

The Triangle

JUNE 1975



The Triangle

Editor,
Derek Wing, Copper Cliff
Associate Editor,
Les Lewis, Port Colborne



On the cover . . .

Miners of nearly 90 years ago — the proud faces of the first crew at Murray mine in 1886. On February 25, 1884, Thomas Murray and his brother, William, of Pembroke, together with John Loughran, of Mattawa, applied to the government of the day for a patent on lot 11, concession 5, in the township of McKim. Described as mining lands, the property consisted of 310 acres and was purchased for the sum of \$310. More about the Murrys and Sudbury area mining history in this month's "A needle dipped . . ."

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A red triangle of unusual brilliance caught the eye of Dorothy Nickle as she passed by a bed of crocuses beside her home on Godfrey Drive in Copper Cliff. Looking closer, she saw that the splash of colour adorned the breast of a tiny hummingbird. She called her neighbour, retired Inco agriculturist, Clare Young, who picked the bird up and carefully carried it to Inco's nearby tropical greenhouse. The following morning, a tiny flash of colour was darting around the greenhouse busily feeding. The little bird is in the above picture — can you find it? If you can't, turn to the inside back cover.

Appointments

George Aniol, mine geologist, Garson mine.

Ross Ansley, supervisor, industrial evaluation.

Marcel Bigras, timekeeper, division comptroller's office.

Simon Brooksbank, chief mines engineer, P.T. Inco Indonesia.

Ed Bukala, timekeeper, division comptroller's office.

Lucy Campbell, product costing clerk, division comptroller's office.

Diane Chmielek, process clerk, Copper Cliff nickel refinery.

Gary Cotnam, programmer, computer systems, Copper Cliff.

Leno Crema, senior mechanical maintenance engineer, smelting and refining.

Robert Debrle, material controller, purchasing and warehousing.

Hank Derks, chief first aid co-ordinator, safety and plant protection.

Shane Desjardins, zone planner, maintenance, Iron Ore Recovery Plant.

Mary Dukovic, clerk-stenographer, mines drilling.

Don Ferguson, general foreman, safety, smelting and refining.

Wayne Garland, senior geologist, Kirkwood mine.

Jim Grassby, director, corporate information systems, New York.

Chuck Greenough, chief security co-ordinator, safety and plant protection.

Jim Haavisto, dust sample analyst, mines engineering.

Shirley Harper, stenographer, Copper Cliff nickel refinery.

Gilbert Lux, process assistant, Copper Cliff copper refinery.

Alex McCuaig, co-ordinator, industrial relations, Toronto.

James McGhee, security guard, safety and plant protection.

Melody Medina, clerk-stenographer, Copper Cliff nickel refinery.

Jim Michlouski, materials clerk, Coleman mine.

Charlie Mitchell, superintendent, roasting, chlorination and reduction, matte processing.

Bill Morton, supervising timekeeper, Frood mine.

Harry Pentney, superintendent of materials administration, Exmibal.

Terrence Podolsky, corporate vice-president, Toronto.

Leo Proulx, supervising timekeeper, Copper Cliff North mine.

Aime Sabourin, materials clerk, maintenance field force.

Bruce Sheehan, security guard, safety and plant protection.

Gerry Sturgeon, material controller, purchasing and warehousing.

Wayne Tonelli, security guard, safety and plant protection.

Paul Valio, material co-ordinator "B", Copper Cliff North mine.

Donald Warner, superintendent, process technology, P.T. Inco Indonesia.

John Woods, process assistant, Iron Ore Recovery Plant.

Jack Young, timekeeper, division comptroller's office.

Port Colborne burner for Indonesia

Frank Olano, general superintendent, operations, P.T. Inco Indonesia, left; Peter Ryan, general superintendent, process research stations, and Glen Sherk, superintendent of the number two research station.



At International Nickel's research stations adjacent to the Port Colborne nickel refinery, a burner for treating Indonesian lateritic ore throws a brilliant flame during a recent proving session.



A specially-designed burner unit was test-fired recently at Inco's Port Colborne research stations. The design of the burner is based on technology developed at the research stations for treating lateritic nickel ores. The burner was built for the first commercial scale reduction kiln which is to be installed at the nickel processing plant currently being constructed on the Island of Sulawesi in Indonesia for Inco's subsidiary, P.T. International Nickel Indonesia. The first stage of the mining and processing project, which will have an annual production rate of some 35 million pounds of nickel in the form of nickel matte, is expected to come into operation in 1976. Plans are being advanced to expand the project's capacity to approximately 100 million pounds annually by 1979.

First to come were the Nipissing and the Ottawa, the Mississagi and the Ojibway — nomadic hunters and trappers who crafted their primitive tools from the abundant rock and stone — pausing now and then to admire the "wondrous" colours and brilliants reflected by the jagged fragments when turned to the sun.

Next came the white fur traders, drawn by the untold wealths of the unexploited northlands; so intent were they in their search for the precious skins, they looked at ore-laden boulders and caves, and saw only lairs and dens. With these traders came the establishment of the first settlement in the Sudbury district. The year was 1822, and the settlement was Wahnapiatae Post.

Lumber companies were next to come; they bore witness to the eventual decline of the fur trade, and themselves became the unfortunate victims of the inevitable ... a depletion of timber resources.

But with the felling of Ontario's majestic birch and pine, elm and cedar, came the unearthing of vast mineral potential — riches in rock, never before suspected. A mere scraping of moss could reveal treasures that, for so long, had remained obscure ... undetected and unrecognized.

Obvious to the trained eye were the meanderings of rich veins abounding in

copper and iron, cobalt, nickel, silver and gold.

It was early in 1848 that a surveyor — Alexander Murray — examined properties near the Whitefish River. Noticing copper pyrites in company with other minerals, he brought a specimen out for analysis. The presence of nickel was confirmed. And ignored. For the first time.

In 1855, Albert Salter was directed by the Commissioner of Crown Lands to "explore the rivers emptying into Lake Huron eastward from Sault Ste. Marie". Salter gave an account of many signs of mineral wealth, but his report simply became a dust collector. And again, nickel was ignored.

A year later, Salter returned to the district, this time to make preparations for a general survey. While running a meridian line north of Lake Nipissing, his compass needle deflected erratically from its true bearing. Salter had "discovered considerable local attraction" and, while not a geologist, realized the implications. He reported his suspicions to Alexander Murray who happened to be making geological surveys in the same vicinity.

Murray visited the locality and set down his findings; he put the local "attraction" to the presence of "an immense magnetic trap, observed to hold

yellow sulphuret of copper occasionally". A sample of the rock gave great evidence of magnetic iron ore, with diminutive traces of copper and nickel found in grains of the non-magnetic mineralization.

Although officially reported to and by the government, the importance of the discovery was, for the third time, disregarded.

There were any number of valid reasons for the lack of interest: the site was 30 or 35 miles distant from navigable Lake Huron; the northlands were almost impenetrable — there was rocky terrain, and ridges that rose to quick, dizzying heights; there were stretches of marshland, with few paths in and fewer paths out.

And while nickel sold for more than a dollar and a half a pound — many times the price of copper or iron — its few uses and its difficulty of extraction only added to the long list of disadvantages.

In an effort to persuade mining ventures to develop its mineral resources, Canada's young government made land purchase almost ridiculously easy; the price put on public lands was one dollar an acre. The generous terms found few takers.

Then, in 1883, with the advent of the Canadian Pacific Railway, came a series of "blunders" that, surprisingly enough,



A needle dipped ...

would lead to the full-scale development of nickel and, simultaneously, the Sudbury area.

Lost in a fog, William Ramsey, C.P.R. railroad surveyor, brought the proposed route north, rather than south — as originally intended — of a body of water appropriately dubbed "Lost Lake".

Bringing his right-of-way cutting crews through, James Worthington had only praise for the surveyor for using "good judgment" and, to honour him, Worthington immediately renamed the body of water "Lake Ramsey".

Shortly thereafter came the second "faux pas" leading, indirectly, to the eventual winning of nickel.

Slicing through the outcroppings, a blacksmith with Worthington's rock-cut gang, Thomas Flanagan, picked up a piece of rock shot full of gold-coloured metallics and thought he'd found a gold mine! His jubilation was short-lived — the discovery turned out to be copper sulphide, but, in actual fact, may just as well have been gold — the ore assayed a high copper content, and the prospectors poured into the area.

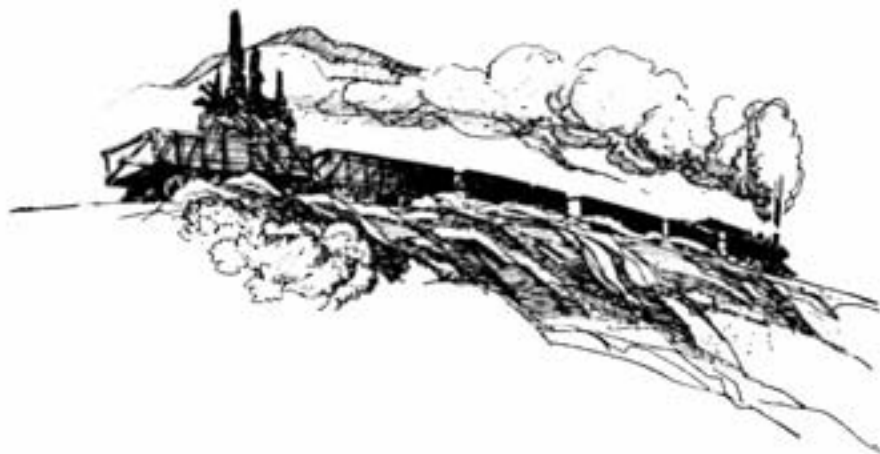
The ore deposit was only a few miles from the place where, 27 years earlier, Salter and Murray had been attracted by the "presence of an extensive magnetic heap".

