

## "Five and Ten" is New Miniature Concentrator

**Copper Cliff:**—The concentrator, massive "ore laundry" where the mine products shake off much of their impurities before passing on to the smelter, sprawls over more than 200,000 square feet of floor space with its rumbling rod mills, its huge thickeners and filters, its 200-odd flotation cells, and other equipment.

Yet in the same building, in a room of less than 1,200 square feet, has recently been installed a miniature concentrator which does the same job as its massive counterpart, and does it just as well.

### ONE BIG DIFFERENCE

There's one difference between the two plants, of course, which must be considered as fairly important. The big fellow handles 13,000 tons of ore a day, while the little fellow will take only between five and ten tons a day and for that reason has been christened "the five-and-ten."

Ore going through the big plant travels a total distance of something like three-quarters of a mile to pass through the various operations. Ore going through the little fellow travels only about 75 feet, but in that trip it is handled by a grinding section, classifiers, flotation units, thickeners, and filters, with reagent feeders and all other basic features of the "big show."

### STEPHEN WAS DESIGNER

Installed for experimental purposes and officially known as a pilot mill, "the five-and-ten" took about five weeks to erect, under the supervision of Assistant Mill Superintendent Walter Stephen, who is also responsible for the design and layout of the plant.

Ore is fed to the pilot mill through a seven-by-10-inch jaw crusher and is then carried by a bucket elevator to a 10-ton storage bin which would be lost in a corner of any of the 17 large 500-ton bins of the big mill.

Less than a yard in diameter and just about a yard long is the miniature rod mill which grinds the ore for "the five-and-ten," a striking comparison with those in the mighty battery of the big plant, each of which is over six feet in diameter and 12 feet long. About 24 tons of rods go into each big mill, but the little one takes only half a ton of rods.

The most perplexing problem in connection with operation of "the five-and-ten" was to devise a method for uniformly feeding to it the different reagents which make the flotation process possible. The big plant takes about 30 tons of reagents each 24 hours, and in that bulk it is comparatively easy to feed them consistently in

the right quantities. In the pilot mill, however, operating on such a small scale, the job was to find a way of automatically feeding only a few drops of reagents a minute and less than a pound in 24 hours. There was no equipment on the market which would successfully accomplish this delicate assignment, so Walter Stephen invented an outfit which fills the bill perfectly.

### EASILY ADJUSTED

From the little rod mill in "the five-and-ten" the feed may pass straight into a small classifier where the coarser particles are washed off and returned for more grinding, on the same principle as in the big plant, or it may be diverted into a unit flotation cell where a first concentrate is taken off and the feed then passed to the classifier. This choice is one of the many different circuits which can with a few quick adjustments be arranged in the pilot mill, and that's the beauty of the miniature plant. Able to secure easily almost any flow sheet he desires, the operator can determine in

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## Amateur Nights Again This Summer

INCO Amateur Nights, novel form of entertainment which scored a success last summer, will be repeated again this year.

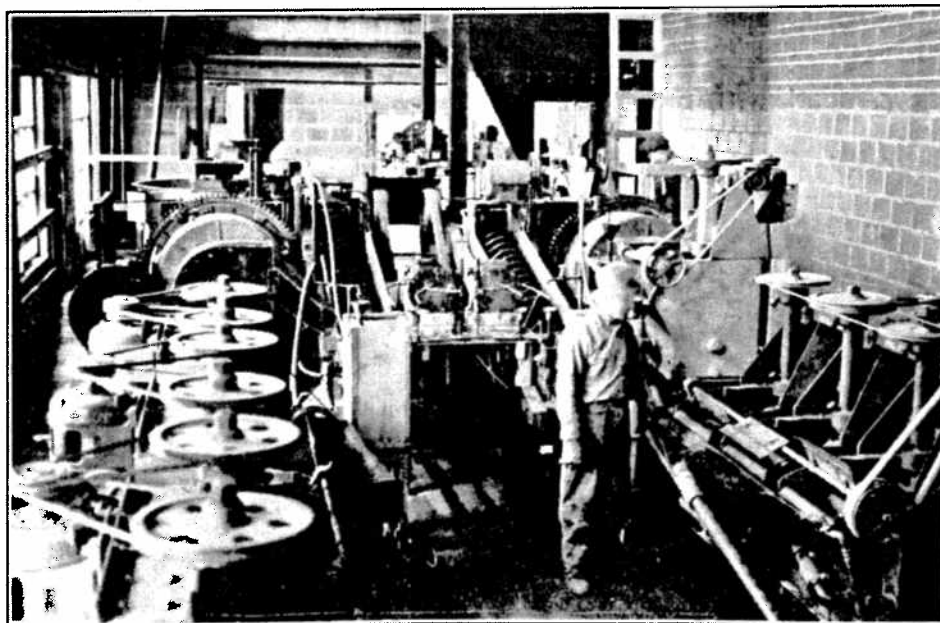
Announcement will be made in a few days regarding rules and regulations of the contests, for each of which prizes will be awarded, with a grand prize for the final winners. Last year's "champion amateurs" who won the prize trip to Toronto, will not be eligible to take part in this summer's competitions. Apart from them, any INCO employee or member of his immediate family may compete.

Those intending to enter should start preparing for the contests now.

## Business Manager Of Medical Services

G. S. Jarrett, General Safety Engineer, is also assuming the position of Business Manager of the Company's medical services.

His offices are located in the Hospital at Copper Cliff. His telephone number is 45.



Here's the "baby concentrator" recently installed at Copper Cliff for experimental purposes, and described in the accompanying article. At the back may be seen the ore bin, and in front of it the top of one of the two miniature mills of the grinding section. The classifiers and little flotation units are in the foreground on both sides of the picture, the three-cell unit being on the right and the six-cell unit on the left.

# Victoria Day Program Was Outstanding Success

**Copper Cliff:**—Large crowds thronged Nickel Park and thoroughly enjoyed the pleasure-packed program to make May 24th an outstanding success for Copper Cliff Athletic Association.

## BEAUTIFUL FLOAT

A long and colorful parade launched the day's celebration, marching to spirited music from Coniston Band and Copper Cliff Pipe Band. Prize-winning float in the procession was that entered by Copper Cliff Canadian Employees' Benefit Association. Represent-



ing the contented worker's home, significant of peace and prosperity, the float was a credit to those responsible for its design. Second float prize went to Mrs. John Lalonde, 318 Legace St., Sudbury, whose 12-year-old daughter Jean rode an artistically decorated car as "Miss International Nickel Company." Third prize was won by the staff of Racicot-Darrach, Copper Cliff. Prizes for the best decorated bicycles went to Ellis Roger, 10 Union St.; Pat Farrell, 29 Serpentine St.; Jack Chapman, 6 Kent St.

School children officially opened the program in the park with O Canada, led by Miss Hazel Varey, and afterward took part in the races in which every one of them received a prize. Awards in the boys' bicycle races were: 12 yrs. and under, K. Niemi, K. McCarthy, O. Desanti; 14 yrs. and under, A. Closs, D. Marzetti, W. Maki.

## TITANIC TUG-O-WAR

A smart shovelling performance was turned in by John Galbraith and Fred Gratwicke of Garson, who won the mucking competition. Then the powerful Froot tug-o-war team retained the C.C.A.A. trophy in a hotly contested tournament. In the first round Froot ousted Refinery and Garson took the measure of Levack. After a brief rest Froot and Garson dug into their toe-holds and threw their weight on the hemp in a titanic tussle. The first "pull" seemed to last minutes before the Frootians got back Garson's early gain and eventually hauled the hankie across the line. In the second "pull" Froot's greater experience decided the issue swiftly. The big crowd was equally enthusiastic over Froot's third straight annual triumph and over the strength and courage of the other teams.

Members of the Froot squad and their weights: Ilcio Matt, 230; Louis Gore, captain, 195; Leo Hornat, 200; Andy Eerese, 240; Eino Seikonen, 240; Stanley Krulikowski, 235; Dan Close, coach; Martin Horne, manager.

## SLOW-CAR DERBY

Taking 9.40 minutes to negotiate a circle of the park, Neph Taus of 10 Dominico St.,

Copper Cliff, copped the Model T slow-car race, which created a lot of amusement. Second creepiest old-timer in the event was coaxed over the course by Phillip Impertori, 33 Diorite St., Copper Cliff, and third by Perry Nazaren of McKim Township.

Copper Cliff Indians trimmed Capreol in a softball exhibition, and Froot and Copper Cliff tied at 2-2 in the afternoon's baseball encounter. A fireworks display and a big dance in Memorial Community Hall were other features, and the crowd got a big kick out of the antics of the clowns. Prizes in the Model Airplane contest were won by Jack Kinch and John Kerr of Copper Cliff and Ken Brown of Sudbury.

## SNAPPY FIGHT CARD

Members of the C.C.A.A. Athletic Club and performers took part in the successful fights card staged in Stanley Stadium in the evening. Results were:

### WRESTLING

Otto Oksanen, Montreal, 174, decided Vern Kallio, Sudbury, at Greco-Roman style.

Nick Chomi, Toronto, 150, pinned George Black, Copper Cliff A.A., 150, in 7 mins., 35 seconds.

Mike Howard, Froot, 200, decided Dolph Beaudry, Copper Cliff Police, 190, in 14 minutes, four minutes extra on a called draw in regular time.

Otto Olsen, Copper Cliff Police, 160, decided Al Griffin, Froot, 175.

Bill Forbes, C.C.A.A., 178, decided John Wathion, Froot, 180.

### BOXING

Lawrence Wulff, C.C.A.A., 88, decided Eud Johnston, Copper Cliff, three 2-minute rounds.

Fred O'Hagen, Froot, 135, decided Cecil Fielding, C.C.A.A., three 2-minute rounds.

Leo Charbonneau, Sudbury, 147, drew with Don Ross, Montreal, 145, three 3-minute rounds.

Jack Lown, Coniston, 180, won by technical knockout over John Baird, Ontario Refinery, 175, in second round.

Paul Matvinko, Creighton, 178, decided Matt Brady, Froot, 180, in an extra round after five 2-minute sessions.

Primo Condotti, C.C.A.A., 205, decided Bill Matthews, Froot, 190, in five 2-minute rounds.

Officials: Referees, Bill Hall and George Elack (wrestling), Alex Hugh Craig (boxing); judges, Jack Morrison and Clark Phillips (wrestling), George Black, Jack Morrison, Jack Lown (boxing); timer, Alex McIntyre; announcer, Red Pianosi.

## WON PRIZE DRAW

Out of the churn during the fights were drawn the names of the winners of \$350 in prizes offered in connection with the celebration. They were:

7155—Mrs. Hilda Pakkola, 14 Evans Road, Copper Cliff.

6599—Marge Odovichin, New Ontario Hotel, Sudbury.

2637—H. Latinville, 42 Power St., Copper Cliff.

1192—Robert Ross, 55 Cedar St., Sudbury.

9808—Robert Grunner, address unknown.

9739—A. Ballarini, Copper Cliff.

8769—Elaine Spence, 455 Harvey St., Sudbury.

966—Lucy McKnight, 13 Evans Road, Copper Cliff.

6519—Bill Jessup, Copper Cliff.

350—Mrs. J. J. Cullin, 12 Union St., Copper Cliff.

# What's What On Sports Front

Closely matched, the five entries in the Nickel Belt baseball league will produce many a tightly fought fixture before the season is over. Coniston is away to the best start, with Creighton, Froot, Copper Cliff, and Sudbury all right in the fight.

The Cochrane-Dunlop lineup is out in front in Nickel Belt softball with three straight wins, Froot in second place with three wins and one defeat. Another Sudbury squad, Creighton, Refinery, and Copper Cliff are the other teams entered.

There are no less than 10 fighting clubs in the Copper Cliff town softball loop: Sid Smith's Reverbs, Wolfe's Orford, Jennings' Orford, Office under Fraser Ross, Marlboros under Atchison, Concentrator under Jim Savage, R. Beckett's Boilermakers, Roy Litzen's Mechanical, Bill Dopson's Smelters, and Crushing Plant under C. Meaden.

Garson is leading the way in soccer at this early writing, and looks as if it would have been a mighty good choice for Dominion Cup honors had its team been ready in time. Froot, well conditioned after picking off the Sudbury Broomball championship, is meeting Falcons in the playdowns as we go to press. Depesters agree that this district is seeing the finest league soccer in Canada this year.

