victims

In California, a mother left the lid of an empty freezer open to air it out in the garage and closed the overhead door to the garage. Several hours later, when she went to look for her two young children, she was stricken with fear to see the garage doors open. She ran to the now closed freezer and tugged at the lid, but it had locked upon falling. Finally she got the key from the house and opened the lid to find three children—two of her own—huddled together in the five-foot long freezer. None could be revived.

In the wake of last year's record

shaped like a cup and saucer. To one side is a gate and a sign pointing to a trail that leads to the highest point on the island. The track begins with a gradual slope but ends in a rather steep climb. Keep going. The view from the top is worth the climb. Stretching below is the North Channel, dotted with yachts and other small craft. Behind is rolling farm country, and thickets of trees.

number of tragedies, the National Safety Council urges parents to take increased precautions.

• If you have small children, keep the lids of picnic coolers locked if possible or otherwise securely fastened shut. Or keep the whole cooler in a locked area.

• When a freezer is temporarily empty—even for a day or so—keep the lid locked or strapped shut, or keep the unit in a place inaccessible to children.

• And don't forget the ever-threatening unused refrigerator. When a refrigerator or freezer is temporarily stored out of service, a simple precaution is to place the unit with its lid or door pressed tightly against the wall or floor. If it is to be out of use for some time, render it harmless. An easy way is to remove the door.

If you see an abandoned refrigerator, notify local authorities; these hazards are illegal in many areas.

Golden Wedding

Close friends and immediate family numbering about 30 in all gathered at the Copper Cliff Club to honor Mr. and Mrs. Tom Dunn on the occasion of their 50th wedding anniversary. There



was a note of nostalgia at the party, since Tom had spent all but two of his 23 Inco years as steward of the club until his retirement on disability pension in 1952.

Born in Goldenburg, Ontario, near Thessalon, Tom married Margaret Smith at Warton. She was born at Stokes Bay on the Bruce Peninsula. In their 50 years together, they have seen their four sons and two daughters go on to raise their own families and present them with 17 grandchildren.

Two of Tom's sons are Incoites: Donald (Red) works in the Copper Cliff North mine warehouse, and Mac at the J. Roy Gordon Research Laboratory at Sheridan Park, Toronto.

Both Tom and his wife, who are 79 and 76 respectively, are enjoying very good health. They have resided at their Guilletville home since 1954.



IN A LOVELY TRANQUIL SETTING on the south shoreline of Lake Shebandowan in Northwestern Ontario, 50 miles west of Thunder Bay, one of International Nickel's new mining expansion operations unobtrusively enters the scene. On the island in the foreground is housed a 61-R raise borer, reaming the second of two 7-foot holes 400 feet deep for the mine ventilation system.

Immediately beyond, on a point of the mainland, is the temporary headframe of No. 2 shaft, the production shaft, where the permanent concrete Koeppel-type headframe will be built. To the right of the headframe is the construction camp, and further right, out of the picture, is the site of the new mill. Concentrates will be shipped to Copper Cliff for processing.

Inco's Good Neighbor Policy At Shebandowan Development

Can a nickel mine and conservation-minded outdoors enthusiasts find happiness together? International Nickel believes they can.

The Company is presently developing a 2,900-ton-per-day nickel mine on the shores of Lake Shebandowan, 50 miles west of Thunder Bay in Northwestern Ontario, and is taking a number of precautions to ensure that, when the mine comes into full production in the fall of 1972, it will do so quietly, cleanly and efficiently.

For example, in order to limit surface activity and noise on the lake shore, the Company is driving an inclined tunnel from the mine shaft to the mill, located a half mile inland. Ore will be conveyed underground by belt rather than by truck on the surface. In addition, service lines will pass through the tunnel rather than on the surface. The Company is also

hard surfacing the 10-mile access road from the provincial highway to allay the dust.

Exceptional precautions have been taken to ensure that International Nickel's operations do not harm the water in Lake Shebandowan and nearby streams. The Company has retained the firm of James F. MacLaren Limited, consulting engineers, to undertake a study of both the lake and the Mattawin River watershed. Last summer, six separate surveys were conducted by this firm, and no marked changes in the quality of the water throughout the area due to Company operations were found. A continuing program of water quality monitoring will enable International Nickel to keep track of even the smallest changes in the aquatic environment and take protective measures if necessary.

The concrete headframe, the construction of which will start next spring, will have a clean, uncluttered appearance.