Scene of major activity was Sudbury Junction, terminus of the railway's main line and the Algoma branch, and so named by Worthington for his wife's birthplace, which had been Sudbury, Suffolk, England. With tongue in cheek, we must make mention that it was a title he'd "reserved for a station he'd deemed likely to become important"!

Converging on the Sudbury area at about the same time were Rinaldo McConnell, Thomas Frood, James Stobie, and Francis Crean — all prominent as prospectors and investors. While the latter three may — and should — sound familiar because of the mines that today still bear their names, it was McConnell, a plunger and a man of tremendous energy, who later told Samuel Ritchie about the amazing "cliffs of copper" inherent to the area, and thus inadvertently paved the way to yet another chapter in the winning of nickel.

Ritchie had come from Akron, Ohio, to Ontario, to develop his iron ore interests,





his subsequent need for transportation had brought into existence the Central Ontario Railway. Intrigued by, and in an effort to reach, those fascinating cliffs of copper, he endeavoured to have his rail charter extended. The ultimate result was the formation of the Canadian Copper Company, and the name of the town built around it became . . . Copper Cliff!

Just about this time, Robert Thompson of The Orford Nickel and Copper Company — formed in 1878 to develop a nickel deposit in Orford, Quebec — had established a smelter in Constable Hook, New Jersey, and was on the move, searching for ore to keep the smelter active.

Hearing of great possibilities in the Sudbury area, he travelled north and inevitably met up with Ritchie of the Canadian Copper Company. The two soon reached a mutually-beneficial agreement, and Ritchie began shipping ore in 1886; the shipments were accompanied by signed reports indicating that the copper content of Ritchie's ore was about seven per cent.

It wasn't long before complete and utter chaos reigned supreme in the Orford smelter; the ore looked all right, but refused to produce the expected results; the smelted product was totally unacceptable.

Immediate and intensive testing revealed that, instead of containing seven per cent copper, the ore actually harboured four and a half per cent copper and two and a half per cent nickel. An outrage! Copper was the element of the day! Nickel was a nuisance! No extensive use had yet been found for

the hard metal, and its presence made difficult the smelting of copper.

But nickel WAS going for a dollar a pound — much more than copper — and the innovative Ritchie started a sales campaign for the perverse nickel that had for so many years bedeviled chemists and scientists, engineers and furnacemen; in fact, "nickel" is from "Kupfer-Nickel" (devil's metal) so called by Saxony's superstitious miners of 1751 vintage who believed a spell had been cast over their ores, from which no copper could be made.

Necessity being the mother of invention, the Orford Copper Company began trying to figure a way to alienate the nickel from the copper. Robert Thompson happened to be present when some hundred pots of smelted copper matte had been dumped; he quickly noticed a peculiar colour separation common to many of the cones. Curious, he struck one of the cones with a sledge hammer and noticed an unusual fracture. He then tapped cone after cone and, with increas-

ing elation, saw that a score of them had fractured in the same way — the bottom third of the cone had broken away as a bright sulphide from the top two-thirds which showed dark and flaky. Samples were ordered, and showed that an almost pure nickel sulphide had settled to the bottom, while the top section contained copper, iron, some nickel, and a large amount of sodium.

How come?

Upon inquiry, Thompson learned that various residues from the chemical house had been part of the charge that produced the unusual matte. But which? . . .

He detailed a man to melt normal matte in crucibles, each with one of the many chemicals used in the plant. Negative results, until at last came a heat, or a smelt, which gave a separation similar to that which had inspired the experiment.

By smelting the ore together with acid sodium sulphate (nitre cake) and coke, the nickel-copper matte separated into a nickel sulphide and a copper sulphide.

One of the more dramatic — nevertheless, accidental — developments in the winning of nickel . . . resulting in the famous Orford Process which, for many years, was to prove the best and least expensive method of separating that "old devil" nickel from copper.

Just think of where we'd be — or wouldn't be — were it not for Salter's report — which was ignored; Murray's report — also disregarded; the Ramsey survey — a mistake; the Flanagan "gold" discovery; Ritchie's seven per cent copper — a third of which turned out to be nickel; and Thompson's Orford Process — an accident.

Surely . . . something to ponder!





Charles and Barbara Cox with their two sons, Christopher, 6, and Rodney, 8. Charles is a driller at Copper Cliff South mine when he and his family aren't enjoying the great outdoors.



Ray Lectair and his wife, Edith, with their children. That's Gordon, 8, beside dad, Robert, 4, and Kimberley, 2, on mom's knee. Ray works in the transportation department at the Copper Cliff smelter.

Family Album

Meet Murray and Pat LeMay with their children, Kathy, 11, and Glen, 9. Murray is a maintenance foreman with matte processing at the Copper Cliff smelter and is a model train buff.



From the Port Colborne nickel refinery — Larry and Brenda Parker and their family. Larry works in the mechanical department. Youngsters are Leah, 6, Rodney, 4, Chantel, 2, and the baby, Chad, four months.





For Inco, Sam Laderoute, from public affairs, presented Lillian Eyre with a \$500 scholarship cheque. She was declared the most outstanding entry.

The 30th annual Kiwanis Music Festival was held in Sudbury recently. The event is sponsored by the Kiwanis Clubs of Sudbury and Lockerby, and held in conjunction with the Ontario Registered Music Teachers Association, Sudbury branch.

More than 3,000 participants entered the six-day event to compete in all classes of musical endeavour — from church choirs to violin solos. Because of the large number of entries, recitals were held at five different places throughout the city.

On the final night of the festival, the top participants presented a concert and received scholarships from different companies and individuals in the Sudbury district.

Inco's \$500 scholarship for the most outstanding entry in all classes went to Lillian Eyre. Lillian, a fourth year student at the University of Western Ontario, will graduate this year with a bachelor of music degree in performance. She is a former student of Sister Irene Morrow at Marymount College.

Most outstanding musical entry

Inco salutes

Three best science exhibits

Dr. John Bozic, Inco's supervisor of analytical services, presented \$100 cheques to the three best exhibits at the Sudbury Regional Science Fair. The winning exhibitors are, from left, Henry Goegan, Greg Ducharme, Julius Toth, Jeff McIsaac, Brian Kehoe and, presenting the awards, Dr. John Bozic.



Planning a future trip to Mars and don't know what to pack? Want to find out how to measure the intelligence of your pet Gerbil? Answers to these and other questions were on display at the seventh annual Sudbury Regional Science Fair.

The fair was held at Sudbury Secondary School and consisted of 79 science exhibits assembled by students attending school in the Sudbury district.

Dr. John Bozic, Inco's supervisor of analytical services, presented three \$100 cheques on behalf of Inco. The Inco winners were Jeffrey McIsaac and Brian Kehoe from St. Raphael's School for their "Study of Floating Particles in the Air", Julius Toth and Paul Parisotto from St. Charles College for their project on "Fermentation and Distillation", and Henry Goegan and Greg Ducharme from St. Charles College for their display on "Diets and How They Affect You".

"Diets and How They Affect You" was also picked as one of the four exhibits which represented the Sudbury district in the Canada-wide Science Fair which was held in Jonquiere, Quebec.

At Copper Cliff, the Clarabelle Grinding Aisle — a drawing from the hand of Montreal artist "R.D." Wilson, is selected from a series of 30 that "R.D." created during a visit to International Nickel's mines, plants and to surrounding areas in the Sudbury district and at Port Colborne. The reproduction on the other end of this tear-out stub is the sixth of a set of 12 that, singly, will be included in each of the 1975 issues of "the triangle".

Unlike your super jets and other fixed-wing aircraft, helicopters fly comparatively short distances at fairly low levels, typically at altitudes of from several hundred to about 1,200 meters — a fact which has long contributed to two major problems, particularly in military helicopters operating over sandy beaches and dry terrain.

Problem one is severe erosion of helicopter blades due to sand being kicked up by air currents created by the rotation of the blades. Problem two is the non-uniform de-icing of blades, causing imbalance and loss of control.

Both problems have now been solved by applying a pure nickel plating to the critical areas of the leading edge of the helicopter blades . . . a technique developed by the Boeing Vertol Company and now being made available to the aviation industry, in the interest of safety and economy.

In practice, the harmful erosion reaches greatest potential, or becomes most destructive, during take-off, landing, and hovering actions — particularly over beaches — and the destruction is intensified if rain or fog are encountered.

A research programme, conducted over a ten-year period, tested metals, metal alloys and non-metallic materials in a whirling blade test rig in order to determine a protective coating that would meet military stipulations. The only material that met — in fact, over-fulfilled — the requirements, was pure nickel, plated onto the stainless steel leading edge to a thickness of 0.38 mm (0.15 inches) and feathered to 0.13 mm (0.005 inches).



The two main advantages offered by this pure nickel plating are the extreme toughness that resists abrasive sand/water action, and a strain capability that accommodates the flexing of the wing.

In addition to resisting erosion, the nickel plating contributes to an improved de-icing technique introduced to the new blades. Desirable, uniform heat patterns are achieved with nickel plating over the fiberglass/stainless steel blades.

Since the protective nickel coating doesn't erode within guaranteed life spans, there's no loss of weight, meaning that blades for any given type of 'copter rotor will now be interchangeable — a big factor in simplifying field maintenance and in reducing down-time and inventory.