\* \* \* \*

**Froot:**—The Tigers, 1937 Canadian Allan Cup champs, are going to be very much in the picture again next winter, according to Jim Dewey, who is looking after hockey business for the Froot Welfare Association.

No less than five members of the North Battleford Beaver club, the team that gave Froot such a mighty argument for the coveted silverware in the finals at Calgary, will be available for Tigers next season.

Clarence Shillington, first string right winger, and Cam Burke, first string left winger, are now at the Froot. Dave Duchak, first string centre, is on his way. George Allen, second string left winger and Joe Schwab, utility man, have also arrived. Another Froot newcomer is Mark Maveety, left winger who played with Duluth in last season's International League.



Coach Dan Close exhorting Froot tug-o-war team to superhuman efforts May 24th.



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EDITORIAL OFFICE COPPER CLIFF, ONT.  
Don M. Dunbar, Editor

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## FACE LIFTED

With this issue Triangle adopts a brand new format.

And now that the decision is made and the die is cast, we may as well own up to the fact that ever since Volume I, Number 1, made its appearance last September, we've listened to a good deal of criticism regarding the paper's original page-size.

So, finally capitulating, we made up a sample issue in this size and went around taking a little private census with it. We asked fellows all along the line from mine to refinery which size they'd prefer, and only one of them did not vote in favor of the change. For his loyalty we are profoundly grateful, even though the reason he advanced was that his wife found the old size, after one fold the long way, ideal for lining her kitchen shelves.

We must agree with the general opinion that this style is easier to handle, and easier to read.

Also, it is easier to file, which may encourage more people to save it. It is this last thought that makes us cheerful about changing, because our favorite recreation is to lean back and fondly imagine all our readers carefully putting away each copy of The Triangle for the inspiration and enlightenment of a grateful posterity.

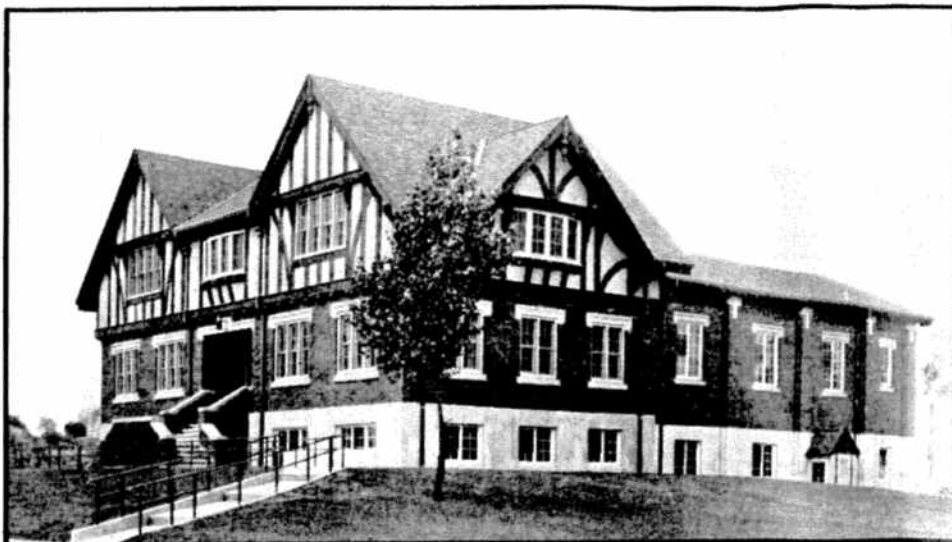
## THE FUTURE

Newer members of the INCO family may not be familiar with the arrangements for future security which the Company makes for all its employees.

The Retirement System, operated by the Company at no cost whatever to any employee, provides for:

(a) Old Age Pensions:—Gives a pension for life to every man who is 65 and who has completed 20 years of service. If he so wishes, part of this yearly pension can be paid to him, and the rest to his widow after his death.

(b) Disability Pension:—Any man who has completed 10 years of service, and who may become totally and



An additional facility which will undoubtedly prove very popular with INCO employees using Memorial Community Hall at Copper Cliff, will be the re-furnishing of the present Golf Room as a lounge, supplied with current periodicals and other reading material. It will be open as a sitting-out room for dances, as well as a meeting and reading room. Completing its first year of service to INCO employees and their families, Memorial Hall is established as a popular hub of community activities, a long list of organizations having taken advantage of its handsome auditorium, its well-equipped gymnasium which is used for badminton and other sports as well as for banquets with its completely appointed kitchen. Young people's organizations, including more than 200, use as headquarters the upstairs clubroom and kitchen reserved for them. On May 14, they presented a splendid program at the Hall's first annual Young People's Night.

permanently disabled, receives a pension for life.

(c) Death Benefits:—Upon the death of any active employee who leaves dependents and who has completed a year's service with the Company, his beneficiary receives a death benefit of \$500.00 and more if he has had more than a year's service. The beneficiary of any pensioned employee also receives the death benefit of \$500.00.

In addition to these benefits, the Company has worked out a Group Insurance plan with one of the largest insurance companies, so that any employee, after completing six months' service, can take out without medical examination as much as \$2,500.00 in insurance at a cost below that of the cheapest insurance policy he can buy as an individual. This insurance not only pays the full amount of the policy to his beneficiaries, but it also provides for payment to him if he should become totally and permanently disabled. Employees of the Company have taken out more than \$24,000,000.00 of insurance under this plan.

Close co-operation between the management and the employees, over a period of more than 50 years, has made possible these and other benefits provided for us. Under such harmonious conditions, it is obvious that working for INCO means more than having a job. It means an opportunity to settle down to a future of confidence and happiness.

## FAMILY NEWS

Somewhat belatedly, but none the less sincerely, Triangle extends salutations to two other periodicals serving employees of The International Nickel Company.

Now almost a year old ourselves, it is of course with a touch of patriarchal indulgence that we salute "Pen and Inco," the snappy little paper published by and for the members of The Inco Club, which is composed of employees in the New York office of the Company. Commencing publication at the beginning of this year, "Pen and Inco" breezily reports Inco Club activities and is doubtless proving very popular with its readers.

From Thames House in London, to employees of The Mond Nickel Co., INCO's English subsidiary, go copies of "The Mond Magazine." First issued in April of 1936, this beautifully printed little periodical adopts more of a magazine style. Besides brief reports of employee activities, it publishes articles written by its readers, covering a wide range of subjects. Its photographic reproductions, most of the originals for which are also received from its readers, are well nigh perfect. Many of them are lovely scenic snapshots here and there in the British Isles.

Regular issues of these two papers will be placed in the new lounge to be opened soon in Memorial Community Hall.

## 100,000 Shifts Without a Lost-Time Accident



**ORCO:**—A remarkable safety record has been achieved by the Tank House crew of the Ontario Refining Company, Limited. By midnight, May 13th, they had completed 100,000 man-days without a lost-time accident, the last previous one of which occurred December 3, 1934.

Such a record is a fine achievement and to W. Koth, Superintendent of Tank House Departments, Plant Manager F. Benard wrote on May 17th:

"It is extremely gratifying to me to note that the Tank House Department has completed 100,000 man-days without the occurrence of a lost-time accident.

"This record is an enviable one and I extend my congratulations to all who helped make it possible. Their conscientious efforts towards the promotion of safety are greatly appreciated."

As we go to press the ORCO Tank House crew are still going strong and are all set to slick their hair for another picture at 200,000. As the boys who plate the copper say — "The first 100,000 are the hardest — it's straight sailing from then on."

### PROTECTS MOTORS

The New York, New Haven, and Hartford Railroad uses Monel wire cloth for screens on blower intakes to prevent snow and dirt from entering motors and transformers on electric locomotives. Some of these screens have been in service for five years despite the corrosive and abrasive conditions to which they are exposed.

### PRODUCE MIDGET TRACTOR

A 650-pound midget tractor for use in gardens, orchards and small farms, has recently been developed by the Vaughan Motor Co., Inc., of Portland, Ore. To combine power and ruggedness with light weight, such important stressed parts as gears, crankshafts and axle shafts are made of cast nickel chromium steels.

## Levack Sports Getting Underway

**Levack:**—A meeting of all the employees of the Levack Mine was held on June 3rd, in the main dry, at which the Levack Mine Athletic Association was formed. Officers elected were: Honorary President, H. J. Mutz; Honorary Vice-President, J. W. Gemmell; President, C. H. Stewart; Vice-President, W. J. Serpell; Secretary-Treasurer, J. R. Carpenter; Sports Directors, A. Wilson, miscellaneous; D. Brown, softball; A. Killah, football; Dr. R. M. Thomson, juvenile; C. Lake, hockey.

### FORM OWN LEAGUES

Owing to the distance and the expense of travelling from this point, it is impracticable for this Association to consider entering any teams in any of the regular Nickel Belt leagues. Leagues will be formed at Levack which will be of an inter-departmental nature, with teams from various levels and departments of the mine and surface playing a regular schedule of softball, football, and any other branch of sport which is considered practicable.

Softball teams are now being formed under the able guidance of Doug. Brown. Teams already entered in the local league are captained by Doug. Brown, Andy Sammon, Crawley & McCracken; D. Fraser, George E. Murray. It is expected that six teams in all will be formed when the league is complete.

### SOCCER AND TUG-OF-WAR

Three teams of Association Football (soccer), are already entered in the football league, captained by A. Killah, Dan Sim and Albert Foster, with the possibility of one more team being formed in the near future. Tug-of-war also has its place in the sun and, from all accounts, Tony Wilson is having a hard time to find a rope that can't be broken. Tennis also comes under the protecting wing of Tony, who is seeing

that the old tennis courts are being put into condition.

With the assistance of the Northern Development grader the athletic field has been put in first class condition and everything is pointing to a very successful season. Winter sports will be taken up when the winter season rolls around, and Cliff Lake will handle this branch of sport.

## Levack Planning July 1st Celebration

**Levack:**—The Welfare Association was formed on the 28th of April and the paid membership now totals eighty, about twenty-five percent. of the total men employed. Members are still coming in and it is expected that about one hundred and fifty or two hundred will join up. Officers of the Association are: F. Jenkinson, President; Herman Thompson, Vice-President; W. H. Mekeown, Secretary-Treasurer; Dan Sim, Jimmy Smith, Fred Thornton, Guy Armstrong, Terry McNeice, Directors.

At the present time arrangements for a smoker, to be held on Friday, June 11th, are being made. At the same time arrangements are also being made to hold a field day on July 1st, with a dance in the evening, and a draw for some good prizes. A fireworks display will also be held in the evening and everybody will be heartily welcomed.

One of the major projects was the repairing of the road from the Cartier Road into the beach at Windy Lake. A gang got together and, along with their tools and fly oil, went at the job, completing it in three nights. Bruce Wilkinson very kindly donated his services and his truck, which was a big help in making a very creditable showing. The community hall was also cleaned out and a dance, under the auspices of the Football Club, was held there Thursday night, June 10th.



# Issue Awards to 278 Passing St. John's Tests

Indicative of the keen interest shown by INCO employees in First Aid training is the long list of successful candidates in the annual tests conducted under the St. John's Ambulance Association at the different plants. St. John's awards have this year been issued to a total of 278 employees, as compared with last year's 148.

In announcing the awards, General Safety Engineer G. S. Jarrett pays tribute to the initiative of the men who took the course, and also to the company doctors who co-operated as lecturers and examiners.

Following are those who received awards, the single letter after each name indicating whether the candidate obtained his certificate for first-year work, his voucher for second-year work, his medallion for third-year work, or his label for four or more years.

## GARSON MINE

Lecturer, Dr. D. S. Pugh; Examiner, Dr. R. B. Harris.

Thos. A. Ballantyne, V; W. C. Payunen, V; James K. Clark, C; Frank G. Longe, C; George H. Morin, V; Sydney D. Gemmell, V; Clyde D. Dunsmore, C; Flemming C. H. Lapierre, C; Stanley A. Kulchyski, C; Alfred G. S. Armstrong, M; Edward T. Burton, C; Bernard J. Spencer, C; John R. McCauley, V; George Lariviere, M; Louis Kobetich, C; Dennis Ralph, C.

## CONISTON

Lecturer, Dr. W. S. Johns; Examiner, Dr. R. V. Chapple.

Wm. Evershed, C; Mike Wojcickowski, C; Cecil H. Johnson, C; Steve Wasilchuk, C; Thomas Storozuk, C; James Forestell, C; Kenneth Gustin, C; John L. F. Lown, C; Ovilla E. Laporte, C; Cecil S. Squires, C; Sylvester Rivard, C.