All permanent surface buildings will be of attractive design and located on landscaped ground.

Finally, International Nickel is making an effort to keep area property owners apprised of its activities at the Shebandowan mine site through periodic letters to their homes.

Development of the Shebandowan mine is part of International Nickel's seven-year, \$1.1 billion Canadian expansion program. At the completion of the program, the Company will have 19 mines in Canada — 15 in Ontario and four in the Thompson area of Manitoba.

The No. 2 production shaft at Shebandowan will reach its planned depth of 2,395 feet this month, and development of underground workings will then proceed. The No. 1 exploration shaft, located about a mile from the production shaft, has reached its full depth of 1,132 feet. This shaft will become a part of the mine's ventilation system following the completion of underground exploration.

The Shebandowan property was acquired by International Nickel in 1937. Small scale drilling work went on in the area from then until it was greatly intensified starting in 1965.

1978 Is Deadline For Long-Range Pollution Control

International Nickel's current long-range program for pollution control is to be completed by 1978 under a directive issued July 21 by Ontario's energy and resources minister George Kerr. The deadline was reached after detailed conferences between officials of the provincial department of mines and Inco representatives on the ramifications of the multi-million dollar undertaking.

In issuing his directive Mr. Kerr stressed the Company's statement made some months ago that the \$15 million chimney to replace the three existing stacks at Copper Cliff smelter by the end of 1971 is considered an interim measure only. The ultimate objective is removal of all pollutants at their source, on which intensive research has been in progress for a considerable time.

Three Steps Specified

Three steps are specified in the ministerial order:

— By December, 1972, sulphur dioxide emissions at the iron ore recovery plant in Waters township will, through an enlargement of the sulphuric acid plant, be reduced by 90 per cent.

— Sulphur dioxide emissions at the Copper Cliff complex will be reduced by means of a new metallurgical process. By 1974 the reduction will be 15 per cent, by 1976, 30 per cent, and 85 per cent by 1978.

— Reduction in sulphur dioxide emissions from the Coniston smelter will be 90 per cent by the end of 1978.

Two Projects Already Underway

Of the long-term projects involved, two are already underway, each biggest in the world in its field. The concrete shell of the 1,250-foot chimney will be completed this month, and work will commence immediately on installation of the steel liner along with the new precipitation plant and extensive new flue system. Also well advanced are plans for the new 2,300-tpd sulphuric acid plant, which will be entirely financed by Inco at a cost of \$20 million, with an extra \$5 million for acid storage facilities; it will be operated by Canadian Industries Limited in conjunction with its present sulphuric acid complex. It is being undertaken, coincidentally with expansion of the iron ore recovery plant and the construction of the new nickel refinery, to eliminate the iron ore recovery plant as a potential source of air pollution, not only from sulphur dioxide, but also from dust. All dust must be removed as a prerequisite to sulphuric acid production.

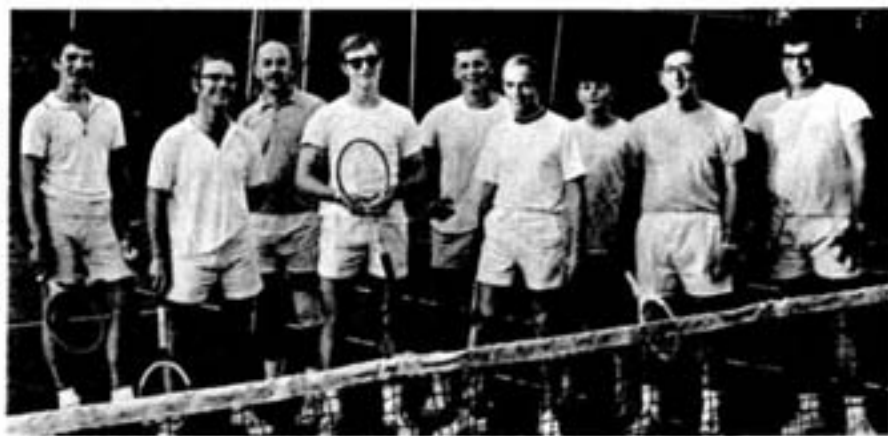
The new nickel refinery under

Enthusiastic "Racquetters" Enjoying Good Season at Cliff



In their well protected haven behind the Community Hall the four excellent tennis courts at Copper Cliff have seen lots of action this summer from an enthusiastic membership. Club president is Neil Ogilvie of electrical-mechanical engineering, and secretary is Don Phipps of geological research. Copper Cliff Athletic Association continues its sponsorship of the activity.