The tanks used for the nickel plating of blade components are housed in what may well be the world's largest nickel plating factory — a facility expected to be augmented to handle the blade production for the new helicopter models in various stages of design and prototype development, including the CH-46 for the U.S. Marine Corps, the CH-47 and UTTAS for the American Army, and the Model 234 Commercial Transport.

Title of "most impressive" goes to the Boeing/Vertol XCH-62 Heavy Lift helicopter, designed to carry up to 32 metric tons (35 tons). Each of its eight 14-meter (46-foot) blades will also be protected by the pure nickel plating.

Looks like nickel's right up there!



After forming the lead sheet on the dressing platform, this crew attempts to position it for removal by the overhead crane. Men are, from left, Pat Hudson, George May, Mirko Dobrich, Marcel Labelle, Joe Burns, Charlie Martinu and Sam Budzak.

Lead

Lead welder, Jim Smith, at the Copper Cliff copper refinery, puts the finishing touches on one of the newly installed lead linings.



Get the lead in! No we haven't made a typographical error, we're merely trying to inform you about a new development in the Copper Cliff copper refinery.

The lead we're talking about is used to line tanks at the copper refinery's tankhouse. But we're getting ahead of our story . . . let's start at the beginning.

As part of long-term planned maintenance, the concrete, lead-lined tanks at the copper refinery's tankhouse have to be replaced approximately every 15 years. In the past, this used to be a tedious, time-consuming process involving hundreds of individual concrete slabs because each tank had to be assembled separately. This is not the case any more.

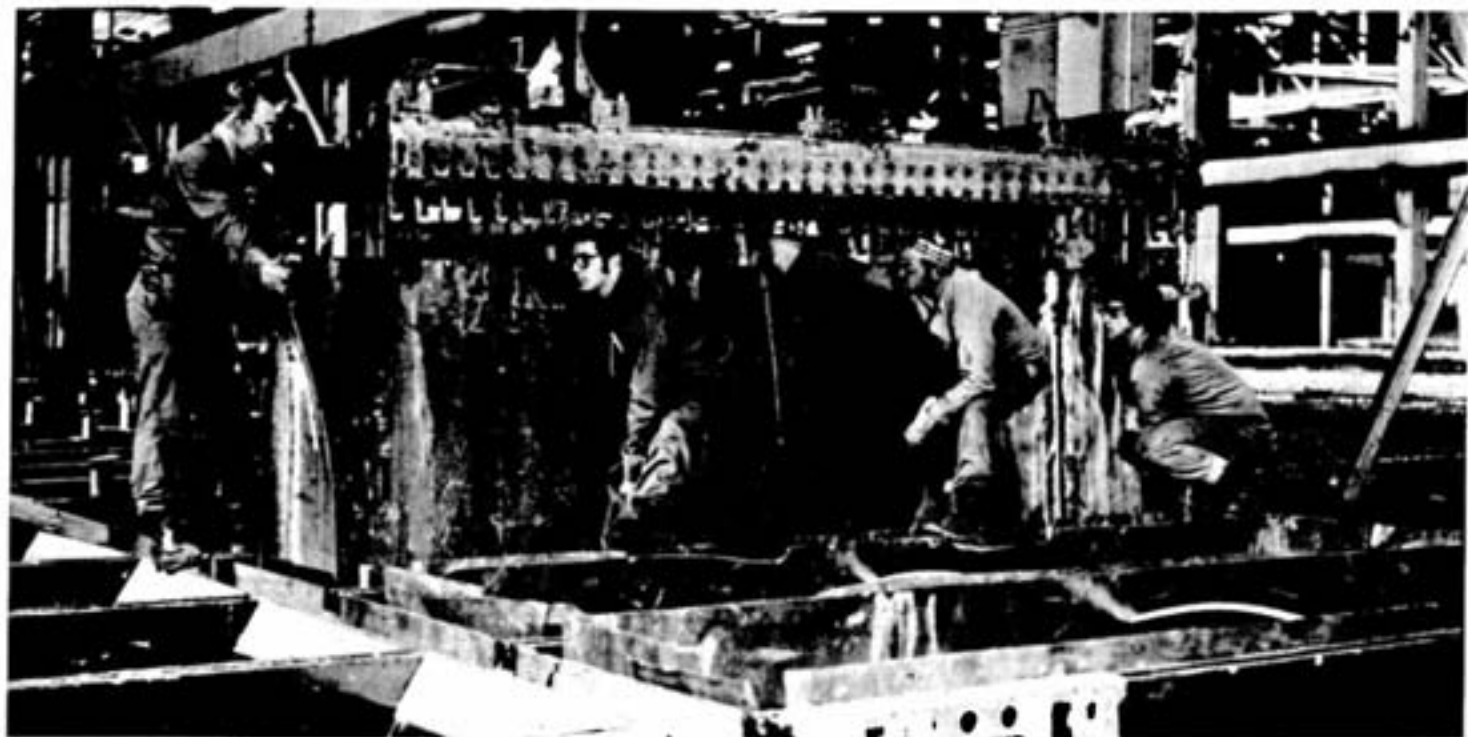
The concrete tanks are now prefabricated to Inco's specifications by a private contractor as complete units.

When shipped to the tankhouse, they're simply lowered into place as intact units and bolted together.

After the tanks are in place, they must then be lined with lead, used because of its resistance to corrosion and its ease of maintenance. The tanks we're speaking about hold electrolyte and copper anodes that produce pure electrolytic copper cathodes.

The lead arrives, in this case from Montreal, in rolls just like aluminium foil or wax paper. The only difference is that the corners of each sheet have been cut out so the lead, when bent into shape, will form a box with no extra cutting needed.

The rolled lead is hoisted to a wooden platform that's hinged on three sides. It's rolled out, much as you would roll out



Lowering one half of the lead lining into the concrete shell are, from left, Joe Burns, John Lemoine, Ronnie Reneaud and George May. When the two halves are positioned correctly, they are straightened into final alignment and the seams welded.

30 tons of it installed during recent copper refinery retrofit

a carpet on a floor. After this is done, the sheet is "dressed", or made to look its best.

A six-man crew using wooden mallets performs the dressing operation. They pound out all the surface irregularities until the sheet is perfectly flat. When this is completed, and the lead is in the correct position, the wooden sides are bent up creating a box with three upright sides. It takes two such units to line a complete tank.

Each half box is spot welded and lowered into the waiting concrete tank. When both halves are in the tank, they're again "dressed", using wooden mallets before the final lead welding.

Lead welding is an exacting art requiring a minimum of four years' apprenticeship to learn the trade.

Because lead is such a soft metal and has a low melting point, a hot flame is not required to melt it. A small torch, fed with hydrogen and low pressure air, produces a very gentle flame with almost no light given off. It can't be compared to the much brighter and higher pressure flame from an oxy-acetylene torch.

The seams in the lead-lined tank are filled with molten lead produced from melting lead solder strips. They resemble candle wax as they drip from the solder into the gaps between the two pieces of lead.

Try pouring candle wax from a lighted candle into cracks and you'll get some idea of what it's like working with lead.

Under the expert hand of a lead welder, the interior of a completed tank is made water tight and looks like one continuous piece of lead from top to bottom.

When the lead linings are completed in each tank, the electrolyte feeder lines are connected and the copper anodes and cathodes are lowered into position. It is only after all this that the section can finally be brought on stream.

Eventually, the entire tankhouse is expected to be replaced with the new concrete tanks, but it's a slow process and, because of this, is only planned at certain well-spaced intervals so that production is not adversely affected.

The maintenance department at the tankhouse takes just six weeks from start to finish to complete the job. Not bad, considering there are 38 tanks in each section requiring the shaping and welding of 1,600 pounds of lead. That's 60,800 pounds of lead — hence the opening remark — get the lead in!

Sudbury and Shebandowan

This month's suggestion plan action resulted in 49 men receiving 57 awards for a total of \$2,285 in bonus money. This month marks the first time that Inco's Shebandowan complex has been represented, so "welcome aboard, Shebandowan". Let's hear a lot more from you in the future.

It just so happens that Shebandowan's first winner picked up the top award this month. A cool \$370 went to **Robert LaHaye** for devising a method to drain water from the sump in the sand plant to the number two belt tunnel.

Klemens Rothensee at Garson mine collected \$300 for seeing the need for metal clips used in bracing posts under stringers.

At the Copper Cliff mill, **George Rayner** pocketed \$240 for devising a better method of handling nickel slimes.

Percy Henderson, Clarabelle mill, won \$70 for his idea to clean the baghouse with water pressure.

Jim Michlouski and **Roderick Furchner**, Coleman mine, combined for a \$55 award. They suggested that L.H.D. machine sleeves be fabricated at the mine.

Victor Collin, Copper Cliff South mine, picked up two separate bonuses. He earned \$50 for his idea to build a box around the slack rope device, and an additional \$25 for seeing the need for extension rods on sump pump valves. At the Clarabelle mill, **Ellseo Curridor** was a busy man as he picked up four separate awards — \$50 for designing a method to use an impact wrench to thread U-bolts, \$50 for designing a different method to hang skirting on the crusher discharge feed box, \$40 for suggesting a wire to lock nuts on track screens, and \$25 for proposing a stand at the crusher feed box.

At the Froid-Stobie mill, **Frank Chirka** pocketed \$40 for proposing stainless steel shafts on Denver cells.

Collecting \$35 was **Robert Steacy**, Clarabelle mill. He redesigned the run-off lip on Denver cells. As an added bonus, he won \$25 for suggesting a separate alarm on the XRF analyzer.