## ORCO

Lecturers, Dr. R. B. Harris, Dr. F. M. Lively; Examiners, Dr. C. R. Ferguson, Dr. R. B. Robinson, Dr. J. A. Munro, Dr. J. L. Kirk, Dr. R. V. Chapple.

W. J. Marshall, C; J. A. Rodney, C; J. M. Leigh, C; J. A. Latreille, C; Alex Stesco, C; F. W. Sheridan, C; G. E. Smith, C; C. G. Caswell, C; Henry Clements, C; R. J. V. Tupling, C; I. P. Asam, C; A. L. Egan, C; A. M. Hagerman, C; L. T. Baird, C; J. I. Mason, C; John Clare, C; K. A. MacRae, C; W. R. McGrath, C; T. J. Meehan, C; Peter Nazar, C; Ronald Lipscombe, C; D. J. McArthur, C.

## COPPER CLIFF

Lecturer, Dr. R. B. Harris; Examiners, Dr. R. B. Robinson, Dr. J. A. Munro, Dr. C. R. Ferguson.

W. D. Yorke-Hardy, V; Risieri Polano, C; J. E. Gilpin, C; John Stewart, C; E. T. Howard, C; Matthew Atkinson, C; J. S. Ferguson, C; D. F. Small, C; L. F. Maude, C; Patrick Bombardier, C; Wesley McNeice, M; John Weir, C; J. R. Carpenter, C; Thos. Cornthwaite, C; J. D. Kirkwood, C; George Gilpin, V; W. J. Powell, C; J. T. Gennings, C; P. J. Krull, C; L. W. Shore, C; W. E. Lawson, C; A. E. Browne, C; I. W. Fraser, M; A. B. Johnston, C; K. R. Shore, V; J. E. Sauve, C; J. E. Lineham, C; Gordon Adams, C; John Davis, C; R. A. Beckett, C; A. G. Blanchard, V; A. T. Wright, V; Alexander Nadorozny, V; W. E. Burchell, C; D. G. Graham, C; J. H. Moxam, C; J. F. Day, C; A. J. Armitage, C; T. D. Gladstone, C; Wm. Hanson, C; Alfred Cocker, M; J. A. McRoberts, C; D. A. Medlock, C; F. S. Boon,

C; Nathan Crawford, C; N. F. Johnston, C; J. R. Clark, C; T. M. Crowther, M; G. R. Guthrie, V; C. T. Robertson, C; P. L. Beckett, C; Armie Didone, C; A. T. Hughes, C; J. B. Cookson, C; J. A. Young, C; W. E. Gillin, C; S. C. Kerley, C; W. R. Trotter, C; C. E. Armitage, C; F. J. Gorman, C; N. W. Sargent, C; W. H. Gigg, C; W. B. Allen, V; K. E. Woolven, C; F. L. Lapierre, C; W. D. Cooper, C; J. W. Lamacraft, M; D. D. Salhani, C; Donald McKay, C; Orlando Frattini, C; P. C. Heaphy, V; N. C. Somerville, C; C. A. Hildebrandt, C; Russell Moxam, C; John Toivonen, C; R. H. Clark, C; S. L. Ericson, C; W. Kuhl, C; J. F. Gourlay, C; Hans Larson, C; Wm. Rogers, M; J. R. Rae, C; R. C. M. Pelletier, C; R. M. McLean, C; E. E. Collins, V; John Quiring, C; P. J. Gibbons, M; F. A. Mair, C; Archibald Melancon, C; C. G. Hobden, C; C. R. Workman, C; G. E. Somers, V; T. F. Mathew, C; J. H. Walker, V; Wilfred Cobus, C; M. P. Pack, C.

## CREIGHTON

Lecturers, Dr. C. A. Armstrong, Dr. F. M. Lively; Examiners, Dr. R. M. Thompson, Dr. K. A. MacLean, Dr. R. V. Chapple.

Richard Stevenson, C; Ed. Bulchuk, C; Prosper Cayen, C; Sydney Wells, C; Archibald Seymour, V; Paul Tapper, C; Villi Maki, C; Lindsay Hodgins, C; Alex Affli, C; Einar Ljungar, C; Karl Truszkowski, C; Frank Pintar, C; Vencel Lesjac, V; Vaino Latvala, C; John Tapanainen, C; Bruce Lean, C; Harry Narasnek, C; John Wiznuk, C; Wilfred Whissell, C; Harry Stevenson, V; Robert Pascoe, V; Ralph Hawkins, C; George Jeffs, C; Robert Brown, C; Wm. Heino, C; Alfred Emblin, M; Albert Banos, C; Michael Sochoski, C; William O'Neill, C; Louis Verelli, V; Verne Meensivu, C; Albert

Stone, C; Joseph Fyfe, C; Hugh Simpson, V; Andrew Petrenko, C; Arthur Rayworth, C; R. H. McInnes, C; A. B. Beer, C; J. C. Rountree, C; T. J. Kuula, C.

## FROOD

Lecturer, Dr. F. M. Lively; Examiners, Dr. K. A. MacLean, Dr. J. L. Kirk, Dr. R. V. Chapple, Dr. R. M. Mitchell.

Gordon French, C; Warner Zimmerman, C; George Blueman, C; Eino Pukara, C; Karl Marttila, C; Eino Puska, C; Arvo Niemala, C; Stanley Barswski, C; Stephen Perasko, C; Nicholas Sajatovich, C; Walter Labunski, C; Stanley Krolkowski, C; Gorman Tilt, C; Stanley Sefton, C; Joseph Zaluski, C; Stellerton McIsaac, C; Edward Baker, C; John Mihelic, C; John Periski, C; J. R. Harrison, C; John Gorday, C; Albert Bealer, C; Joseph Smith, C; Archibald Gee, L; Steven Panchuk, C; Victor Munavish, C; Douglas Inglis, C; Steven Smith, C; Michael Janvari, C; James Daigle, C; Bertram Conley, C; Ernest Forcier, C; W. J. MacCoy, C; J. J. McNamara, C; F. L. Edwards, C; E. J. Trottier, C; J. F. Raspberry, C; E. P. Warzecka, C; A. H. Walford, C; John Broskeyk, C; Peter Bilecki, C; Alex Morakan, C; Wm. Mazurkiewicz, C; Otto Miller, C; Vilko Heiti, C; George Andrew, C; Joseph Nogode, C; Frank Silc, C; Elzear Martin, C; Wm. Tennyson, C; F. J. Graham, C; E. A. Douglas, C; Wm. Quarrell, C; Michael Muskaluk, C; Michael Delj, C; Wilfred Hahn, V; Andrew Penna, C; Hugh Lindsay, C; Romeo Frappier, C; Lee Slitzer, C; Colin Couzens, C; P. H. Fletcher, M; J. H. Nicholls, V; John Damstead, C; Herbert Robertson, C; Peter Sholdra, C; Michael Pechkoff, C; James Martell, C; H. W. Aitchison, C; Walter Petrina, C; Frederick Bembem, C; Joseph Swertlowski, C; John Misiak, C; J. J. Plaskoski, C; S. S. Coogie, C; C. L. Langlois, V; Alexander Aitchison, C; Frank Lisoski, C; Mark Zeleznjak, C; H. J. Jacobson, C; Aaron Warren, C; Onio Talo, C; Godfrey Rheume, C; Victor Koivista, C; R. G. Debney, C; Oswald Persian, C; Gerald Saunders, V; John Mielty, C; J. C. Cayen, C; Clifford Haskell, C; Thos. Newman, L & M; W. E. Bawden, C; Hubert Abigail, C.

## LOST TIME ACCIDENT DERBY KEEP YOUR HORSE AHEAD BY WORKING SAFELY.

2000-2200						
2400						
2600						
2800						
2950-3100						
12-S. SHIFT						
CONSTR.						
ENDGR. 1937						
ENDGR. 1936						
	RATE 0.30	RATE 0.25	RATE 0.20	RATE 0.15	RATE 0.10	RATE 0.00

With this novel feature, prominently displayed, the Frood Safety Department keeps the men posted on how they are getting along with their accident prevention work. The positions of the galloping nags in the "Lost Time Accident Derby" are shifted regularly to denote the rate of lost-time accidents charged against the different groups of men they represent. Apparently almost lost in her own dust, the black-and-white filly "Construction" was well out in front when the picture was taken.

## MINING — *Past and Present*

Third of a Series of Articles by K. V. LINDELL, Copper Cliff

In the previous discussion on the methods of breaking ground in the present day we did not devote much space to explosives—those all-powerful compounds that first revolutionized the mining industry. The change was, however, slow. Gunpowder was first introduced into the mining industry by Caspar Weindle in Schemnitz, Germany, as early as 1627, but, it was not until after 1863 when Alfred Nobel succeeded in manufacturing nitroglycerin on a commercial scale that explosives revolutionized mining practice. Blasting gelatin, as used in most hard-rock mining, was also discovered by Alfred Nobel in 1875 when he found that by mixing certain proportions of nitroglycerin and guncotton, a tough elastic and jellylike mass resulted, which turned out to be the strongest of explosives and was also highly water resistant.

### DISPLACED WET WEDGES

It was not long before the miners discovered that a stick of this powerful explosive placed in crevices, and later in holes drilled in the rock, would shatter it faster than the old methods of fire-setting or the methods of biblical days when rock for the temples was broken by driving wood wedges in crevices and then soaking the wood with water, inducing swelling which broke the rock.

The blasting gelatin or "powder" as used at Frood Mine comes in sticks 8 inches long and 1½ inches in diameter, covered with a waxed paper. The average powder consumption in ore production is approximately one stick per ton of ore broken. To detonate the powder, or ignite it, a faster explosive must be used. "Caps" or copper capsules filled with fulminate of mercury fulfill this requirement and is set off by a fuse to which the cap is "crimped." Safety fuse is made by spinning one or two layers of yarn, hemp, or jute around a central core of fine black powder and then waterproofing it by additional layers or coverings, varnish or gutta percha.

### TIMING THE FUSES

Knowing the rate at which the fuse burns, the miner cuts the fuses for the holes to be blasted sufficiently long enough to enable him to light or "spit" all the fuses and still have time to reach a point of safety before a blast occurs. The photograph of a loaded breast accompanying this article shows the usual method of spacing the holes, and the fuse ends can be plainly seen ready for spitting. The fuses are cut so that the lower holes always explode before the upper holes, but only a limited length may be cut off from a standard length fuse.

It is after the rock is broken that we come to the point at which many mining methods vary. As the whole purpose of mining is to break the ore and get it to surface at a profit, many and devious ways have been devised to perform this with the minimum of effort and hazard. At the Frood Mine the adopted system requires the broken ore to be shovelled into a "chute" or opening maintained between the haulage or transportation level and the working stope, where the ore is being mined.

### CHUTES AND WINGS

As shown in the photograph of a shoveller "mucking" into a chute, the open-

ing is covered with steel rails (called a grizzly) to prevent oversize chunks of ore as well as the "mucker" from falling into the chute or, as it is commonly called, the "boxhole." The distance between chutes is kept at a minimum to keep the shovelling distance as low as possible. As practically all chutes from the level up are vertical, chute "wings," or timber slides for the ore built from the main chute to the adjacent timber set also cut down the shovelling distance for the "mucker."

This method of shovelling the ore into the chutes is not as arduous as that of the time of Agricola when all ore had to be shovelled into pans, wheelbarrows, or trucks and trundled away to the shaft. At the shaft it was dumped into a bucket and, usually by a windlass raised to the surface. All ore had to be handled in this manner because mining was only carried on at the same elevation as the haulage to the shaft. After a level was completely mined out they started a new one a little farther down. Only in exceptionally hard ground did they have openings of very great height.

### HOISTING THE ORE

Though the work of miners in bringing the ore to surface is much easier than in the time of the ancients, the system is more complex and a simple description will not suffice. In the next article we will discuss this operation in detail as practiced at Frood.