In this group of "racquetters", left to right, are Gabriel Marcucci, Don Phipps, Jan Matousek, Ian Ogilvie, Ray Koranovich, Ed Imfeld, Jim Ogilvie, Lawrence Mochizuki, and Ifti Hosain.



construction will use the new Inco pressure carbonyl process, with by-products going directly to other linked plants, thus eliminating pollution emissions.

Entire New Process Possible

A new and special plant will have to be built at Copper Cliff complex in order to meet the order of reduction to 85 per cent by 1978. Possibly an entirely new process will have to be developed.

At the Coniston smelter, where the ministerial directive calls for a 90 per cent sulphur dioxide emission reduction, the Company is not yet sure how it will proceed. "We may use the same metallurgical process, or it may be done by some other means, but we will meet the order," it was stated.

Fox and Sartor Win Coniston Golf

Clarence Fox with low gross and Gino Sartor with low net were the big winners when Coniston Athletic Association held its fourth annual golf tournament at the Countryside Golf and Country Club on Highway 69 south.

The 18-hole tourney had 47 entrants from the membership of the athletic association. Tourna-

ment organizer Jack Corrigan had help at the helm from Ed Taillefer, Clarence Fox, Ray Bidal, Garry Hebert, and Vic Boyd.

Low gross runner-up was Dennis Laframboise, while Bill Duffy was runner-up in the low net race. A steak dinner was followed by a windup tag at the club house topping off the outing.

Exciting Future

(Continued from Page 2)

customer, literally within hours of the initial request. Dreaming? Maybe, but it wasn't too many years ago that vacuum melting and continuous casting were also dreams.

Slurry Coating Inco Invention

He also discussed slurry coating, an Inco invention still in the development stage, which permits precoating cold-rolled steel strip with a thin layer of nickel. Another new Inco powder concept, he explained, was mechanical alloying which combines precipitation and dispersion hardening.

"By combining these two hardening concepts through mechanical blending of suitable powders," Mr. Gagnebin said, "we at Inco are certain we have found one way that the best of both alloy worlds can be achieved. Let the

imagination wander for a moment with this mechanical alloying concept: if dispersoids can be added for strength, why not other mechanically blended additives for color effects? Whole new markets may thus be created.

"No one company, working alone, can assure the future of powder metallurgy. But 200 companies exchanging ideas and working together, both in laboratories and pilot plants, can create a giant new industry: an industry that is dynamic, exciting, responsive to new demands, and at the same time profitable.

"If we respond to changing design and application concepts by offering new imaginative products and processes, the future will be bright, and perhaps someday the Seventies will be known as the Decade of Powder Metallurgy," Mr. Gagnebin concluded.

A Plugged Nickel?

Although an ordinary "nickel" is worth only five cents, there are five "nickel" coins valued at \$50,000 apiece. This came about because five unauthorized Liberty Head "nickels" were minted in 1913, the year the Buffalo design took over. The "nickel" is actually 25 per cent nickel and 75 per cent copper.

New Wire Line System Diamond Drilling Boon

A major development that takes the drudgery out of diamond drilling, and opens the way to more efficient techniques, is the underground wire line system being introduced at International Nickel mines in the Sudbury district.

Wire line diamond drilling is now in use in exploration work at the Levack, Murray, and Copper Cliff North mines, and will gradually replace conventional diamond drilling in outlining the orebodies in all Inco's underground operations.

Under the old method, every time a core barrel in a drill hole was filled, the entire string of 30-foot drill rods had to be hoisted to the drilling station and disconnected length by length until the core barrel finally came up and its inner tube could be emptied. Then the operation had to be reversed, each length of rod reconnected until the complete string was returned to the hole and drilling could be resumed.

Most of Time Just Handling Rods

By the time a hole reached 2,000 feet, for example, the diamond driller and his helper were using about two and a half hours handling rods for every hour and a half of actual drilling to obtain 15 feet of core. And those rods weighed 5 lbs. per foot.

Now, with the wire line system, it's a brand new ball game. Instead of raising and lowering a drill string maybe 15 times in a week on the basis of a hole in the 2,000-foot range, the drill crew pulls rods only two or three times, and then usually just to check the condition of the drill bit and reaming shell.