Our lone \$30 winner was **Roland Cormier**, Clarabelle mill. He collected his money for proposing that the tipple feeder cables be relocated.

At the \$25 mark we have 12 awards —

Rene Legault and **Ron Sinclair** joined forces at Coleman mine. They proposed that level gauges be installed on fuel tanks. At Shebandowan, **Leonard Allary** suggested modifications to jackleg drills.

Denis Bodson, Froid-Stobie mill, suggested adding sheeting to guard rails around hoist wells. **Henry Burton**, Coleman mine, saw the need to install kick plates around hoist rope holes. **Angelo Ceccon** suggested relocating the pipe trestle stairs at the Clarabelle mill. At Coleman mine, **John Chivers** proposed that lights be installed behind number one and number two filters and that the filter valve be relocated. **Clark Cordeau**, Clarabelle mill, proposed that the feed chute inspection door be relocated, while **Yvan Forques**, Creighton mine, devised a square adapter on copper tubes to ease their removal. **Ken Hortness**, Clarabelle mill, saw the need for emergency lighting at the head tank area and also suggested relocating the discharge chute inspection door. He picked up \$15 and \$25 respectively.

Further \$25 winners were **Douglas Howard** and **James Hughes**, Clarabelle mill. Doug suggested access ladders be installed to the magnets, while James saw the need for a plate under electric motors. **Bryan Kennedy**, Clarabelle mill, picked up three awards. He pocketed \$25 for suggesting that bad order tags be placed on flotation cells' panel buttons in the control room when they are being repaired. He won \$20 for his idea to relocate the intercom speaker and a further \$15 for instituting a maintenance programme for telephone boxes. **Marc Leblanc**, Copper Cliff mill, collected \$25 for proposing that a platform be built to fill depressions in the mill floor. **Vladimir Malec**, Coleman mine, added two \$25 bonuses to his pocket this month. He suggested modifications to gas line connections on propane burners and saw the need for a timer to operate the hypochlorinator mixer.

Clarence McCann, Clarabelle mill, pocketed three \$25 cheques. He suggested a hand crank on the air

Shebandowan cla



\$370 Robert LaHaye
Shebandowan



\$300 Klemens Rothensee
Garson mine

conditioner filter, a sign to warn of a pedestrian area, and drop pipe hanger bolts.

Other \$25 winners were **William McDonald**, Garson mine, and **Garry McLean**, Frood-Stobie mill. William devised a method of securing ladders used to inspect skips, while Garry saw the need to install lights at transfer chutes. At Creighton mine **Sylvio Roy** suggested that a catwalk be installed at the Ducan scrubber, while **Rodolphe Sabourin**, Clarabelle mill, proposed that door numbers be painted on the walls to aid identification. Our last \$25 winner is from Shebandowan. **Werner Stoll** suggested that a ventilation fan be installed in the shop.

There were six \$20 awards. **Nell Blair**, Garson mine, won a safety award for proposing a sign to indicate the location of fire extinguishers. **Lyford Bryenton**, Clarabelle mill, suggested that cable should be fed from the back of the rodding machine, while **Morris Jolly**, Copper Cliff South mine, saw the need to transport

clean rags in plastic bags. **Aza Lalonde**, Copper Cliff South mine, picked up \$20 for suggesting that clean rags be transported in plastic lined containers. **Denis McLay**, Stobie mine, devised a better method of fastening flags on emergency stop switches, while **Cecil Rowe**, Coleman mine, proposed raising the walkway at the entrance to the dry.

At the \$15 mark is **Denis Beaulieu**, Creighton mine. He suggested that plastic funnels be used instead of steel funnels. **Stan Bidochka** at the Clarabelle mill saw the need for an automatic switch to turn on the crane light, while **Ross Frood**, Creighton mine, proposed that a door be installed leading from the rigger shop to the hoist room. **Kinahan Hill** and **Len Knowlan** at Garson mine had two separate suggestions. Kinahan saw the need to stock brightly coloured gloves at the warehouse, while Len saw the practicality of lining drill bit boxes with rubber. **John Sloboda** at the Clarabelle mill proposed a safety pull switch for coarse ore belts, while **Roger St. Jean** at Creighton mine suggested a heated box to store

welding rods. **Dan Swezey** and **Rod Thompson** at the Clarabelle mill won two separate awards. Dan won his for seeing the need to install lights at the feeders and Rod won his for suggesting screens on the apron feeder discharges.

Port Colborne

At the Port Colborne nickel refinery, **Tony Borg** received \$25 for suggesting the installation of purge valves on the fuel lines leading to the power house boiler. **Paul Silpak** also picked up \$25 for his idea to replace the inner titanium sleeve on the Durco pumps with cold rolled steel.

Bill Provencal cashed in on \$20 for designing a suitable hook to guide the plunger into the inoculator mast hole.

Gil Brazeau, **Al Kerekes** and **Hector Ranger** all pocketed \$15 bonuses. Gil suggested a safety railing at the ball mill in the cobalt plant, Al found an improved method of unloading drums in the warehouse and Hector designed a different fly cutter for the milling machine.

Wins this month's top award



\$240

George Rayner
Copper Cliff mill



A "get out and get under" scene re-enacted during the Historical Automobile Society's Nickel Region display at the New Sudbury Shopping Centre. From left, in the car, members are Rick Morrison, Copper Cliff smelter; Connie Seguin; Terry Heale, copper refinery; Bill Dyck, mines exploration; Ed Miller, Copper Cliff mill, and Garson mine mechanic, Bill Charsley, cranking his '27 Dodge sedan.



Many miles

Some of us live in the past, others in the present. Then . . . there are collectors and restorers of antique automobiles! They've found ways to enjoy some of the glories of the past in the present.

Irene Ginson, regional director of the Historical Automobile Society, and her husband, Eldon, the society's national social director and a Garson mine stope leader, long ago discovered the delights of restoring and touring antique cars. In fact, there are quite a few Inco employees involved in this interesting pastime.

Bill Dyck, senior geologist for the mines exploration department, is president of the club's Nickel region, and owns a '55 Chevy sedan, a '37 Oldsmobile coach and a '48 Oldsmobile sedan. Terry Heale, maintenance foreman at the

Copper Cliff copper refinery, is vice-president for the Nickel region and is at present restoring a '30 Willy's Overland sedan. At the Copper Cliff mill, maintenance mechanic, Ed Miller, owns a '49 Dodge coupe and has a '28 Ford sedan under restoration. Garson mine garage mechanic, Bill Charsley, has a '27 Dodge, a '35 Ford coupe, and is busy with a Model T. Rick Morrison, senior process evaluator at Copper Cliff, owns a '30 Ford and is up to his neck restoring a wondrous '26 Pierce Arrow.

Thus far we've named some of the guys. Now you might wonder how a gal got into the act. For Eldon Ginson's Irene, the fun began when she tired of hauling Eldon out from under his old car. She got under too, and on Father's Day

in 1966, presented Eldon with a '29 Packard.

Things haven't been the same since . . . not for Eldon nor the Historical Automobile Society. Who would have thought that Irene's "if you can't beat 'em join 'em" attitude would bring her to the lofty realms of the executive of this worthy society? That's a good indication that you car-loving guys had better hold onto your wrenches. There's almost nothing a girl can't do, given a chance!

Incidentally, do you think the main object of this hobby is to find an old car, fix it and sell it for a lot of money?

Correction. Restoring old cars and belonging to the Historical Automobile Society means to be totally involved with recreating a piece of history. Not only



Gwen Miller and Ethel Charsley decided that the thermometer on the rad of a '28 Whippet sedan was neither Celsius nor Fahrenheit. It's just an indicator that gives fair warning before the steam begins to blow.



Wife of Garson mine slope leader, Eldon Ginson, Irene shattered tradition when she was elected as regional director of the Historical Automobile Society.

in-between



the car itself is faithfully reconstructed but a study of dress, furnishings and pastimes that fit with a car's make and year are part of the appreciation of the hobby. To top things off, antique car owners love nothing better than to plan exciting tours, parades and camp-outs to show off their cars, and dress up in old-time costumes to bring back the atmosphere of the past.

In the club's bi-monthly magazine, "The Canadian Klaxon", the membership reports its meets and tours, camping excursions, races and flea-markets. You'll also find tips on recreating period costumes, where and how to find spare parts for your old car and some vivid reporting of what happened on the last tour.

Descriptions of the annual summer

tours to northern Muskoka and Manitoulin Island make you wonder if you could ever really have any fun without owning an antique car. Just getting to one of these meets in your vintage Hupmobile presents any number of hilarious possibilities. In some cases, the question is "will you get there at all?" Walking? Pushing? Or putt-putting along at 20 miles per hour.

Usually, the cars tour together with a police escort. The slower cars, '01 to '27, travel at an average speed of 20 miles an hour, the later models from '28 to the early '40's, zoom along at 35 to 40 miles an hour. Model T's need a boost getting up hills (the gas has a hard time reaching the motor) and then, most old cars suffer from flat tires in epidemic proportions. The most dour "at the roadside"

spectator would be unable to suppress a warm smile while watching this parade of ladies and gents in old-time costumes struggling along in their zany cars.

At the meets, camping gear is unloaded and the days are filled with competitions, auctions, spare part trading and the nuttiest races ever. The evenings are whiled away 'round camp fires, singing old-time songs with everyone replete on yummy food prepared a la grandmother — pot pies made over an open fire with "pot pie" irons. Anyone hungry? Hmmmmmmmm.