## Will Donate New Trophies

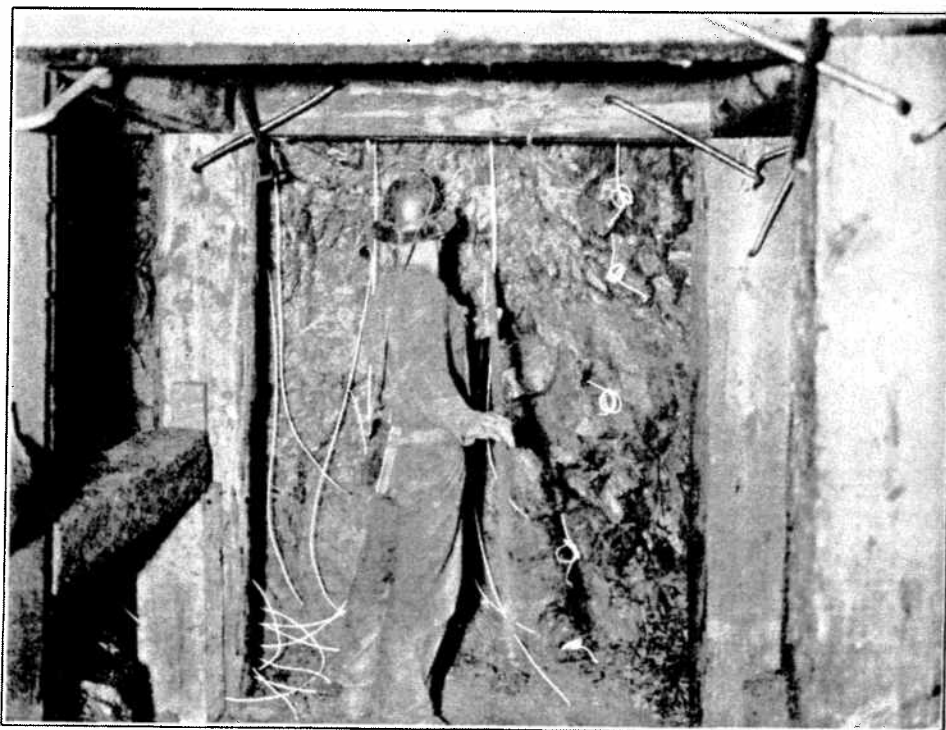
Great activity on the part of the Welfare Associations at the different INCO plants has resulted in the formation of many tug-o-war and softball teams. At present these are pitted against each other in inter-departmental contests, but it is planned that later in the season there will be Inter-Welfare Association tilts in both tug-o-war and softball.

For this purpose General Supt. R. D. Parker has offered to donate a trophy for Welfare Association tug-o-war, and there is no doubt that his offer will be enthusiastically accepted, as also will be that of J. W. Gemmell, Director of Personnel, to donate a trophy for Welfare Association softball. The latter would be open to competition by teams made up of employees not already playing in some organized softball league.

Full details concerning the competitions will be announced in the next issue of Triangle. In the meantime the Welfare Associations will be grooming their line-ups for some hectic struggles.

### IN OIL REFINING

Equipment used in chilling lubricating oils as part of the refining process must function at 75 degrees F below zero. Steels containing 2½—3 per cent. nickel retain their toughness at this low temperature and combine excellent ductility with high fatigue strength. Hence they are widely used for this purpose.



In a square set stope in 22j pillar on 2800 level south, Frood Mine, Mike Danko is tamping charges of powder firmly into the round of blasting holes which have been drilled into the breast. Fuses can be seen hanging from some of the loaded holes. The fuses are cut more than sufficient length to enable Mike to reach a point of safety after he has lit them. A slight variation in the lengths of the fuses makes it possible to discharge the holes in a series instead of simultaneously, which is necessary for complete breaking of the ore.

## DR. MOWAT TAKES OVER

An extensive program of improvements, designed to increase facilities for handling "outdoor" patients and to provide the very latest specialized equipment, is being undertaken at Copper Cliff hospital.

Part of the program has been completed with the remodelling of one wing and a sun porch, and the rest of the work is proceeding.

When it is completed, probably in about six months, INCO employees will have at their service one of Canada's most modern diagnostic centres and general hospitals.



The program is being carried out under the supervision of Dr. Harold F. Mowat, who on June 1, succeeded Dr. W. A. McCauley as chief of INCO's medical and surgical services and superintendent of Copper Cliff hospital.

Highly qualified for his res-

ponsible position is Dr. Mowat. Born in 1900 at Wingham, Ont., he attended public and high schools at Acton, and then attended the University of Toronto, from which he graduated in Medicine with the class of '23.

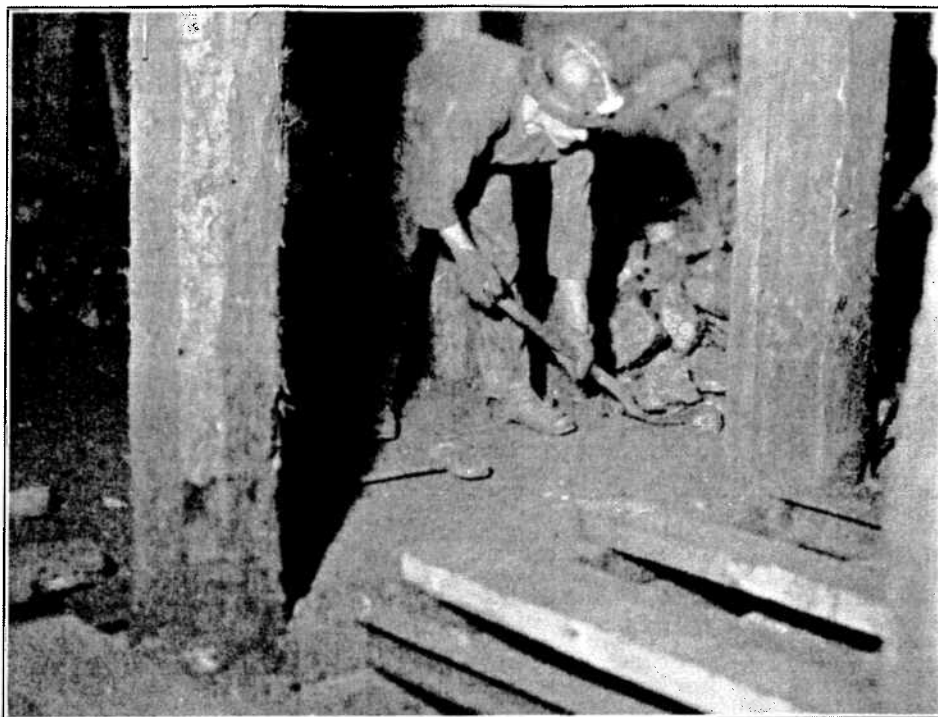
Since his graduation Dr. Mowat has obtained a wide diversity of experience. After a year of service in the Ontario Hospital at Orillia, and a six-month medical contract on construction work between Island Falls and Timmins, he served a year's internship in the Seaside Hospital at Long Beach, Cal. For five years he was engaged in an active industrial practice in Los Angeles Harbor.

Returning to Toronto in 1930, he joined the staff of the University of Toronto as demonstrator in anatomy and pathology, and one year later was appointed house surgeon at Toronto General Hospital. On completion of his three-year period as house surgeon, he received the degree of Master of Surgery from the University of Toronto, and was awarded the coveted Lister Prize in Surgery for 1934,—"awarded annually by the late Dr. Frederick LeM. Grasset, Emeritus Professor of Surgery at the University of Toronto, to the candidate for the degree of Master of Surgery who obtains the highest standing in the examinations for that degree."

Dr. Mowat spent two months of the summer of 1934 doing relief work on the staff of Copper Cliff hospital, before sailing for London, England, where he was successful in the examinations for a Fellowship in the Royal College of Surgeons.

Having studied in London and Edinburgh, Dr. Mowat returned to Toronto in the summer of 1935 and for one year was Dr. W. E. Gallie's resident surgeon at Toronto General Hospital. On completion of that term, he was appointed to the surgical staff of the Western Hospital in Toronto, and received a teaching appointment in the Department of Surgery at the University of Toronto. These posts he resigned last month to come to Copper Cliff.

Dr. Mowat was married in 1926. Mrs. Mowat and their little daughter will join him in Copper Cliff later in the summer.



Underground at Frood, Andrew Wachel is snapped by Triangle mucking ore into a grizzly in 44 stope on 2400 level. The ore passes through the grizzly and boxhole, down the chute to the tram cars, which carry it to an ore pass connecting with the crusher station, where it is crushed before hoisting.

## Association is Getting Results

**Coniston:**—The Welfare Association's work to date has accomplished, among other things, these popular improvements: Pay day hours have been altered from 1.00-5.00 p.m. to 7.30 a.m.-12.00 noon; sinter plant bin doors have been rebuilt; matte room men change shifts instead of working only days or afternoon shift; holidays have been rearranged for some married men from June to July and August, when their children will be home from school.

A general meeting of the Association was held June 9, at which a good attendance listened to a discussion of the aims and work of the organization. Officers at present are: A. Langlois, pres.; L. Blake, vice-pres.; F. M. Aggis, sec.-treas.; W. Burns, E. L. Carscallen, E. McLean, E. Albert, F. Conlon, M. Blake, A. Patterson, W. Evershed, Leo Gauthier.

## 929 Enrolled in New Association

**Port Colborne:**—Confined to hourly rate men, Port Colborne INCO Employees' Welfare Association nevertheless has already enrolled a total of 929 members, an excellent record.

George Parker is president; Jas. Emburgh is vice-president; C. H. Kanold is secretary-treasurer; members of the Executive Committee are: C. F. Neff, Jos. Schonburger, Stanley Wilcox, Harold Hewitt. The Directorate is composed of the officers and executive, and Ivan Royal, John Shedden, C. M. Reeb, A. Schofield, J. Morvin, J. Vasiloff, Geo. Miscivich, Wm. Avery.

The "Port" Association has numerous activities under consideration. It will welcome suggestions from its own members or from other Welfare Associations within INCO.

## Garson Talent Staged Fine Smoker

**Garson:**—Its teams having so far chalked up two straight wins in both soccer and softball, Garson Welfare Association celebrated at a smoker the night of June 15 in the schoolhouse. There was a good turnout, and everybody thoroughly enjoyed the program. President Arthur Lye was in the chair.

Those contributing to the program were: D. Thompson, old-time fiddling; Miss Marguerite Scott and Ted Dash, violin and piano duet; J. Walker, vocal solo; G. Bell, solo; J. Brodie, concertina. The newly formed Garson Orchestra, rivals of the Wayne King and Guy Lombardo outfits, made a tremendous hit under the peppy leadership of F. Desjardins.

## Danger Lurks Even in Small Jobs

Even the most casual, "run-of-the-mill" job has its accident hazards unless it is performed carefully. This was demonstrated one day in September at Copper Cliff, when four men lifted a wheelbarrow runway clear of the roadway to the concentrator, to allow a truck to pass.

They stood the runway on its edge, and when they went to replace it, it fell over, a nail in it piercing the right foot of one of the men and causing a very painful wound which kept him off work for a week.

## FOR QUICK FREEZERS

Because plated brass fastenings corroded and chipped, Monel accessories are used by one of the largest manufacturers of equipment for the modern process of "quick" freezing foodstuffs.



# Barrel-Making Thriving "Sub-Industry" of INCO

(By W. F. MAUNDER, PORT COLBORNE)

Barrels of various sorts, shapes and materials used in widely diversified ways, are such a normal part of existence that they are taken quite for granted. Actually, achievement and romance are closely linked with their history and use.

The forerunner of our present barrel was made and used by the early Romans, and yet human ingenuity has never been able radically to improve it. The only changes that time has brought about have been in the methods of manufacture of the materials, and the finished articles, and in the number of shapes and sizes. Modern science has never improved upon the arch construction of the ancients. It is true that it is wasteful of space in piling, but this waste is far more than offset by the greater strength and ease of handling compared to other types of packages, which is the reason that nearly all of the products of Port Colborne Refinery are shipped in this type of container, and the need for strength and handling ease will be readily realized when it is remembered that they go to all parts of the world by rail, boat and transport. This in itself spells achievement and romance in no small measure.

Though there are many sizes and shapes of both tight and slack barrels in common use, only four sizes of the so called slack barrel are manufactured at INCO's Port Colborne plant. The distinction between "tight" and "slack" comes in the ability to carry liquids as compared to solids with the attendant difference in manufacturing treatment, but only the method of fabrication of the "slack" barrel will be outlined herewith.

## NEED HEAVY STOCK

As the materials to be carried in the packages from the refinery are all heavy, the barrels must be made of heavier than ordinary stock, which has here been standardized at  $\frac{3}{4}$ " thickness of oak and, although not necessarily all of #1 clear grade, yet all staves must be of exact length and no over 5" in width.