This new approach uses an assembly inserted in the top two feet of the core barrel inner tube, consisting of two rubber shut-off valves and two self-locking spring latches, capped by a spearhead or pick-up point. The bit, shell, core barrel and rods are then lowered into the hole in the conventional manner, the water turned on, and drilling commenced. When the core barrel is full the shut-off valves expand and stop the flow of water through the hole, which is immediately signalled to the driller by a jump in his water pressure gauge.

He unscrews the rod at the top of the hole to disconnect the water connection, leaving the top of the drill string open. The hoist is then turned on and an overshot, which is a lifting device attached to a short weighted rod, is lowered rapidly down through the entire drill string on a 1/8-inch stainless steel wire.

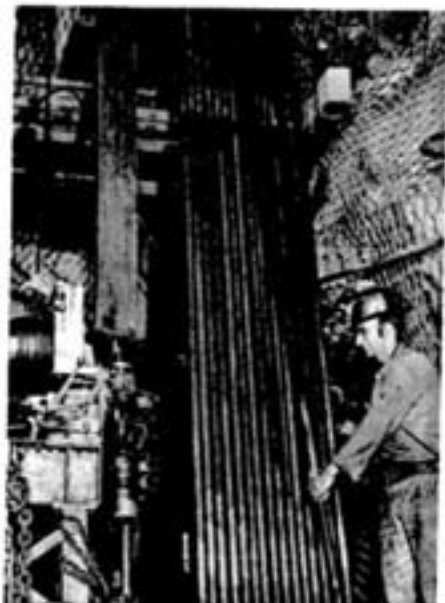
Now Only the Core Tube Is Pulled

When the overshot hits the spearhead of the core tube assembly its two lifting dogs lock firmly in place. Then as



THIS IS A TYPICALLY CLEAN, brilliantly lit electric diamond drilling station underground at an Inco mine. Overhead protection is provided by heavy wire mesh. Cuttings and water pumped up from the drill hole flow to a sump, from which the sludge is loaded into mine cars and the water is returned to the mine water purification system. Diamond driller Ernie Myre is operating the wireline hoist, which has a capacity of 5,000 feet, to retract the overshot and core tube assembly, seen emerging from the top rod in the drill head. The circular chuck seen lower down rotates the entire drill string. At upper left is the heavy duty hoist for pulling rods. The staging above is necessary for handling the 30-foot lengths of rod.

WITH THE THINNER nickel steel rods used in the wire line system, a 30-foot length weighs 96 lbs. compared to 150 lbs. with the old method, to the relief of the drill crew. The shinier chromed joint of the new-type rods can be clearly seen toward the top of the picture.



INCO SPECIFICATIONS for diamond drill bits call for a body of mild steel with diamonds set in the crown and reaming shell in a powder metal matrix of special alloy for toughness and hardness. The channels seen in the bit allow the drill cuttings and pressurized circulating water to pass on the outside of the string of rods up through the hole to the drill station.





WITH HIS RIGHT HAND, drill helper Bob Legault has depressed the lifting dogs of the overshot to disengage the spearhead of the core tube assembly. The dark rings in the assembly are the rubber shut-off valves which expand under pressure when the core tube is filled.



HERE'S THE STAINLESS STEEL WIRE that turns the trick, permanently attached to the overshot which is about to be dropped down the drill string to bring up a tube of core.



ERNIE MYRE is emptying the $\frac{3}{4}$ -inch drill core from a 15-foot tube into a core box which, identified as to the location and depth of the hole, will be sent to surface for examination by exploration geologists.

soon as the hoist starts pulling on the wire, the spring-loaded latches in the core tube assembly retract, and only the tube containing the drill core is brought up to the station, at the rate of about 400 feet per minute.

The driller sets the core tube aside to be emptied later, and drops another inner tube with a spearhead assembly down the drill string, after making certain the rods are full of water. He starts the water pump immediately to assist the downward travel of the inner tube into the core barrel at the bottom of the hole, where its assembly promptly latches it in position and drilling is resumed. The exchange of tubes takes about 20 minutes in a 2,000-foot hole, compared to two and a half hours by the old method.

Sudbury Rock Was Far Too Hard

Wire line diamond drilling was introduced by the E. J. Longyear Company some years ago in New Mexico, but investigations by International Nickel found it unsuitable for the Sudbury district. The thinner drill rods necessary to allow passage of the core tube assembly just wouldn't stand the gaff of deep drilling in the very hard rocks of the

Nickel Basin. The solution came when Longyear developed a much stronger nickel alloy rod with a 9-inch chromed section at the end, and also a new type of self-sealing thread with a one-degree taper, that greatly strengthened the joints in the drill string.