The next event? International Parade of History to be held in Sudbury on July 12, with an exciting parade of vintage vehicles winding through the streets of Sudbury, climaxed by a huge "Old Time Dance" in the Sudbury Arena.



Graham Laporte, with his octave band analyzer, monitors the sound level of a compressor at the Copper Cliff nickel refinery.

You're alone in the bush on a quiet, windless day. The only sound you hear is the rustle of leaves beneath your feet as you walk along.

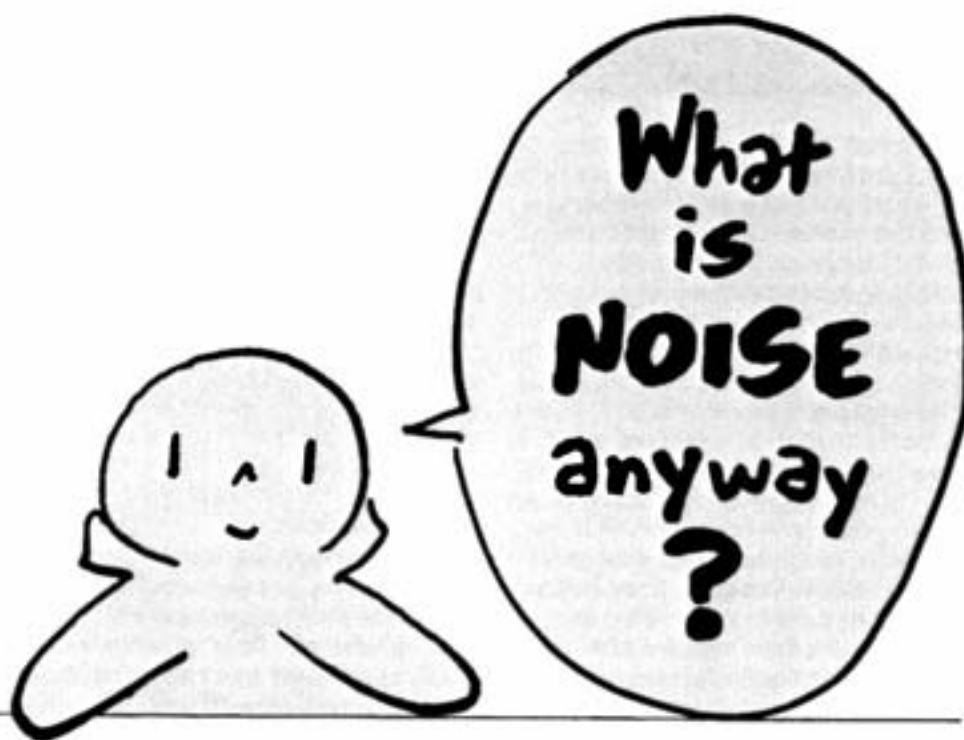
Now you're at an airport and hear the whine of jet engines. The intensity of the sound rises as the moment for take-off arrives. The sound is powerful and overwhelming as it engulfs you. You can't hear anything else, and you can feel it as it presses painfully on your unprotected ears.

The above examples illustrate the incredible range of sound that can affect the human ear, and also shows that, in some situations, protective devices must be worn if you can't isolate yourself from the source of the noise.

Inco is concerned about your hearing, not just on the job but off the job as well. Our safety department has an extensive sound monitoring programme in operation to ensure that all areas with excessive noise levels are properly posted and designated. When a problem area is encountered by the safety department's monitoring programme people, they call in Inco's engineering department to help solve it. Engineering then calls in environmental control, specifically the air quality section, to help with this problem.

It's here that Graham Laporte, a senior environmental analyst with the environmental control department, steps into the picture. He, along with others in the department, assists engineering in abatement design on requests received for noise control. The air quality section also assists in developing sound level specifications for new plants and new equipment in order to meet the requirements of the "Noise Control and Hearing Protection Code." This code came into effect under the Ontario Mining Act in July of 1974 and is administered by the Ministry of Natural Resources.

When an area is suspected of having a noise problem, Graham uses a sound level meter or an octave band analyzer to do a sound survey. If the area to be



measured is in a plant, he gets a copy of the floor plans and plots differing sound intensities on it. In this way, he gets a pictorial record of just where the sound is coming from.

Once the source, or sources, of noise are located, corrective measures are taken. The sound itself is isolated by enclosing the offending piece of equipment or by interrupting the path that the sound takes to get to people. If that's not possible, the zone is designated as a hearing protection area and people working there must wear hearing protection.

Now all of this seems pretty straightforward so far. But how is the sound level determined in an under-

ground environment where the equipment is always on the move? The only way to determine the noise level is to either follow the individual around with a microphone or attach a microphone to the person, which is exactly what's done.

Since it's virtually impossible to insulate the noise source, the only alternative is to make sure that individuals exposed to high noise levels wear adequate hearing protection.

What we often don't realize is that continuing exposure to high noise levels can damage our hearing if we don't take measures to protect it. This damage can occur at work, or at home, and once it occurs there is no way that it can be

repaired. Since noise is part of our modern civilization, we may learn to accept it and at the same time take our hearing for granted as something that remains in good shape throughout our lives without needing much attention.

Prolonged exposure to high noise levels may take years before it actually affects us. This happens because the damage begins in the higher frequency range of our hearing capability where we don't miss the loss, but gradually works down to the speech levels. We may think that we're getting used to the noise when, in reality, we're growing deaf.

So remember to take care of your hearing — it can't be replaced!

Pat Dinan, safety foreman at Copper Cliff South mine, measures the noise level of a load-haul-dump machine with a portable sound level meter. Connie Dufour, L.H.D. operator, keeps a close eye on the proceedings.



Long tables sagged wearily under the burden of ageing and defunct cash registers, neglected linens and a hodgepodge of matched and mis-matched crockery.

With breathing room only, the auction at Sudbury's Nickel Range Hotel got under way. Sudburians had come out in full force one last time to fill sadly neglected halls with a jumble of voice and laughter. For some it was a sad affair, remembering parents and grandparents who had known the Nickel Range as "the best hotel between Winnipeg and Toronto". They had measured their mile-stones — weddings, christenings, and every significant happening in their lives — at the Nickel Range Hotel. Also present at the auction were eager bargain hunters finding precious stained-glass windows and cutlery at rock-bottom prices. But for the most part, Sudburians had come to claim a souvenir, a memento of days gone by.

Yes, the grand old dame, the Nickel Range, heaved a sigh and was laid to rest. Financial problems, competition from newer hotels, and the need for parking space finally did her in. Mundane problems, it seems . . .

Once, her foyer and bars echoed with the boisterous laughter of lumberjacks and prospectors. Her ballroom knew the rustle of silk; muted and genteel small-talk accompanied strains from the orchestra. The well-to-do wined and dined there. The bankrupt and lonely drowned their miseries in her arms. The management extended credit. For the

Under

most part loans were repaid . . . sometimes a year or so later when a bedraggled prospector or wood-cutter reappeared with fresh money.

The Rouleau family, former owners of the hotel, can tell you much about those days. They were the days when a man did his best to keep his word . . . even if he were a little "tipsy"; when a firm hand-shake was as good as a written contract. Days, when a young bell-hop of sixteen, Al Rouleau, could grow up to buy a hotel like the Nickel Range with no money down — long and faithful services the only prerequisites. Al could tell you about it.

Al affectionately called the Nickel Range "a grand lady!" That she was.

She looks peaceful on the outside . . .





The original owner of the Nickel Range Hotel, D. M. Morin.

the hammer

Her opening was meticulously described by the Sudbury Journal of 1915, which spoke of her "Italian Renaissance architecture", "Caen stone cornices in the Doric treatment", and "dining room in the Ionic style", summing things up with "the building is throughout a magnificent structure". Her rates? The enormous sums of \$1.50 to \$2.00 a day.

The Nickel Range was a grand and later cynical lady, who had seen it all. Her name captured the attention of many. She turned up in Canadian authors Stephen Leacock and Hugh Garner's books. Stephen Leacock, our much acclaimed humorist, wrote stories from her rooms. Hugh Garner found her name enticing and used her as a setting in one

of his novels. Her name had always attracted attention. The original owner, D. M. Morin, finding riches through mining and minerals, named the hotel "Nickel Range", prophetically inspired by the promise of the Sudbury district's future.

Certainly Sudbury grew and prospered, but not always the Nickel Range Hotel. During the prohibition era, her bars were closed, naturally. But she was still packed with men who had secret sources of the "fiery liquid". The crowds were as "jolly" as ever, but the hotel suffered financially. Jean Paul, one of Al Rouleau's sons and one of the later owners, tells of such a secret source.

It seems there was a sudden increase

in the number of distant cousins dying out east and being shipped to Sudbury for a family funeral. As it turned out, the coffin of said cousin was filled to the hilt with bootleg whiskey . . . and after the shedding of "crocodile tears" at Sudbury's CPR station, said coffin turned into an instant bar.

You will also hear tell of the day King George VI and Queen Elizabeth visited Sudbury in 1939. The natives were so enthusiastic, every glass at the Nickel Range bar was smashed against the wall. To temper this tale of destruction, Jean Paul Rouleau mentioned, as an afterthought, that most of the broken glasses were paid for, and that the management looked on benevolently, if not encouragingly.

In the '60's, the hotel had a fine bar and a good kitchen, but plans for renovation came a little late in the day. Competition, changes in clientele, and debts precluded building a planned roof garden with dancing and dining facilities. It was too late.

"They're going to have a hell of a time pulling her down", Jean Paul says with grim satisfaction. He ought to know, having attempted a few minor changes to some of the rooms. "There's a nail to every square inch. She's built like a fortress!"