Many manufacturers carry out the complete process,—that is, cut and shape the staves and headings as well as fabricate the barrel itself, but here it has been found more convenient to purchase the staves and headings already sized and processed. However, perhaps some idea of the preliminary stages in the forming of the staves and headings will be of interest.

## "STAVE BOLTS" FIRST

The logs to be made into staves are first cut into 3-foot lengths called stave bolts. These bolts are then quartered, the heart split off, and the balance cut to uniform length. Following this, the bolts are run through a machine having a cylindrically shaped saw which gives the staves the proper thickness and curvature, and then they are put through a jointer to give the edges the proper bevel.

The headings are also cut from similar bolts by a head-sawing machine which cuts them into segments 1" thick upon sap,  $\frac{3}{4}$ " thick at the heart, and 24" long. Two or three such pieces are required to form a complete head, or end piece. The heads and staves are then allowed to stand for seasoning.

In cutting staves and heads, it is always necessary to keep with the grain of the wood. Three hundred and thirty-five cubic feet of timber are required for 1,000 complete heads

and 256 cu. ft. for 1,000 staves. The timber which goes to make the heads must be larger in diameter than that for staves.

The staves for delivery to the barrel manufacturer are put in bundles with just the required number of staves per bundle to make a barrel of the dimensions specified.

## MAKE TWO SIZES

At Port Colborne, two sizes of barrels, 7 cu. ft. and 5 cu. ft., and two sizes of kegs are made, since these most conveniently take care of the shipping problem.

In the manufacture of barrels, proper, the staves are first set around a circular setting-up form just the size of the end of the barrel to be made. This setting-up form has a raised portion in the middle just the diameter of the inside of the barrel end, and has also three arms which support a heavy iron hoop called a "truss" hoop, holding it up from the top face of the form about 6", and this hoop, being the size of the finished barrel outside at the distance from the end mentioned, becomes the balance of the form.

The staves are driven in tightly around the circumference of this form and, due to their being shaped as they are, they fit tightly together in the form but spread out to approximately twice this diameter at the other end.

## STEAM ENTERS OPERATION

A second truss hoop is then placed around the formed end, holding the staves in position and the whole is put under a hood and steamed. The steaming allows the staves to be pulled together at the opened end which is accomplished by means of a windlass consisting of a cable loop that drops over the spread-out end of the staves, and when the power is applied the cable loop draws the

staves until they are tight together and another truss hoop is put around to hold them in this position. In the meantime, of course, the opposite end has been prevented from spreading by the truss hoop previously put on.

The barrel is then placed over a heater consisting of a cast iron cylinder about 10" in diameter in which is a coke fire. This dries out the moisture that was added in the steaming process and when completed, the staves permanently retain the shape into which they were forced by the windlass.

## CUTTING THE "CHIMES"

Next in line comes the truss hoop driver, which forces a heavy truss hoop down tightly against the bilge of the barrel at either end, and tightens down the truss hoops already in place, following which it goes to the "crozer machine."

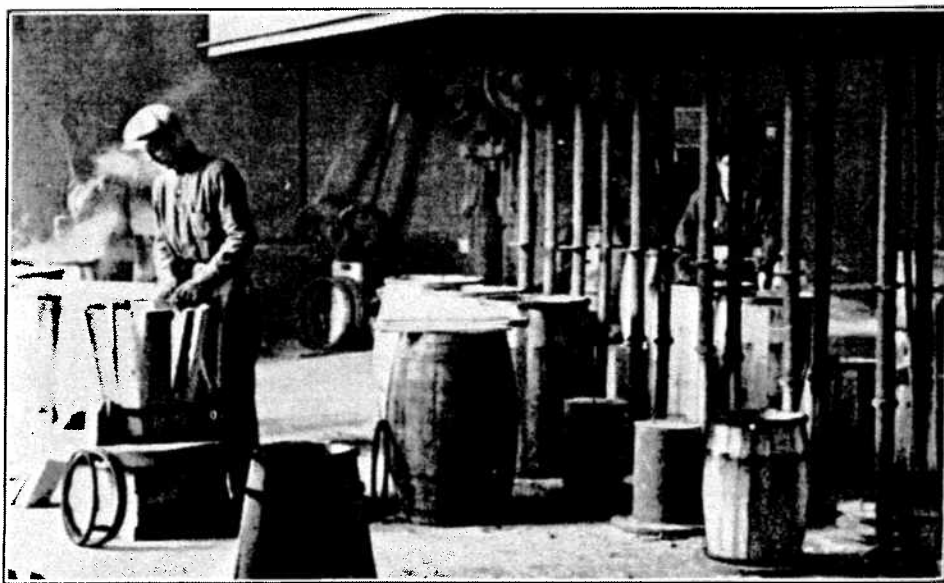
This is a machine having two sets of knives spaced a set distance apart. The barrel is placed between these sets of cutters, and they are drawn together at the same time that the barrel revolves about a horizontal plane. This process cuts the chimes or grooves around the ends of the barrel on the inside into which the head and bottom fit, and at the same time finishes off the ends to a uniform length.

At this point, the regular barrel hoops are brought into the picture. These hoops are made of a special steel which comes in rolls. It is  $1\frac{1}{2}$ " wide and either .049" or .063" thick, depending on whether it is to be used for kegs or large barrels.

## FLARING THE HOOPS

The hoop iron is cut into strips of the required length and fed through a pair of rollers, one set at an angle to the other which flares the hoop so formed so that one edge is a greater circumference than the other. This flare corresponds exactly with the bilge of the barrel on which it is to be used. The ends of the hoop are rivetted together and finished off so there are no sharp edges.

The barrel after leaving the crozer machine goes to the heading machine, where the head is fitted into the groove or chime,



Barrel-making at INCO's Port Colborne Refinery has grown into a flourishing little "industry within an industry." In 1929, the cooper shop there turned out a total of 38,478 barrels; last year the output was 111,544. Photo shows a section of this busy department. On the left Harry Smith is engaged in the first operation of barrel manufacture,—setting the staves in the circular setting-up form, with the heavy truss hoop which holds them in place clearly evident about six inches from the bottom of the staves. To his right, behind the pipes, Otto Pellne is working at the heaters. After being steamed to facilitate pulling them into shape, the barrels are placed over these heaters, which are cast-iron cylinders in which coke fires are burning. Two different sizes of barrels may be seen standing over the battery of barrel heaters for drying.



and the heavy truss hoops are replaced by the regular hoops, and pressed down tightly. Six hoops each are used on the barrels and four on the kegs. The package is then ready for filling after which the other end is set in and the hoops tightened down by hand and nailed to prevent loosening in transportation.

#### 111,544 LAST YEAR

The manufacture of barrels at the Port Colborne refinery has developed from being located in a small section of the carpenter shop, and producing 100 seven-cu. ft. barrels per 8-hour day in 1917 to now being operated as a separate unit, having a capacity of 650 barrels of the 7 cu. ft. size per 8-hour day.

In the year 1936, there were 8,436 barrels shipped to Copper Cliff in addition to those used in Port Colborne, and the total output for the year reached the amazing total of 111,544, as against a total output for all purposes of 38,478 in 1929.

## Nothing Stops Young Dan Cupid

**Port Colborne:**—In spite of the war in Spain, Coronation, spring floods, and the general activity and excitement that comes at this time of year, there seems to be one who pursues the even tenor of his ways. We refer to none other than little Dan Cupid. Since the last issue of Triangle, there have been two members of the Electric Dept. who have succumbed to his shower of darts with promises of more fatalities before the snow flies again.

#### JULIUS—BALOGH

In early March, Toth Julius, one of the custodians of our dissolving unit, from which our huge ten acre plating plant derives and replenishes its supply of electrolyte, married Marie Balogh in Brantford at the home of the latter's sister. After a short honeymoon in Southern Ontario, the happy couple took up residence in Port Colborne.

#### TALLON—ANDERSON

One bright spring afternoon, Jessie Mary Anderson, elder daughter of Police Sergeant Charles K. and Mrs. Anderson, was united in marriage to Wilbert Mark Tallon, of Port Colborne, son of Mr. and Mrs. James Tallon of Webbwood, Ont. The marriage took place in the neighbouring town of Welland. Following a reception and wedding dinner, the couple left on a motor trip to Detroit and Chicago. Upon returning, they took up residence in Port Colborne.

This might be a suitable time to announce that before long Mr. and Mrs. Olivo Piagno will have to put another plate on the dinner table for their young daughter Rose, who arrived recently.

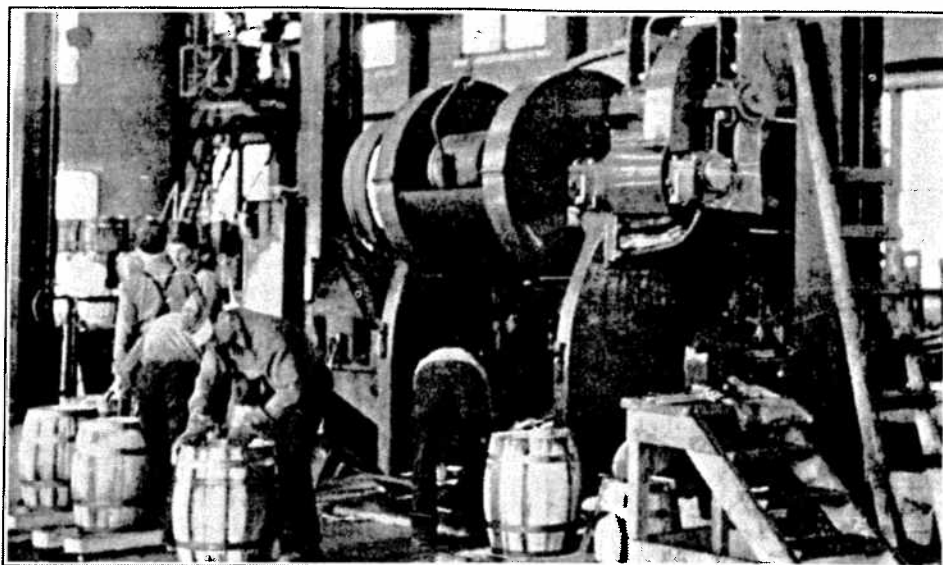
## HORTICULTURIST TO GIVE ADDRESS JULY 20

**Copper Cliff:**—Further stimulus to the constantly increasing interest among INCO employees in beautifying their home grounds will be the open meeting in Memorial Community Hall, Copper Cliff, Tuesday, July 20, at 8.00 p.m.

J. F. Clark, expert horticulturist from the Department of Agriculture in Toronto, will be present to give an address on Horticulture and Landscape Gardening.

INCOites are cordially invited to attend, and to bring along their gardening problems for Mr. Clark's advice.

Members of the Sudbury Horticultural Society are also urged to attend the meeting.

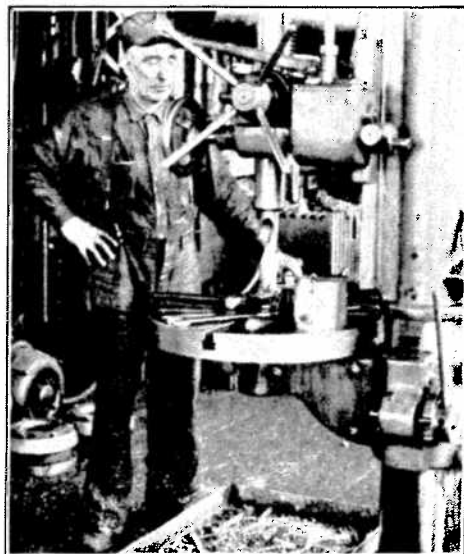


Although Port Colborne's cooper shop in 1936 sent more than 8,000 barrels to Copper Cliff, the greatest portion of its output is used for packing shipments of pure electrolytic nickel. Photo shows a crew of packers loading up barrels of nickel as it drops from the huge shearing machine which cuts the nickel cathodes into a convenient size for the manufacturers.

## Has Splendid Safety Record

**Copper Cliff:**—A splendid safety record stands to the credit of John Hill, mechanic in the machine shop, who has worked for INCO approximately 42 years and has never suffered any injury other than minor bruises and scratches.

Now 63, he looks forward to retiring on a Company pension. Then he may have a trip to Finland, but he'll continue to make his home in Canada, "just taking things easy." Triangle's photographer has snapped



him on the job, keeping a fatherly eye on one of the big drills.