Though the wire line system has sharply increased diamond drilling efficiency, the old bugbear of hole deviation is still a problem. Nobody seems to know exactly why, but a drill hole often insists on wandering off from the direction in which it is aimed, and consequently must be regularly checked by various tests, including the lowering of a special internal survey instrument after about every 500 feet of progress. Deviations are corrected by a time-consuming method of wedging to steer the bit back on line.

Will Enlarge Research Opportunities

With the increased efficiency of the new system, Inco's diamond drilling department will have more latitude in which to continue its research into such factors as size and design of bits, drill speed in various types of ground, etc., to reduce deviation to a minimum.

Retired on Inco Pension

WITH 20 OR MORE YEARS OF SERVICE

"GUS" WALFORD

Well known in the Sudbury area through his activities as off-time trials chairman of the Sudbury and District Kennel Club, Angus Walford — better known as Gus — has retired on disability



Mr. and Mrs. Walford

pension from the copper refinery, where he was tankhouse aisle foreman for the last five of his 36 Inco years.

Born in the town of Walford, which is located some 60 miles west of Sudbury on Highway 17 and bears the name of his pioneer forebears, Gus started with the Company in the copper refinery research department in 1934. He was promoted to tankhouse shift boss in 1944.

His marriage to Edna Dillane of Little Current took place in 1935. They have a family of four, with three grandchildren.

Now living in Beachville, Ontario, Gus and Mrs. Walford — who shared her husband's enthusiasm by serving as Sudbury and District Kennel Club secretary for the five years prior to their move south — are active in the Oxford Kennel Club. Their 14-year-old poodle, Sudbury obedience champion "Guardman Nicholas", is now represented by his 8-year-old "daughter", "Guard's Autumn Haze".

STEVE TRACZ

A trip to his home town in the West Ukraine to visit relatives and friends he hadn't seen since he left there for Canada in 1929, was the retirement gift that service pensioner Steve Tracz gave to himself at the end of a 27 year Inco career.



Steve Tracz

After joining the Company at the copper refinery in 1935, Steve turned in his badge in favor of farming in 1942. He returned in 1943 as a steel sharpener at Frood mine, and was a plumber there during the two years prior to his retirement.

His marriage to Mary Martin took place in 1941, and they had a family of three. Mrs. Tracz died in 1964.

A capable cook and a good

gardener, Steve will continue to reside in Sudbury where he and his friends, many of whom are pensioners like himself, can sit in the sun and swap memories of "the good old days".

GARNET FLANNERY

First joining Inco at Copper Cliff way back in 1929, Garnet "Red" Flannery started punching on the converters for skimmers Frank Matte and Lloyd Sleaver when he returned in 1933, and was himself a skimmer for 35 years until his retirement on special early service pension.

Red was born in Venosta in Quebec's Gatineau Valley and worked in that area driving a



Mr. and Mrs. Flannery

team of horses on a Gatineau River dam-building project. Married at Sturgeon Falls to the former Alice Laframboise, now a schoolteacher in Chelmsford, he is the father of two sons and a daughter, with one grandchild.

Red spends a lot of time keeping in shape at one of the Sudbury health spas, and listening to his collection of western and folk music. When around the house, he enjoys donning the chef's apron (Mrs. Flannery admits his Irish stew is unbeatable) or tackling projects in his home workshop.

DELPHIS GIROUX

A Frood miner throughout his more than 40 years with Inco, Delphis Giroux has retired on special early service pension. Starting as a trammer in 1929, he worked as a drill fitter since 1952.

Born in Turin, Michigan, Delphis came to Cobalt with his parents in 1917, and was em-



Mr. and Mrs. Giroux

ployed in the silver mines there and in the Kirkland Lake gold mines before joining the Company.

He and his wife (Edna Fauvelle before they were married in Cobalt in 1929) have three daughters and one son, Raymond, a driller following in his dad's footsteps at Frood.

Mrs. Giroux, who lost her sight 15 years ago as a result of glaucoma, manages to do all her own housework, types, and is mastering Braille.

A Chelmsford resident, Delphis will be dividing his summer activities between gardening and fishing.