Well . . . Good-bye Nickel Range. We'll miss you!

... but there's standing room only inside.





news maker

The eyes and ears for "the triangle" coverage of the Port Colborne nickel refinery, public affairs co-ordinator and "the triangle" associate editor, Les Lewis, visited the editorial offices at Copper Cliff recently. Seldom seen without a camera or two hanging around his neck, Les, left, was soon deeply engrossed in the latest "things photographic" with Copper Cliff public affairs writer-photographer, Peter vom Scheidt, and probably didn't realize his picture was being taken until the flash disturbed his concentrated train of thought. A native of Port Colborne, and a man who would rather golf than eat, Les joined International Nickel at the Port in 1937 and worked his way through the shearing, personnel and safety departments before his 1971 appointment to public affairs. He and his wife, Ruby, have two grown-up sons, Bill and Bob.

some "Port" visitors

Sounds of Port Colborne were recently welcomed to the Sudbury area with the 45-member Lockerby Composite School band playing host to Port Colborne High School musicians, in the second phase of a student band exchange programme — Lockerby students having visited the Port in April. Members of both concert bands went on an Inco tour encompassing Copper Cliff North mine, Clarabelle mill, and the Copper Cliff smelter. Seen at the Copper Cliff Curling Club prior to donning hard hats for the tour are, from left, David Williams, Lockerby Composite School concert band director and Mark Fairchild, band director, Port Colborne High School concert band, with five of his 84-member band — John Lindak, Nino DeLuca, Rob Finnegan, Judy Rossman, and Terry Goss.

music makers





One up for wildlife

A new twist to the old Bob & Carol & Ted & Alice routine . . . Inco's own Flora & Fauna & Tom & Wayne.

Actually, "flora" and "fauna" are biological terms for "vegetation" and "wildlife", but Tom and Wayne are very real people — Tom Peters, Inco agriculturist, and Wayne Wilson, a 1975 wildlife management major and honours biology graduate of the University of Guelph. Together, they've got big plans for Inco's tailings disposal area.

The area in question takes in about 7,000 acres, inclusive of present and future Inco tailings areas and adjacent natural ground west of Sudbury. The whole idea, according to Wayne, is to "attain a self-sustaining productive level so that the designated area will be self-supporting and in continual use."

Wayne's position is a co-operative one between the company and the Ministry of Natural Resources; while actually an Inco employee, he'll be drawing on the Ministry for guidance and administration.

Originally, Tom had considered turning the area into a Crown Game Reserve, but it meant no hunting at any time . . . and what happens when an overabundance of, say, ducks invades the area and, because of the heavy population, creates an imbalance in the vegetation? "As a wildlife management area, there will be the option of a hunting season if and when necessary".

As Wayne put it, the whole thing boils down to "having an area where the primary purpose will be for the management of wildlife on that area", and further defined management as "geared to maintaining a productive wildlife population".

Concurrent with the planned introduction of wildlife will be the development of appropriate vegetation to support the

plan to be decided on; in other words, manipulate the vegetation in order to encourage the desired species of animals. For example, should the area be geared to birds — and it probably will be — a logging operation would maintain a productive forest which, in turn, would provide an ideal habitat.

Tom pointed out that "right now, the tailings area actually looks like a big open field, and waterfowl are occupying the area as if it were a normal forest. Hawks are here, sparrows, snowshoe rabbits, mice, muskrat, fox, there's the odd bear and moose, and we've picked up deer tracks . . . multi-wildlife population and multi-use, that's the aim . . . tours within the foreseeable future, which brings in educational overtones . . . there's lots of potential".

The delicate nature of the plan calls, ultimately, for controlled access, in order

to avoid disturbances at inopportune times; for example, when the ducks are nesting. Because the ponds are shallow and freeze right to the bottom, fish likely won't be included in the overall scheme of things.

"It's a first for the mining industry in Canada", says Tom. "We've been working on it for over two years and we're both — Inco and the Ministry — in agreement with the purpose". Wayne adds that "it's unusual to develop this kind of thing on a private firm's land".

Wayne'll be spending most of the summer in the field, identifying the species of wildlife that should be encouraged into the area.

Can't help but note that on his first visit to the designated area, Wayne was greeted by a flock of Canada geese — surely an auspicious beginning and a good omen of even better things to come!

Inco agriculturist, Tom Peters, left, and honours biology graduate, Wayne Wilson, discuss development of the designated wildlife management area, encompassing some 7,000 acres of present and future Inco tailings areas and adjacent natural grounds west of Sudbury.



SO₂ – Our Hero?



At Laurentian University, Dr. Malcolm Bell, left, manager of process technology, presented an Inco cheque for \$15,000 to professor of chemistry, Dr. Wallace Pasika.

In a roundabout way, Inco may have something to do with extending the world's oil reserves.

And all because International Nickel is lending financial support to a research project of the chemistry department at Laurentian University.

During the next two years, Inco will contribute \$30,000 towards basic research by Dr. Wallace Pasika, professor of chemistry at Laurentian, and co-workers, into making polymers that contain sulphur dioxide (SO₂) in some form or another.

Examples of polymeric substances are: polystyrene, from which styrofoam cups and insulating sheets for houses are

made; polyethylene, from which plastic food savers for the kitchen are made; and the polyesters of the textile industry. Most of these polymers have their source in the petro-chemical field and, since millions of tons of polymers are produced commercially each year, a considerable drain is created on already limited oil reserves.

In his research, Dr. Pasika will examine the possibility that polymers may also have their source in a combination of chemicals from the oil industry and the mining and smelting industry.

Ultimately, Dr. Pasika's aim would be to load a polymeric substance with

something that has limited use, specifically sulphur dioxide, and obtain something very useful.

Thus, a potential outlet might be created for Inco's SO₂.

And, by combining a small amount of chemical from the oil industry with a small amount from the mining industry, the material required from the oil industry would be reduced and oil reserves extended.

If all of this sounds complicated, it's because it is.

Even Dr. Pasika, who worked in the area of polymer chemistry in England following his graduation from universities in Manitoba and Alberta, and then in Texas prior to his association with Laurentian four years ago, admits the exploratory research project will be painstaking.

A polymer is a unique chain, comprised of many small molecules which are chemically linked. It's the polymer's chain-like construction and resulting "stringiness" that makes it so useful.

Polymers can be made from a large variety of substances, but the substances must be chemically reactive and lend themselves to the molecular building process. There's the rub.

In Dr. Pasika's exploration, he'll be required to study sulphur dioxide in conjunction with many other substances. When the chemistry professor and his

Inco sponsors research aimed at proving to be a vital energy source

team of post-doctoral fellows and graduate students begin their project this summer, they'll be concerned with understanding the basics of SO_2 — how it reacts, with what and under what conditions. In other words, an all-inclusive study must be conducted on the chemical reactivity of the substance.

At the present time, there's limited information available on the use of SO_2 in polymers. According to Dr. Pasika, there are virtually no SO_2 polymers relative to other types of commercial polymers.

Once the research has progressed to the stage where Dr. Pasika and his fellow researchers are able to make SO_2 polymers, they'll begin a study of the polymers' physical properties, determining factors such as strength and durability.

Says Dr. Pasika: "You can never tell what's going to happen in a laboratory. Discoveries might be made which can open up entirely new avenues." The expert on polymer chemistry notes that if a commercially useful polymer, using SO_2 , is developed eventually, the amounts of sulphur dioxide used would be "fantastic".

The \$30,000 research grant, the largest yet of any of Inco's contributions to works of this nature, will provide the sole support for the undertaking. The materialization of the project is the result of discussions over a one-and-a-half year



Dr. Wallace Pasika, professor of chemistry at Laurentian University, holds a viscometer that is used for obtaining molecular weights of polymers.

period between Dr. Pasika and personnel from Inco's process technology department, including manager, Dr. Malcolm Bell.

Throughout the endeavour, Laurentian's research team will maintain a close liaison with Inco. Dr. Bell has offered Inco laboratory services which may be of use in the research. And of course, Laurentian will obtain all of its SO_2 , in liquid form, from Inco.

Says the professor: "About 60 per cent of chemical activity is involved with polymers. Polymer chemistry is extremely important." He cites the textile, paint and packaging industries as just a few

of the areas in which polymer chemistry is involved and stresses its important contribution to our well-being.

In the United States, there's a great deal of polymer activity and a lot of money is directed towards research there, both within the industries involved and in universities and specific research institutions. In Canada, however, relatively little research is conducted and money is not as readily available as in the States.

Dr. Pasika feels, therefore, that "Inco deserves to be congratulated for its initiative in supporting the research project", and concludes, "I'm happy that it is being done here and not elsewhere."



Making a clean sweep in Copper Cliff's Nickel Park; Gino Naccarato of Inco's agricultural department, with students from grade six at Copper Cliff Public School. Students are, from left, Janet McQuarrie, Kevin Strong, Danny Osborne, Jack Taus, Robert Newell, Paul Ceccarelli, and Terry Campagna.

Inco agriculturalist, Alex Gray, throws gum wrappers and orange peels on classroom floors at the Copper Cliff Public School! But there's a method in his madness.

Alex is trying to illustrate to students the effect of litter on the natural environment. He told them, "you don't like it when I litter on your property, and I don't like it when you litter on my property, which is the park and recreation areas in Copper Cliff."

He explained that it takes a lot of hard work to keep the park and recreational facilities in good shape. They don't just stay that way by themselves. He noted that some students get into the habit of littering, and the whole town suffers as a result. If everybody does their part, then the whole town will benefit.