It would almost be correct to say that INCO is "as old as the Hills," because John Hill's father came out here from Finland in 1885, packing his kit through the bush from Sudbury to be in at the start of the old Copper Cliff mine in 1886, and John Hill himself was an employee in the first Copper

Cliff smelter.

The odd fishing trip to Penage is Jack Hill's recreation now, particularly since the annual holiday with pay has come into effect.

He was married in 1897, and has six children. One of them, Conrad, is on Bill Bradley's painting crew here.

## Christie Seeks Worlds to Conquer

**Port Colborne:**—With spring in the air, the electro softball team can now nightly be found on vacant lots and ball diamonds diligently practicing forthcoming campaign. Due to more urgent business, manager Donald MacDonald of last year's championship team was forced to resign his post, but it has been capably filled by Thomas "Biscuits" Christie of rabbit fame.

#### NEW STAR HEAVER

Manager Christie, not being content to rest on the laurels of others, has been endeavouring to add more batting and fielding strength as well as securing the services of Glen Roach, a star pitcher recently arrived from Queen's University.

Christie has ambitions, and like Alexander, is looking for more worlds to conquer. The Electros already having won the plant league championship two years in succession, they are toying with the idea of entering the town league if one is formed. However, other plant league managers are doubtful if the men of Christie can even repeat this year.

#### PROBABLE LINEUP

Probable lineup will be as follows: D. Runions and F. Brennan, catchers; R. Morrison, 1st base; A. Winn, 2nd base; J. Teplica, ss; A. Brownlee, 3rd base; V. Upper, rf; A. Thompson, cf; R. Walters, lf; L. Brema, utility infielder; C. Misener and L. Gonyou, utility outfielders; Les Heard, Wm. Roach and Glen Roach, pitchers.

Shortly after your humble correspondent penned the above, the management of the local hard ball team threw a bomb shell into the camp of the men-o'-Christie by announcing that no hard ball players would be allowed to play softball. Woe is Christie!

# NICKEL . . . AND ITS USES

## NICKEL AND OIL

Second of Two Articles Relating  
Nickel's Contribution to the Oil Industry

The last article in this series showed how important nickel has become in the drilling of oil wells and why many vital parts in oil well machinery are made of nickel alloys to resist corrosion and wear.

But nickel's job is not done when the oil is brought to the surface. In fact it's just begun, for the intricate process of oil refining finds nickel continuing to play an indispensable role. Indeed it is no exaggeration to say that without the use of nickel alloys, many of the processes used in petroleum refining would not be economically possible.

### STRICT REQUIREMENTS

Metallurgical developments thus keep pace with the scientific advance of the oil industry to provide the necessary materials of construction. Nickel is important because petroleum refining practices call for the utmost in performance of metallic materials. The industry must be sure of chemical stability in all kinds of corrosive environment and must depend on superior physical properties under adverse conditions of temperature and pressure.

Among the nickel alloys used in oil refining, Monel finds particularly wide application. This is especially true in operations located at seaboard points where sea water is used for cooling and condensing. In this connection the story is told of a certain refinery in the New York district which discovered after lengthy tests, that Monel bolts outlasted anything else available, for the joints of cast iron condensers. They put 50,000 such bolts into their condenser banks and after twenty-one years of exposure to New York harbor waters there was practically no alteration from the original condition of the metal!

### WHOLE FAMILY HELPS

Throughout the oil refining industry as a whole, practically the entire family of nickel alloys may be found on duty. In a refinery in which a complete line of petroleum products is prepared, metal temperatures will be encountered that range from -70 deg. F., and lower to about 2,000 deg. F. Over this entire temperature range, nickel is an important alloying element, and at the lower and upper ends of the range it is particularly applicable.

Let's follow the path of nickel through a typical oil refining process. It first appears at the top of the oil well, for oil is pumped through pipes from the well to the refinery. The pumps are operated by Diesel engines, which have numerous nickel steel and nickel cast iron parts; and nickel alloys are used for valves and valve trim in the pipe line system.

At the refinery oil goes first into storage tanks which are fitted with Monel gauges and valves trimmed with Monel. Next it goes into a pipe still, where it is heated until the more volatile portions are vaporized and then, in the form of vapor, it goes into a bubble tower. The less volatile residue from the pipe still operation frequently is subjected to a "cracking" process at higher temperatures and pressures in a similar still

which may have stainless steel tubing containing 8 per cent. of nickel and the chances are it has nickel alloys in valves and valve trim.

The gas oil which is to be converted into heavy fuel oils and "cracked" gasoline, passes from the bubble tower into a pipe heater similar to the pipe still and including stainless steel and other nickel alloy parts. From the pipe heater it passes into a reaction chamber, then to an evaporator and then to a bubble tower. Ni-Resist and other nickel alloys are used for various parts, including valves, trays, etc. The purpose of this part of the process is to reclaim more gasoline, and to separate heavy fuel oils from unconverted gas oil which is returned to go through the process again.

### THE BUBBLE TOWER

The bubble tower is perhaps the most interesting item in the refining processes and a knowledge of the principle on which it works is essential to a correct understanding of the refining industry. It consists of a high tower into the bottom of which the vaporized oil is forced. Now it happens that various portions of petroleum vaporize at quite different temperatures, and these gases condense to liquid at other temperatures. When you put a mixture of fuel oil and gasoline vapor into an upright pipe just cool enough to condense the fuel oil, the gasoline remains in the form of vapor while the fuel oil turns to liquid and fills the bottom of the pipe. Thus you can remove the gasoline vapor from the top, cool it a little more and have gasoline; and you would be doing, in a simple way, just what the bubble tower does—that is, separate the different kinds of petroleum products.

### GET FIVE GRADES

The difference is that though the principle is simple, the equipment to make it work is rather involved for there are five important grades of oil (counting gasoline) to be separated in the bubble towers. Thus the oil comes from the pipe still into the bottom of the bubble tower in the shape of warm gas. The first part of this to cool and turn to liquid consists of "heavy bottoms," which remain as liquid on a series of trays, one above the other, at the bottom of the tower. The trays are fitted with funnels which permit the gases not yet cool enough to liquify, to pass on up the tower. In other words the gases pass through what amount to sections of pipe projecting vertically through each tray. These pipes, incidentally, are topped by hoods, known as bubble caps, which turn the gas down again, so that it has to bubble up through the liquid oil on each tray.

### GET GASOLINE LAST

The next grade of oil becoming cool enough to turn liquid, is that which ultimately goes into heavy fuel oil. The next is raw kerosene; while at the top the gasoline passes out, still in the form of gas, to be condensed in a separate cooler.

The bubble tower employs considerable nickel cast iron for bubble caps and trays, and Monel is sometimes used to protect the top of the tower and the inlet and outlet nozzles where there are especially corrosive conditions.

All the oil and the gas coming from the

bubble tower passes first through a condenser or cooler, which in one type may be fitted with Ni-Resist pipe and cooling sections, and in another with copper-nickel tubing containing 30 per cent. of nickel.

From the cooler the gasoline and the kerosene pass through devices which "wash" them with water and various chemicals, after which they are ready for use. This cleansing equipment includes Monel valves and Ni-Resist parts.

### NICKEL IN CHILLING

The part of the petroleum which goes into lubricating oils passes from the bubble tower into an agitator where it is treated with acid, caustic and water. The agitator has a Monel valve which resists the corrosive action of the various chemicals. The next step for this grade of oil is to chill and then to filter it in order to remove wax. Nickel steel is used in the chilling apparatus because it is capable of withstanding the effects of low temperatures and does not become brittle when the thermometer drops below zero. Nickel cast irons are also used. Finished products from this grade of oil include wax as well as lubricating oils.

The "heavy bottoms" from the bubble tower follow two lines of processing. Some go into an asphalt still and are made into asphalt. The rest pass through a coking still, the product of which is petroleum coke. In these processes we again find nickel alloy equipment.

Large amounts of nickel alloys, including Monel, pure nickel, nickel-clad steel, Ni-Resist and stainless steels are used in the increasingly important manufacture of synthetic organic chemicals as by-products of oil refining.

### DON'T LOSE MUCH

The efficiency of oil refineries, to which nickel makes such an important contribution, can be judged from the fact that out of every 100 gallons of oil refined, only three are lost. Forty-four gallons become gasoline. Thirty-six make fuel oil. Kerosene accounts for six gallons, lubricants for three gallons, and miscellaneous products such as coke asphalt, paraffin, wax, road oil, etc., make up the remaining eight gallons.

Here is a great industry in which nickel helps to do the heavy duty work for the improvement of civilization—a far cry perhaps from its use in ornament and decoration which the public sees, but nonetheless an important job when we realize how vital is oil in modern life.

## Wrote Articles On ORCO Operations

Meet Ken Clark, who wrote the very interesting and instructive articles on

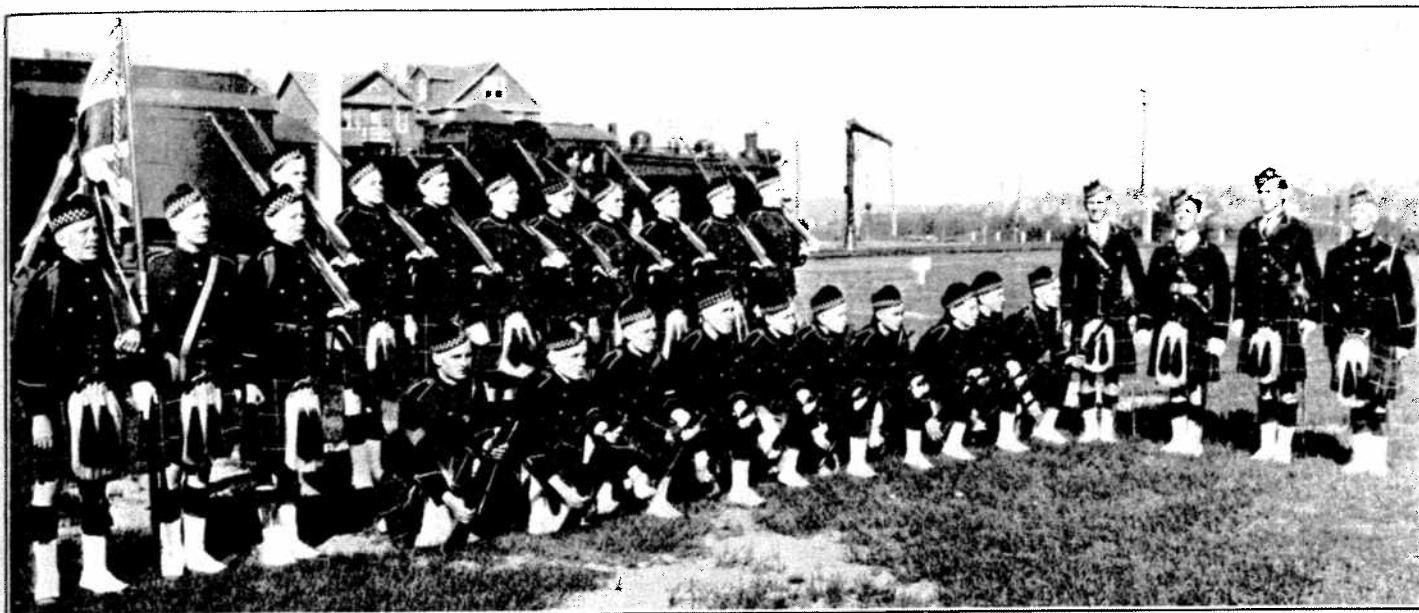
Ontario Refining Company operations, the last of the series appearing in the May issue of The Triangle.

As we go to press Ken is preparing to leave on a holiday jaunt to New York, Baltimore, and Philadelphia, where he will combine pleasure with trips through the plants of some of the large industries.

Triangle readers will hope he picks up pointers for further articles from his well-trained typewriter.



## New Colors Presented to Cadets



Donated by INCO, handsome new colors were presented to Copper Cliff Highland Cadet Corps by Mrs. Donald MacAskill in a brilliant ceremony in Stanley Stadium, the night of June 4.

Parading smartly and carrying themselves with fine military bearing, the scarlet-tuniced Cadets, 68 strong, won high praise from the reviewing officer, Major H. P. E. Phillips of Toronto, and from Sergeant-Major John Young of the R.C.R.'s.

Particularly effective was the memorial service in which a wreath was placed on a large white cross brought to the centre of the Stadium.