JOE VECCIA

Fano, on the sunny Adriatic coast of Italy was home to Joe Veccia before he came to Canada in 1949. Settling in Copper Cliff the following year, he was employed by the Company on the



Joe Veccia

nickel reverbs, where, for the last 14 years he was a matte man until sidelined by recurring stomach trouble.

In 1933, he married Camilloni Eleonora, who died in 1966. Four daughters and four grandchildren give him many happy hours as a father and a grandfather. Joe enjoys gardening and housekeeping at his home in Lockerby, and will match his spaghetti with anyone around. He is planning a trip back to Italy to visit his three brothers and sisters.

BILL CHICQUEN

Bill Chicquen left his Chalk River home at 14 to work in lumber camps and on farms in the Ottawa Valley. He joined the Company in 1936 and worked his first eight Inco years in the converter building at the Coniston



Mr. and Mrs. Chicquen

smelter. Transferring in 1944 to the Copper Cliff smelter, he was a tapper helper on the nickel reverbs for the last 25 years.

Annie Boulay became his bride at Rolphston in 1932, and the Chicquens have one daughter and five grandchildren. On disability pension because of a heart ailment, Bill enjoys reading mystery novels and entertaining his visiting grandchildren. He and his wife reside in Sudbury.

LAWRENCE UBDEGROVE

"I still miss getting up in the morning and going to the mine", said Lawrence "Tiger" Ubdegrove, retired on disability pension after 23 years with the Company. Born in Elgin, Ontario, near Smiths



Mr. and Mrs. Ubdegrove

Falls, Tiger started with Inco in 1947, and worked all his Inco years at Frood Mine. He was a pillar leader for 12 years.

His marriage to Marguerite Caine at Gananoque in 1947 took place shortly after the two had met at an old-time barn dance in Jones Falls. Their family of six boys and a girl range in age from 3 to 19.

Tiger loves gardening at his Minnow Lake home and plans to take on part-time horticultural work. True to his old habits, he still often gets up at 5:30, and has his 50 x 50-foot garden hoed by 7:30. He also likes to go fishing for speckled trout in the River Valley and Cartier areas.

GILBERT RHEAULT

Gilbert Rheault, who was born in Long Lake, grew up with a penchant for travel and at age 18 he went to work for a diamond drilling company. This job eventually took him to such distant places as Flin Flon, Thetford Mines, England and Scotland, the Shetland Islands and Gibraltar.

His marriage to Lilo Leclair took place in Sudbury in 1930. In 1947 he settled down to work for Inco at Garson, where he was a stoep leader for the last 22 years. He retired on disability pension as a result of injuries he sustained when attacked by two unidentified assailants on a street in Hanmer some months ago.

Calling work his "sport", Gilbert has exchanged his home in Hanmer for a small farm at Noelville, where he keeps busy raising chickens and ponies.

WILLARD HEACOCK

Willard Heacock, who has retired on disability pension moved as a child with his family from Detroit to Chatham, Ontario in 1922.

After working for four years as a logging truck driver at Westree, west of Capreol, he joined the Company at Levack in 1937 where he became rockhouse boss.

Willard sustained injuries to his nervous system as a result of a car accident in 1968. Although now limited in his activities, he

P. I. OGILVIE

Valuable service extending over two decades on Ontario Mining Association advisory committees studying procedures for the control of rock bursts, and also as an adviser to the Canadian Standards Association Committee on wire rope construction, were part of Pat Ogilvie's contribution to the mining industry during his 34 years with International Nickel.

Born in Jamaica, he graduated from the University of Alberta at Edmonton in 1931 with a B.Sc. degree in mining geology, and after working on geological surveys in Alberta and the North West Territories he joined International Nickel in 1936, starting as a mucker at Frood mine. He was transferred to the mine geological office a few months later, and in 1943 became rockburst engineer in the mines department at Copper Cliff. He was appointed assistant to the chief geologist in 1957, and in 1963 was transferred to the Toronto offices of the Company's exploration department where, in June 1969, he was named manager of administrative services.

His marriage to Gena Olson took place at Edmonton in 1935, and they have two children. They will continue to reside in Port Credit. A large gathering of exploration department members and their wives, and executive of-



Mr. and Mrs. Ogilvie

manages the upkeep of his Windy Lake home, and also the two

icers at Toronto, attended a dinner in honor of Mr. and Mrs. Ogilvie at the home of Mr. and Mrs. Ron Taylor, Oakville. Pat was presented with a gift of luggage by vice-president H. F. Zurgrigg, and also with a sculptured ore sample emblematic of his prowess as a curler, presented by Gordon Merriam on behalf of the Foot & Hangingwall Society of Sudbury district.