Following his talk, to further illustrate his point that hard work is required to keep everything looking good, Alex presents the students with rakes and brooms and then leads them to certain areas of the town for a little cleaning up.

In the park

Colour us green

Ellen Heale, Inco agricultural department employee, pinned a "green leaf" emblem on Inco pensioner "Sparkie" Harry when he visited Inco's display.

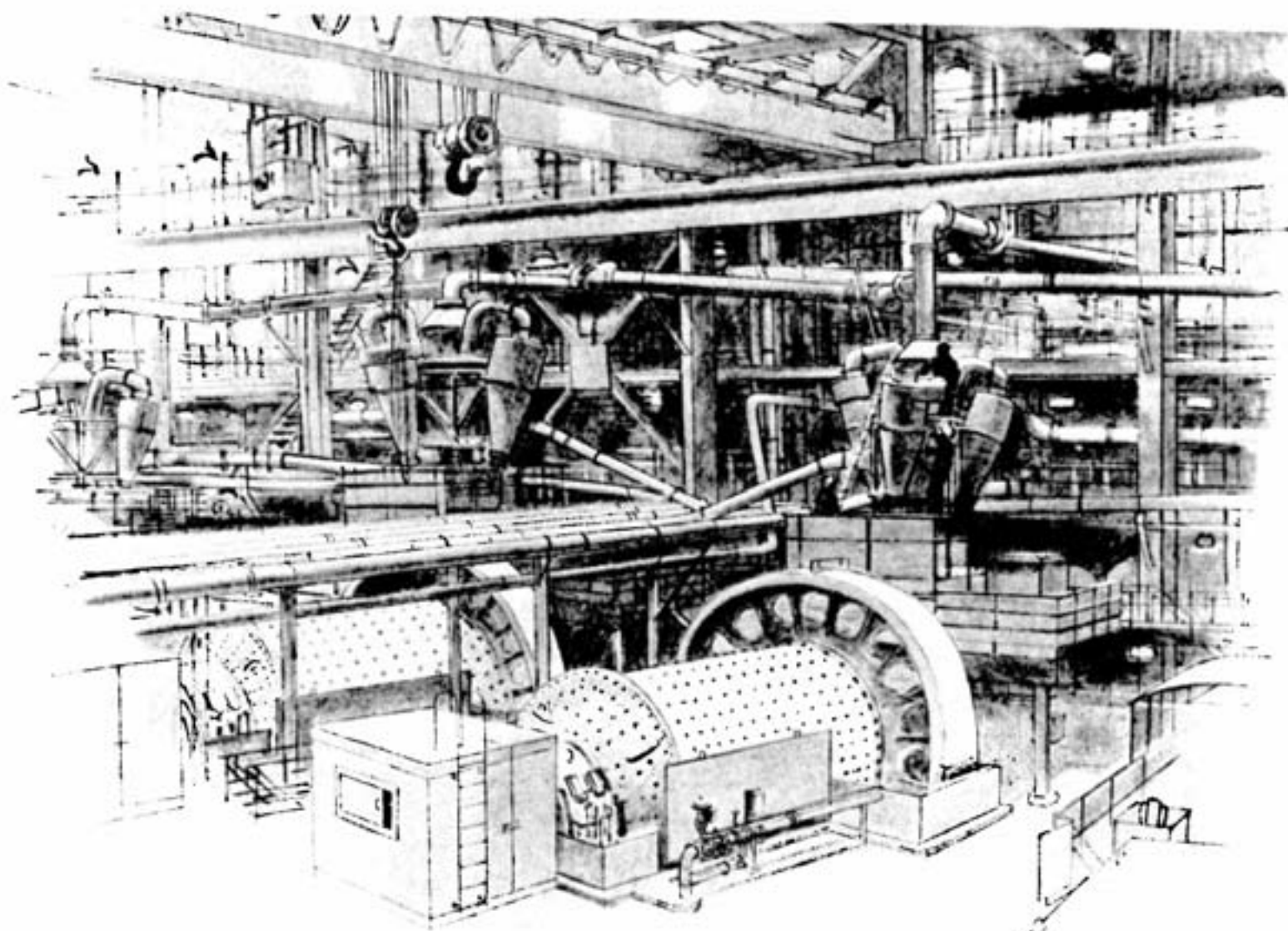
Inco pensioner, Ted Fosten and his circa 1900 antique "Montan" lawn mower. Ted is regional director of the Ontario Horticultural Society.



In the city

As winter-weary Sudburians tramped doggedly through Sudbury's City Centre on May Day morning, they were greeted by the fragrance and colours of a vast array of flowers, shrubs and trees. Could it be spring? What a welcome sight! Technically, spring arrived some time ago, but, as we northerners know, it doesn't mean a thing until you can see, smell and touch the evidence.

To induce enthusiasm for resurrecting our garden tools, Inco's agricultural department constructed an attractive display. It was part of the Regional Government Technical Tree Planting Committee's "Colour it Green" display and information forum held May 1, 2, and 3. To assist and advise those with a not-so-green thumb, and so induce a reluctant but potential gardener here and there, the glorious display of flowers and plants demonstrated what can be done — once you know how.



41 1753

Grinding Mills - Clearville Mill. Clearville, Pa.



Of the 613 new members who joined Inco's Quarter Century Club during induction dinners held May 26, 27 and 28, this month's "triangle" logo writer Fred Mansfield, claims the distinction of being the youngest.

At a sprightly 41 years of age, you could call him a venerable gentleman of much experience. Fred has worked in many facets of the Copper Cliff smelting and refining processes in the last 25 years. At present, he's a plate worker in the Copper Cliff plate shop and is the Copper Cliff fire chief at Sudbury's Regional fire station number eight.

Originally from Bridgewater, Nova Scotia, Fred left the salty air of the maritimes at an early age. He started work with International Nickel on May 15, 1950 and since then has become one of Copper Cliff's truest adopted sons.

Fred's wife, Sudbury-born Aileen, two daughters, Cathy, 19, and Diane, 17, and a son, David, 11, complete the picture of Fred's 25 years with Inco. A spirited, sports-minded and happy crew, with Fred Mansfield at the helm.

Fred Mansfield

Logo writer and youngest
in Q.C.C. class of '75



Shirley Holder

Look out hockey! Here comes ringette —

and Shirley Holder, Northern
Ontario ambassador for one
of the newest sports in Canada

Though it may never replace hockey as this nation's number one sport, ringette is rapidly becoming, to little girls and big ones, what hockey is to little boys and big ones — and Shirley Holder is one of the most knowledgeable people around when it comes to the game.

Shirley, whose hubby, Ken, is a senior production clerk at the Copper Cliff smelter, was appointed one of three referees-in-chief in the province in 1974 by the Ontario Ringette Association. And this year, her "petites" and "twens" brought medals home to Sudbury from the first provincial ringette championship tournament in Toronto.

So what's all this rigmarole about "petites" and "twens" and a sport named ringette?

Predominantly played by girls, ringette officially became a sport, as opposed to a pastime, in June of 1974. Recognition by Ontario Sport was spurred mainly by this country's mushrooming interest in the game since its origination in 1963, and made ringette eligible for 80 per cent financial support by provincial grant.

According to Shirley, between 1,500 and 2,000 girls play ringette in this region, with more than 900 girls on 75 teams in Sudbury alone. "Petites," "twens," "belles" and "debs" are simply the various age categories into which the girls are divided for competition purposes.

This year, three Ridgcrest Playground teams represented the Sudbury Playground Ringette Association at the provincial level, after winning city competitions and emerging victors in the North Northwestern Ontario Regional playdowns.

In Toronto, against Etobicoke, Oshawa and Waterloo-Kitchener top regional teams, the Sudbury "belles" were

"Let's see now, the book says . . . " A ringette threesome ponder the rules. Left, Kim Bonas, "tween" goalie; Shirley Holder, ringette referee-in-chief for Northern Ontario, and Sandra Holder, "tween" forward.



defeated in semi-final play, but the "petites" earned a silver medal and the "tweens" brought home the gold.

As former president, past president and coach for the Sudbury association, Shirley can take a great deal of credit for the status of ringette in this area.

Now, as referee-in-chief for Northern Ontario, she's responsible for conducting clinics to teach and standardize officiating throughout the province. She also helped prepare an official's handbook for the sport.

Shirley is often called upon to oversee tournaments, where she responds, if necessary, to protests or claims of biased refereeing. And she referees her share of home playground games, most of which take place on outdoor rinks where her whistle tends to freeze in the dead of winter.

All of this involvement started innocently enough for the mother of three when, in 1966, she ventured to the neighbourhood playground to watch a

ringette game which husband Ken was coaching. Her next contact with the sport was as president of the Sudbury association.

That was the beginning of Shirley's love affair with a sport played with "broken" hockey sticks, a rubber deck tennis ring and a set of rules reminiscent of old girls' basketball rules and those of floor hockey. And all on ice.

Unlike hockey, the body contact aspect of ringette is underplayed. "It's a skating skill sport with emphasis on fun and safety," says Shirley.

Hailing from Timmins, Shirley's always been involved in sports, but maintains she's a born spectator. An avid fan of the Sudbury Wolves, she attends their games with standard gear of horn and bell and a recurrent frog in her throat, the result of enthusiastic cheering at ringette tournaments. The cheering is done, not as referee-in-chief, but as mother of Sandra, an 11-year-old "tween" and five-year veteran of the sport.

Other members of the Holder family are sons Bob, 17, and Bruce, 18, in the silver building at the Copper Cliff copper refinery.

With her family almost grown, Shirley is able to work year-round on her clinics and on the organizational details of ringette.