Following the inspection, the Cadets attended a banquet in their honor in Memorial Community Hall, during which Vice-President Donald MacAskill expressed the pride of the district in their accomplishments, and warmly congratulated Lieut.-Instructor Barnes. Special prizes were presented to Capt. Hickey, Cpl. Bob Keast, and Cadets Arthur Wulff and John McCullough. Rev. P. F. Bull, of Sudbury, was speaker of the evening.

### AT PARRY SOUND

On June 10, the special platoon of the Corps went to Parry Sound to assist in the annual inspection of the Junior Corps there, at the invitation of Principal H. Tait of Victory Public School. Lieut.-Instructor R. C. Barnes and Capt. Orville Hickey were presented with fine souvenirs of the occasion, and the Corps with a new flag.

Triangle's photo of the special platoon, just before entraining, shows: standing, left to right, Cadets John Pakkala, John McCullough, Jack Hickey, Wilfred Ripley, Bob Keast, W. Abbott, Morley Ayers, Grant Morrison, Harold Dunn, Harold Keast, Wilmer Hughes, Norman Ripley, Lieut. Richard Coleman, Capt. Orville Hickey, Lieut. Allistair McPhail, Lieut.-Instructor R. C. Barnes. Kneeling, left to right: Cadets Eddie Johnstone, Allistair Finlayson, Sidney Smith, Ross Ferguson, Sidney Linton, Don Plaunt, Douglas Gathercole, Ronald Gourley, William Barnes, William Dopson.

## Physical Culture Club

Some of the members of Copper Cliff Athletic Association's Physical Culture Club, in a photo recently posed for Triangle. Gathered from the different INCO plants, the Club has had a very successful first season, and its members are much in demand for boxing and wrestling exhibitions in the district. Great credit is due the two instructors, Hugh Craig in boxing and George Black in wrestling, and also the "fathers" of the Club, J. W. Garrow, President of the C.C.A.A., and Chief of Police James Ramesbottom. The group, left to right: back row, Alf Ladderout, Nick Collucci, "Squirt" Falconi, Bert Williams, Primo Condotti, Joe Nykoluk, Tom Thorpe, Jerry Ferguson, Bill Hall; second row, H. Craig, Alex Chornley, Bill Forbes (1937 Ontario light heavyweight wrestling champ), J. W. Garrow, Chief Ramesbottom, Mike Miller (1937 Manitoba featherweight boxing champ), Dan Egneff, George Black; front row, Cecil Fielding, Bill Olaky, Bert Houle (1937 Intercollegiate lightweight wrestling champ), Ernie Hoffman, Nick Choma (1937 Ontario featherweight wrestling champ), Carmen Fielding. Familiar faces missing from the group, Ole Olsen, Dolph Beaudry, Matt Brady, Jack Lown, Paul Matvinko, Bill Matthews.





# "Doc" McCauley Retires After 32 Years of Service

The hand that deftly wielded the scalpel is busy these days baiting fish hooks. The eye that was quick and sure in detecting signs and symptoms is searching the woodlands, keeping track of George Hudson and other week-end camping cronies.

Dr. W. A. McCauley on May 31, wound up more than 32 years as chief of INCO's medical staff, and is shaking off indifferent health with a well-earned rest at his Lake Penage island retreat.

Of an evening, back from the daily fishing trip in one of his fast speed boats with Hjalmer, his guide of several years whose father was an INCO employee for a quarter of a century, the Doc cheerfully checks over an enviable string of beauties. Many a local fisherman would give a great deal to know the waters where this veteran sportsman does his casting, but he keeps them a fondly cherished secret.

## BY THE FIRESIDE

Things carefully stowed away for the night, the Doc settles down in his favorite armchair. A cheery driftwood fire blazing on the big hearth, a glass of smooth "pre-war" at his elbow, and one of his 17 pet pipes puffing satisfactorily, he does a bit of reminiscing.

In the 29 years since he established his camp on Penage, he has brought many unique souvenirs of both his profession and his hobbies to his cosy cabin. At least a dozen pairs of antlers are tacked above the fireplace, and on the mantel is a miniature

dispensary, with bottles of many medicines for treating the settlers who come regularly to him for help.

A pair of birch bark slippers and a pack basket, he recalls, came to him as a token of appreciation from an old lady who used to live near Grassy Lake. At 70, crippled with rheumatism, she came to his cabin and just made her home there until her suffering was relieved.

He has a fine pair of snowshoes an Indian from the Naughton Reserve gave him. A blow on the head, received during a pow-wow, had left the young brave subject to epileptic fits, and he came to the Doc's cabin for treatment.

## AIDED ALEC BAPTIST

Another Indian from the Naughton Reserve, Alec Spaniel, who has since gone on to the happy hunting grounds, had a bad abscess in his hand which the Doc fixed up for him. The next winter, hunting on the Gaspe peninsula, Alec shot a seal, and returned proudly to present his medical benefactor with a beautiful pair of sealskin slippers. Others in the district will remember Alec, a tireless hunter and guide who could pack 300 lbs. on his back over tortuous trails.

Anyone who wonders about romance in the Doc's life should see the intricately woven wicker basket which he prizes greatly. It was given him by old Gemokama, wife of the former chief of the Naughton Reserve, who came originally from the French River Reserve. When she was 115 and apparently in the bloom of second girlhood, she asked the Doc to marry her. He gently but firmly refused. Then she sought Hjalmer's hand. But Hjalmer dodged the issue also. She died a year ago last winter, probably of a broken heart.

These are a few of Dr. McCauley's happiest memories of his lifetime of service in the North. He had a conspicuously successful career as chief of staff at Copper Cliff, and many of his cases would have received prominent attention in the Medical Journal, but he gets his deepest satisfaction from the gratitude and loyalty of the hundreds who have found their way to his cabin from back in the bush, and who have received relief through his science and skill.

## TOOK CHARGE IN 1911

Graduate of the University of Toronto, class of 1902, Dr. McCauley was on the staff of Toronto General Hospital until 1905, when he came to Copper Cliff as Company surgeon. When the Copper Cliff hospital was destroyed by fire in 1910, temporary services were established in the Orange Club for two years while the present thoroughly modern 35-bed institution was under construction. During this period—in 1911—Dr. McCauley was appointed superintendent of the hospital, a post he held until May 31, 1937. His staff and services were moved into the new building on January 1, 1913.

He pioneered the early days, gradually expanding INCO's medical service to keep pace with the steadily growing Company, and always maintaining it at a very high standard. He lays down the responsibility of a big job.

Not only in Northern Ontario was Dr. McCauley a pioneer, but also in the development of modern methods in his profession. For instance, on file at Copper Cliff Hospital are two X-ray photos. One of them was taken more than 20 years ago,



"Bunny," the tame deer on "Doc" McCauley's island, whispers her private opinion of the photographer to her master. Without any coaxing "Bunny" will step nonchalantly into a 12-foot canoe and go for a ride on the lake.

and shows the right hip of Alex Pakkala. As a boy of six years, Alex was partially buried in a sand pit cave-in, and suffered a compound fracture of his hip. Treating it by internal fixation, Dr. McCauley cleverly repaired the fracture with a steel pin, which the X-ray photo clearly shows in its place. Today Alex is an INCO employee, doing his full day's work in Copper Cliff Smelter. He has always had 100% function of the fractured member since it was treated. And only in the past four or five years has the method then devised by Dr. McCauley become popular in the medical profession. He was well in advance of the modern school of thought.

Throughout the North extends his reputation as an angler and hunter, and as one of the enthusiastic Nickel Belt sportsmen who did not rest until Sudbury Cub Wolves brought back the Canadian Junior hockey championship in 1932. Nobody was more keenly delighted than he at the double triumph of INCO teams last winter.

In his profession he is regarded as an eminently sound authority. Whether or not he will return to active or consulting practice, once he has recovered complete health, he is not yet certain.

## MANY PRESENTATIONS

On the occasion of his retirement, Dr. McCauley was the recipient of several handsome presentations testifying to the esteem in which he is held. Old friends and officers of INCO feted him and gave him a grandfather clock, Vice-President Donald Mac-Askill making the presentation. The Company medical staff made him the recipient of a chest of Coronation silver. Nurses of the hospital, with former matron Miss Ivy Reynolds, presented him with an occasional chair and ottoman. The hospital staff gave him a reading lamp.

An absorbing interest of his retirement will be the careers of the younger doctors who have worked under him. His own contribution to humanity unstintingly given, he will watch their progress with keen delight.

**Frood:**—Two successful dances have been staged by the Welfare Association, at which everybody had a rip-snorting time. The second affair, on June 9, accommodated the opposite shift to that free for the opening party on May 26, and President E. Baker was in charge of the door with the entertainment committee of McGinn, Lawton and Clarke assisting. Secretary E. Dickie did a nifty master of ceremonies job in introducing the crowd. Another of these popular parties is planned for the near future.



It's catches like this that have built up "Doc" McCauley's reputation as an angler. Last summer he pulled out this big one, over 14 pounds, reportedly the largest pickerel ever caught in Lake Penage.

## RECALLS HISTORIC RACE UNLOADING CARS OF MATTE

**Port Colborne:**—The worst experience Finley H. Lymburner ever went through on the lakes during his years before the mast was one night in 1921 aboard the good ship Ben Maple.

Taking on a cargo of flour for Buffalo, the Ben Maple was moored securely to the dock between the Maple Leaf mill and elevator here, but that didn't prevent a very large and hectic evening. There are many around Port Colborne who'll recall the night of which he speaks, for it was marked by one of the worst storms in local history. The wind at times reached a velocity conservatively estimated by Lymmie at 100 miles an hour, and the seas broke so high above the breakwater that they smashed the glass in the top of the lighthouse. The dock was under water, and torrents poured in and out the doors of the mill.

### SAVED A CRACK-UP

Tossed and buffeted by the battering waves, the Ben Maple yanked and strained at her moorings throughout the night, and it was only heroic work on the part of her crew that kept her from smashing up against the cement wall of the dock. Captain F. H. Lymburner worked along with them, and will never forget the back-breaking labor, the hours of uncertainty, and the satisfaction of finally nursing his craft through the gale.

Now assistant superintendent of the anode department at INCO's refinery, he stepped out on a loading platform at the

time of 55 minutes to win by a comfortable margin. It was the hardest hour's work they ever did in their lives, but under the circumstances they thoroughly enjoyed it.

Born at Lion's Head on the Bruce Peninsula on June 27, 1897, Lymmie attended public school there and at Midland, obtained his matriculation at Port Elgin, and spent two years in the mining course at Queen's. During his school years he sandwiched in about a year and a half of work at Copper Cliff and Creighton.

### SERVED WITH NAVY

He served in the Great War with the navy, on a mine sweeper which patrolled the Atlantic and North Sea. After a hard bout with pneumonia at the end of the war he had to spend eight months in convalescence, then signed as second mate on an Imperial Oil tanker plying between the Gulf of Mexico and St. John.

In December of 1919 he joined the INCO force at Port Colborne, remaining there two years and then going back to boats. Until 1933, with the exception of a one-year interval when he operated a drug store at Font Hill, he skippered Canadian Dredging Company tugs on the lakes. Then he returned to the Refinery.

At Font Hill in 1926 he was wed to Thelma Douglas, of Welland. They have two daughters.

### LIKES BOWLING IF—

In the earlier days he played a good stick at lacrosse, and carries a scar as a souvenir of a hot game organized at North Bay by Mike Rodden's brother, J.J. of Haileybury. Lymmie was working at Creighton at the time, and went down to the Gateway City for the match. Now he likes to go fishing, play bridge, or shoot golf. Also, he says with a suggestive glance across his desk at Stu Augustine, he likes to bowl whenever he can find tough enough competition.

## Plan Revival Of Horseshoes

**Copper Cliff:**—Among the numerous activities of the Employees' Welfare Association this summer will be promotion of softball, particularly for men not already included in the district leagues. The Association has entered a line-up in the Royal Trading loop, and will have a strong club in the Inter-Association schedule for the J. W. Gemmell trophy later in the season. In addition, the Association hopes to stage for its older members a revival of the good old game of horseshoes.

The first Association smucker was a decided success, and it is intended to stage another entertainment for employees who were on shift work that night and had to miss the party.