For many years a dedicated "ham" radio operator, Pat intends to resume this absorbing hobby, as well as continuing his favorite sports of hunting, fishing, and curling.

jects. The senior Morassutti resides in Sudbury.

FRANK GODON

Not all the young men went west. A lot of old ones came east, like Frank Godon.

He was born and grew up at Pilot Mound, Manitoba, and after



Mr. and Mrs. Godon

10 years as a CNR section man joined Inco at Creighton No. 3 shaft. He transferred to Frood in 1938 and remained there throughout his working career, winding up as a tippelman.

Helen Bartlett of Carmen, Manitoba, became Frank's bride at Sudbury in 1940. Of their 10 children, two are married to Inco employees, Margaret to Russ Folber of the separation building in Copper Cliff, and Lorna to Moran Corkum of 800 level, Frood.

Frank plans to take it easy around his Nepahwin Avenue home in Sudbury, although with three children yet to complete school, he and Mrs. Godon will still be busy as parents. Our picture of Frank and his wife was taken on his 65th birthday.

ARCHIE SAVILLE

"Calculating pensions for others is a bit different from having one worked out for yourself—you get a real personal appreciation of what a fine thing the Com-



Mr. and Mrs. Saville

pany's retirement system is," said Archie Saville, who was supervisor of the retirement section in the Port Colborne accounting department.

Born in London, England, he sailed for Canada in June, 1925, and the following month became employed at the nickel refinery in Port Colborne. He worked at various jobs in the plant before being transferred to the accounting department in 1929, where he was shipper at the time of the lay-off in January, 1932.

He was re-hired in October, 1935, and was re-transferred to the main office accounting section in 1942. He enlisted with the RCAF in 1942 and returned to the accounting group upon discharge in 1946, where he re-

mained to his full service retirement.

Evelyn Horton and Archie were wed in Port Colborne in 1941. They have two daughters and one grandson.

Athletics have always been a large part of Archie's life. He excelled in tennis (Canadian senior national doubles champion in 1954; Welland County champion and local champion for several years), badminton (Niagara District and local champion) and bowling (on many winning teams over the years). "I started to play golf four years ago and find it a real challenge," he said. His wife Evelyn has shared his love of sports and has also been a highly proficient performer.

Archie is a strong supporter of youth work and for years has instructed groups of youngsters on the finer points of tennis and badminton. He will be deeply involved in the local minor hockey program this winter. He and his wife are planning a trip to England and Scotland to visit relatives. "I've always been pretty active, but now I'm supposed to be retired I seem to be busier than ever," he said with a happy grin.

RICHARD JENSEN

After coming to Canada from Norway in 1927, Richard Jensen first worked in an Algonquin Park lumber camp. In 1928, he went north as an employee on power house construction, and remem-



Mr. and Mrs. Jensen

bers seeing horses and buggies stuck to the axles in spring mud in Kapuskasing's "traffic" circle.

After a return trip to Norway, he worked for three years with Ontario Hydro and during this time was employed on installations bringing the first provincial hydro power to Copper Cliff in 1929 to supplement the supply from the Company's Huronian system.

He finally became an Incoite in 1936, working for Barney Hamilton on electrical installations at No. 1 changehouse at Copper Cliff. He spent the last 15 years of his service as a 1st class maintenance electrician in the winding shop at Copper Cliff.

He was married in Sudbury to Alveretta Evoy, a former Hamilton girl. Betty, one of their two children, is the wife of Harry Stephenson of the Copper Cliff machine shop.

Richard and his wife particularly enjoy pickerel fishing on the Manitoulin, and growing flowers at their home in Sudbury.

manages the upkeep of his Windy Lake home, and also the two



Mr. and Mrs. Hancock

summer cottages he has for rent on the lake.

Two sons and three grandchildren are the happy family that have resulted from his marriage at Cartier in 1940 to Irene Charette, a Britt girl. Definite plans for the future for Willard include moving to western Canada, where one son, Dennis, resides in Edmonton.

GORDON McDOUGALL

Seriously injured in a car accident in 1968, Gordon McDougall has finally had to go on disability pension. Born at Paynton, Saskatchewan, he first came to Inco in 1939, went back west to work the family farm and then returned to Inco in 1948 at Garson, where he was a stope leader for the last 20 years.