"I feel most of the work is needed right where I am, especially if ringette keeps on growing like it has been," says Shirley.

And it looks as though ringette is going to go far. In July, a Canadian federation — Ringette Canada — will come into being and the first Canadian championship tournament has already been scheduled for 1977.

Also, the United States, South Africa and Russia have expressed interest in the game.

Why, who knows? If the present momentum continues, Shirley may be referee-in-chief for the first Canada-Russia ringette series!

"Levack deserved it, and they won it. They played like champions from the first game to the last during their 21-game schedule."

Those were the words of Ken Zayette, Frood mine school stope instructor and president of the Sudbury Miners' Hockey League.

Pitted against Coleman, top team in the league for the last two years, Levack pulled all stops during the best-of-seven finals and clinched the championship series at the fifth game.

In order of standing behind Levack in the eight-team league were Garson, Coleman, Creighton, South mine, Frood, Stobie, with Strathcona as tail-end-Charlie.

The champs earned for themselves the Maurice Ayotte memorial trophy and the Frood-Stobie Athletic Association first-place trophy.

For the third year in a row, Coleman's

Ralph Prentiss peppered the goal successfully and, with 100 points out of 125, was the league's top scorer.

The most valuable player award went to South mine's Ed Walski, and awards for best goaltending went to a pair of Levack Don's — Don Stewart and Don Carlyle.

Stan Blanchard, Garson, was voted best defenseman, and the title of most gentlemanly player went to Coleman's Jim Barrett.

Referees Pat Soucy, Frood, and Bill Rowlands, Stobie, were on hand with the whistle throughout the long schedule and won the gratitude of all coaches and players involved.

Two other stalwarts who handled the behind-the-scenes organization with their usual efficiency were league vice-president, Connie Pilon, Frood, and league secretary-treasurer, Gerry Krumpschmidt, from Little Stobie.



With those ear-to-ear smiles, this is the Levack mine team that finished in top spot in the Sudbury Miners' Hockey League. In the front row, from left, are: Eldon Lavigne, Frank Szarko, Don Carlyle, Gilles Dufresne, captain Marcel St. Amour, Henry Blais and Joe Proulx. Back row: coach Earl Porteous, Gilles Tremblay, Gilles Brunet, Gary Smith, Bob Rivet, assistant captain Steve Szarko, assistant captain John Janakowski, Don Stewart, Tom McCourt and Al Nowoselsky. Unavailable at picture taking time were team members Jack Brisson and Glen Eady.

Levack S.M.H.L. Champs

Happy, happy, happy . . . that's the way it is for the Coniston Royal Canadian Legion branch 427 dart team.

The winner's circle has finally opened up and, for the first time ever, the Coniston team has taken first place in district competitions . . . quite an honour!

The delicate balance of the dart, combined with a sure eye and a steady arm, have all paid off for the Coniston team, consisting of Ron Boyd, captain and a driller on the 3000 level at Garson mine; Tom Taylor, welder with the mechanical department, Copper Cliff South mine; Roger Gervais, driller on the 3200 level at Garson mine; Tony Aitkens of the Canadian Armed Forces, and Moe Cataford from Falconbridge Nickel.

After taking the zone competition in Sudbury, and the district competition in Elliot Lake, the Coniston district champs went on to London for the provincial event. It must be admitted that our Coniston boys walked away empty-handed, but certainly not heavy-hearted; they'd had a great time, and they had the title of district champs.

Pat Riley, Royal Canadian Legion district "H" sports officer and a maintenance mechanic at the Copper Cliff smelter, MK building, was on hand to present the Labatt's award.



Presentation of the Labatt's award to the Royal Canadian Legion district "H" champs — Coniston, branch 427. From left — Moe Cataford, Ron Boyd, team captain, Tony Aitkens, Roger Gervais, Pat Riley, district "H" sports officer, and Tom Taylor.

Darts champs

Bowling champs

The Inco trophy for outstanding merit went to the Sudbury Miners. From second left; Colette Gosselin, Ken Pratte, Gerald Lamarche, Jim Ressel, Alan Rollens, Vera Conley and Donna Christink.



It was the third annual bowling tournament for the handicapped, and it was the first time it was held in Sudbury.

This year, the tournament was sponsored by local 6500, United Steelworkers of America and the Hammer Valley Association for the Mentally Retarded.

At a banquet held at the Steelworkers Hall, following the day's bowling, trophies were presented to the winning teams.

Top honours went to an Espanola entry, the Espanola Arc Angels. They were awarded the Division "A" championship trophy. Members of the team were Lillian Choquette, Brian Hobbs, Ernie Harmer, Michael Grace, Len Lalonde and Billy Mallette.

The Inco award for outstanding merit was presented for the first time this year. This trophy is awarded to the team that has the most improved team average during the tournament. It was won by the Sudbury Miners; Ken Pratt, Donna Christink, Colette Gosselin, Jim Ressel, Vera Conley, Gerald Lamarche, and Alan Rollens.

The trophy was presented by Bill Lockman, union steward for local 6500 and an employee at Inco's Creighton mine. Bill is on the board for Region 12 of the Ontario Association for the Mentally Retarded and was involved in the organization and planning of this year's tournament.

Waste not, want not — that's the name of the game. And the object of the game is to conserve energy . . . which is no game at all; in fact, it's downright serious.

With vacation time coming up — if not already upon us — we thought it might be of some benefit to pass along a few little hints and reminders that've come our way regarding car travel, of which you may be doing your fair share this summer.

Since the average — not to mention legal — highway speed most generally is 60 m.p.h., you'd be well advised to keep within the limit . . . it'll save up to 20 per cent of your fuel and — believe it — about 99.9 per cent on tickets!

It goes without saying that you'll have your car fully tuned before leaving — which alone could save about 20 per cent of your fuel bills — but you're defeating your own purpose if you don't pay special attention to the air filter which, if dirty, can waste 20 per cent of your fuel . . . exactly what you've saved by having the tune-up.

Sparkplugs, too, should be carefully tested — and probably replaced; misfiring can waste 12 per cent of your fuel.

You'll check the tires, of course . . . not only because they're a big safety factor, but because the very type of tires you drive on can help or hinder fuel

consumption; for instance, belted biased tires can save up to three per cent of your fuel, and apparently radials can save five per cent.

Your car's most expensive luxury is probably air conditioning — unquestionably a welcome boon for hot summer driving — but it'll cost in the long run like a fuel loss of about nine to even 20 per cent.

Just a few little goodies to keep in mind before you take off on that scenic auto trip.

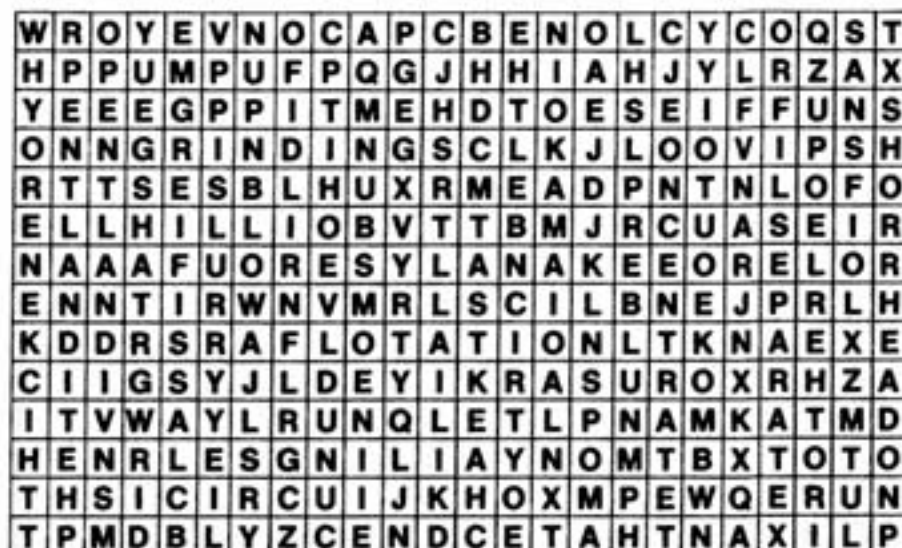
Have a good holiday, and remember . . . highways are happy ways, so drive carefully, and conserve that energy!

Save a buck

(and conserve energy)



Can you find 'em?



Analyser
Ball
Belt
Bin
Cell

Circuit
Classifier
Computer
Concentrate
Cone

Console
Conveyor
Cyclone
Flotation
Frother

Grinding
Mill
Ore
Pentlandite
Pump

Rod
Rough
Sandfill
Separator
Shorthead

Slurry
Tailings
Thickener
Tipple
Xanthate

Seems like only yesterday, but last January we gave you a "find-the-word" problem related to mining. Reactions were favourable, so here's another one — this time related to milling, the second stage in the production of nickel. The 30 words listed above are hidden in that jumble of letters in the box. They read up, down, across — both left to right and right to left — and diagonally, up, down and to either left or right. Sorry, there are no prizes, the puzzle's just for fun — 'ave a go.

Did you find the bird?

OK, so most of you found the hummingbird in the picture on page two — but for those who didn't, there it is in the circle, cleverly camouflaged in nature's own wonderful way. There are over 500 different species of hummingbirds, but the only one we're likely to see east of the Rockies is the ruby-throated variety. Tipping the scales at about one tenth of an ounce, these fascinating wee birds can travel at speeds of up to 60 miles per hour, and their wing-beats often reach the incredible rate of 70 per second. Our little friend departed the greenhouse shortly after his picture was taken.