G. McDougall

Married in Sudbury in 1942 to Vivian Prescott, Gordon is the father of six boys and two girls. One of his sons, Al, works as a junior sampler in the Copper Cliff smelter.

As a former Nickel Belt ball-

player who pitched for both the Frood Tigers and the Creighton Indians, Gordon now gets his baseball kicks following Expos on television. He likes to take an occasional turn as chief cook in the family home in Sudbury.

JOHN MORASSUTTI

"It's really a pleasure to reach pension and take it easy now, but I sure miss the old gang in the carpenter shop." This was the way Creighton's John Morassutti summed up his mixed feelings after 36 continuous years' service with the Company.

Born in Udine, Italy, he came to Canada in 1926, and started



Mr. and Mrs. Morassutti

the same year with Inco at Creighton underground. He broke his service in 1932, but became an Incoite again in 1934, again at Creighton.

Gemma Fabris became John's wife in 1933 in her home town of Valvasane, Italy. They have two sons and four grandchildren.

Having worked his last 16 years with the Company as a 2nd class carpenter, John is ready and able to put some finishing touches on his Long Lake cottage and "keeping the tools 'unrusted,'" as he put it, by helping his two sons with their home-renovation pro-

There's Nothing Fishy About These Denizens of the Deep

Not all the denizens of Sudbury's watery depths are fish. Indeed, 72 of them are altogether human, and some even female, but when equipped with their underwater breathing apparatus, the members of the Dolphin Aquatic Club are quite at home in the environment normally reserved for the scaly species.

Originally formed by personnel of the RCAF radar station at Falconbridge, the Dolphin club has long since "gone public," but fortunately is still allowed use of

the airbase pool. In fact most of the club's winter activities are centred there where experienced members teach novice divers the all-important underwater safety procedures.

Perform Public Service

True to their club motto of "Service and Sport in Safety," every spring the members participate in a clean-up campaign at Ramsey Lake. Working with the Sudbury Parks and Recreation Committee, the Dolphin divers make Ramsey's public beaches



John Luptak and Bill Chandler inspect a 50-pound anchor retrieved during a cleanup program this spring in Ramsey Lake, an annual public service performed by the Dolphins.



Using a chart of the lake bottom dive master Joe Duval (centre) briefs four of his fellow members of the Dolphin Aquatic Club on potential hazards in a selected dive zone. Left to right around Joe are Stobie miner Hubert Legault, Stobie electrician John Luptak, and two planned maintenance men at Copper Cliff, Bill Chandler and Evan Russell.

and underwater approaches cleaner and safer for the public's summer enjoyment. Also in conjunction with the Sudbury recreation authorities, the club conducts a free skin-diving instructional course every summer at Lake Ramsey. Members attend potentially dangerous water sports regattas, and some are always on standby with civic authorities for any water-based emergencies.

Explore Ship Wrecks

When diving for summer sport, much of the club's activity takes place in the waters on and around Manitoulin Island. In the depths adjoining its thousands of miles of shoreline, the island has many ship wrecks that are a joy to explore. Members recently discovered a 2,000-pound anchor in 100 feet of water near Little Current, and plans are under way to retrieve it.

President of the club for the upcoming year is Pieter Bregman, an operator in the FBR extension control room at Copper Cliff.

His mates on the executive are vice-presidents Bill Chandler and Richard Hammond, secretary Sandra Waltenbury and treasurer Lois Carson. The club is affiliated with the Ontario Underwater Council and the North American Underwater Institute, membership in each of which demands a high level of competence and safety standards enforcement.

Trial Dive for Novices

Although a completely equipped scuba diver spends upwards of \$400 on his equipment, the Dolphins' policy in training a novice diver makes no such outlay for equipment necessary. The club supplies the gear during the preliminary training stages, so that a novice can find out for a nominal sum whether or not his interest in scuba diving dissolves as soon as he gets under water.

The club's next introductory program begins in early October. Interested persons can contact members of the executive or write the club at P.O. Box 424, Sudbury.



Bill Chandler mans the boat, while Evan Russell and Hubert Legault do a back-roll into the water, conforming with recommended safety procedures which also specify a maximum diving depth of 130 feet.

To ensure that neither stays down too long, diving "buddies" Hubert Legault and Evan Russell synchronise their watches prior to descending. Their double-tank breathing apparatus and gear weighs about 80 pounds.