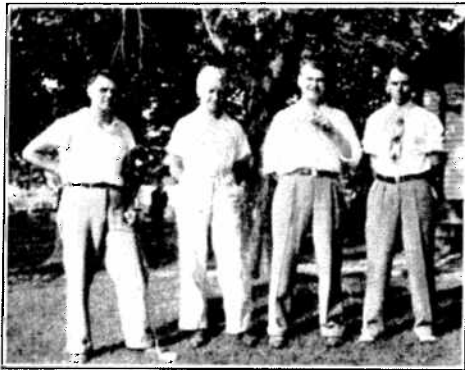
Officers and directors of the Association are: A. E. Prince, president; G. Tel'ord, vice-president; H. Gathercole, treasurer; W. B. Allen, secretary; W. Becket, H. McGinn, P. Stewart, H. Grannary, E. Collins, G. Corf, J. R. McGarry, J. Griss, S. J. Godin, E. A. Wh'rsell, Ryan Lepage, Wm. Bryce, R. B. Rodgers, P. Cooney, L. Morris, E. Lawson, J. Weber, D. McDonald, M. Cavanaugh, M. McGrath, P. Heaphy.

## They're Good— They Admit It!

**Port Colborne:**—The A. A.'s Golf Committee of E. C. Lambert, W. J. Freeman, and Dave Cooper are lining up the season's activities for their pill-chasing colleagues. At least two tournaments will be held this summer, they announce. At one, those qualifying for the INCO Championship Cup will be selected, and at the other those qualifying for the John More Handicap Trophy.

### ISSUE CHALLENGE

In the meantime, here's the Port Colborne Stores Dept. foursome: left to right, Wm.



Wallis, G. C. Winger, J. C. S. Wilson, and V. A. Lynden. Modestly admitting that they can polish off any other departmental foursome within the INCO organization, they issue an open challenge. (Ed. Note: Any quartet accepting this challenge should take extreme care not to place any wager on the outcome. When money or other valuables are at stake, the Scotch characteristics of this man Wilson are tremendously aroused, and it is not only almost impossible to prevent him from winning, but it is also almost impossible to understand what he's saying while he's doing it.)

The P.C.A.A. temporary Softball Committee of W. J. Wincott and T. Christie have arranged for the entry of two Refinery teams in the town league, and a meeting is being called to organize a plant league.

## Frood to Stage August Field Day

**Frood:**—Although plans are not yet complete, the Frood Welfare Association intend to stage a gala Field Day sometime in August. With sports activities at their peak about that time, much in the way of competitive entertainment can be expected, and the Association is determined to present a program to surpass anything of its kind ever previously offered in the district.

Officers and directors of the Frood Welfare are as follows:

E. Baker, pres.; G. Wilson, vice-pres.; E. Dickie, sec.; W. Bates, treas.; N. Wade, F. Swartz, J. Facan, D. Sullivan, D. McDonald, J. Christien, W. Mallette, O. Chenier, H. Lindsay, J. McGinn, L. Cole, H. Maitland, E. St. Louis, W. Fellbaum, H. Clark, E. Moore, J. M. Matthewman, T. Dandy, G. Tilt, H. McGinn, J. Attle, P. O'Gorman, A. Lawton, B. Meredith, P. Koster, C. Bibby, D. Eoivin, G. French, J. Greig, A. Corri, H. Barrand.



plant for this Triangle shot. He has always had a strong partiality for loading equipment ever since the day in 1920 that he, Bill Freeman, and "Squeaker" Peterson challenged Harry Roe, Ken Mytinger, and Fred Stedman to a race unloading two 50-ton cars of matte from Copper Cliff.

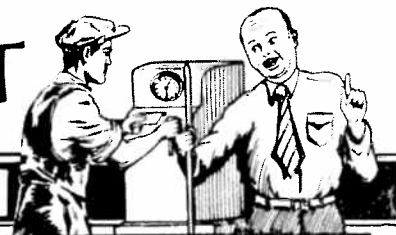
### DREW BIG CROWD

A topic of inter-departmental speculation for days in advance, the race drew a big crowd and many a hefty side bet was placed on the outcome. Of the two cars, the Lymburner-Freeman-Peterson combination chose the one with the most "fines" in it, while their opponents were content with the shipment containing larger chunks of matte. Lymmie and his team unloaded in the fast

# PUNCHING OUT

with

## JOE the DRY MAN



¶ Robert Tweddle, one of the Copper Cliff machine shop boys, thinks a dog show would be a popular stunt. He says there are many INCO employees with high-class pooches who would be glad to exhibit them. Anybody who is interested might drop me a line, and if enough dog-fanciers are discovered, maybe we can get somebody to organize a pooch parade.

\* \* \* \*

¶ They tell me that the following are some familiar scenes about Levack these days: "Mac" McCrea pretty proud of his new uniform; "Gill" Sauve dashing around on his new motorcycle; Jimmy Smith looking for the dog that walked over his garden, and Mrs. Smith wondering why it took Jimmy so long to get a pail of water; Doug Brown, the mighty nimrod, looking for bears; Doc Thompson, another mighty nimrod, telling about the big ones he is catching; Mr. and Mrs. E. St. Germain accepting congratulations on being the proud parents of the first child born in Levack since the mine was reopened, a daughter on June 3.

\* \* \* \*

¶ Leaving to make her home in Hamilton, Mrs. Steve Conick is putting up for annual competition a trophy to be awarded to the Nickel Belt League performer who is voted the cleanest player in each season. The trophy is in memory of her husband, whose tragic death removed a fine athlete and sportsman.

\* \* \* \*

¶ When Mr. and Mrs. Evan Jones, of Copper Cliff, decided on just a quiet little party to celebrate their silver wedding anniversary June 4, they did not reckon on Ken Clarke, who thought the occasion warranted some hilarity. He spoke to his friends in the Pipe Band, who arrived at the Jones home about 11.30 p.m., complete with instru-

ments, and from then until early morn made the welkin ring. Neighbors of the Jones, yanked from the arms of Morpheus, must have thought they were at the Banff Highland Gathering.

\* \* \* \*

¶ Fortune follows fame,—at least so it certainly seems to us unfortunate mortals to whom Lady Luck always turns a cold shoulder. The Caswell boys at ORCO certainly know the touch of her magic wand, though. Last summer Borden picked off a V8 in a prize draw, and now Colin wins a consolation prize in the Irish sweep.

\* \* \* \*

¶ I hope the Caswell boys will consider themselves officially invited to the housewarming party I'm giving on the night of July 1st, after the draw takes place for that nifty \$4,000 bungalow the Lions Club are raffling off. We'll get together and compare our systems.

\* \* \* \*

¶ These be the days of fish stories, and if all reports are true we have some of the best fishermen in the world within the INCO ranks. Three Copper Cliff rod-wavers who certainly know their stuff are George Norman, Chick Cechetto and Jim Parlee. Among the ORCO disciples of Isaak Walton who get results are H. Shoveller, J. Crawford, R. Snider, Warren Koth, J. Duncan, and J. Bischoff, as well as that group whose picture appears in this issue.

\* \* \* \*

¶ Although I naturally sympathize with him, nevertheless the joke was on one of my brother dry-men the other day. Assigned to clean the big wash-basins upstairs in his dry, he hustled ahead with his job, and not until he was finished did he realize that he was downstairs and had polished up the wrong set of basins. Since the two floors of his dry are much alike, it was an easy mistake to make. The regular downstairs man held out on him for quite a while, but finally agreed to go upstairs and do the basins there. Since then he has been taking a very careful look around him before he starts a job, to make sure he's on the right floor. It would be just too bad if he started out to wash the windows and got into the reverb building by mistake.

\* \* \* \*

¶ Prior to his departure for Aldermac, where he is now mine supt., Charlie Sheehan was farewelled by a big party of his friends. In his eight years at Frood, Charlie made a host of warm friendships with his genuineness and sincerity, and he will be greatly missed.

\* \* \* \*

¶ Congratulations to the boys at the ORCO Busy Bee, otherwise known as the Silver Refinery, on their flower garden. A little initiative, along with some co-operation between management and men, brought a real beauty spot to brighten working hours.

\* \* \* \*

¶ Jim Croal and Jack Taylor, of Copper Cliff, are away seeing the world through a porthole. They plan to out-Sinclair Sinclair in their globe-girdling jaunt, and may write a book about it when they return. Last reports had them bound for the West Indies.

\* \* \* \*

¶ Joseph Ferenac recently returned to

Frood after a visit to his old home in Jugoslavia. Joe was born in Ferenci, where his father and mother and family are still residing. He found that the old three-acre homestead had just produced 800 quarts of wine for his benefit, so he settled right down to a happy holiday. Later he visited France, Switzerland, and Austria.

\* \* \* \*

¶ Tommy Heale, of Creighton, was giving the upstairs of his house a coat of water colors, and in order to do a 100 per cent job, removed the stovepipe running from the kitchen range through a bedroom to the chimney. I suppose Mr. Reedy let fly with his curfew unexpectedly that night, because Tom hustled under the quilts without taking time to replace the pipe. Next morning he hit the deck with a bang, bounced, cracked his heels together, and galloped downstairs to get the fire going. The result was disastrous. Too bad you weren't burning hickory, Tommy,—you might have been cured.

\* \* \* \*

¶ Another wandering keyhole tells me that the real reason the O.H.A. wished to examine the birth certificates of the Copper Cliff Redmen during the playdowns was that they suspected the Tobin on Silverman's lineup was really Charlie Tobin of Frood, playing on his son's card. Probably Tobin the elder would have looked okay out there at centre ice, too.

\* \* \* \*

¶ Into Supt. Crandall's office at Creighton a couple of weeks ago stamped a big lad, just up from his first day's work in the mine,—new hat, new shoes, slightly soiled jumper, and a broad sweat-streaked face. He walked blandly in without knocking and threw himself into a chair with an enormous sigh and a hearty "How's she going." The reply was that everything was okay, and "How are you?" "Well," the lad said, "I'm not so good. I don't believe I like working underground. It's too darned dark down there, and when I work I sweat." However, I'm told that the big fellow has since become accustomed to these two little drawbacks, and is getting along fine at his job.

\* \* \* \*

¶ The always popular ORCO summer dance was bigger and better than ever, Freddie Sheridan and his terpsichorean committee giving the guys and gals a real night of fun and frivolity on June 11, at Moonlight Gardens. The big question now is,—how about another one? About the only drawback to a



## Bridge Champs

With a total score of 78,860 points for the three evenings of play, Copper Cliff No. 2 team became first holders of the beautiful rose bowl trophy donated by E. A. Collins for semi-annual Inter-Plant bridge competition. They will defend their laurels in the autumn. Some of the members of the winning team, pictured above, were: seated, Mrs. W. Nelan; standing, left to right, Dalton Ovens, W. Nelan, W. Beckett, R. Bell, R. Henderson, W. J. Ripley, J. Wulff.



## Record Catch

Mosquitoes and black flies notwithstanding, this ORCO group were thoroughly enjoying life when this snap was taken by E. Brunette. Shown in the picture are J. Shields, A. Denham, R. Blong, B. Graham and T. Moore, and the record catch they hauled in recently. Almost everybody at ORCO is reporting catches this size, but few produce pictures to prove their tales.



perfect evening, according to many of the sweet young things, was the absence of Clark Burlingham and Doug Cairns, well-known ORCO hockeyists, who are away out in North Battleford, Sask., taking a vake and explaining to the dust-dieting natives how Allan Cup champs are produced.

\* \* \* \*

¶ Things look good for the Wrigley Marathon at the C.N.E. this year, what with some Northern water babies already in active training. Lake Penage is reported to supply ideal conditions, a certain tall demon of the surf having been observed emerging from a midnight plunge there recently, although apparently the H<sub>2</sub>O was so chilly he had to keep his clothes on.

\* \* \* \*

¶ I have a letter from old friend Tom Hambley, a former Canadian Copper Co. employee who is now at North Bay, General Supt. of Algoma District of the C.P.R. He reads The Triangle regularly, and noticed that Albert McAllister of Garson, reminiscing in a recent issue, recalled running foot races with him when they went to school together in Copper Cliff. Tom says he wouldn't be so hot in a foot race today, but would be glad to meet his old chum in a game of bridge, which Albert admits he has never played in his life.

\* \* \* \*

¶ Garson recently bid goodbye and good luck to Al Cave, who has taken a position as a provincial mine inspector, covering Kenora District, after several years with INCO. A prominent figure in soccer, both as player and referee, and efficient secretary of the local branch of the Canadian Institute of Mining and Metallurgy, he will be greatly missed.

\* \* \* \*

¶ Since this is my first appearance in these columns it is also my first chance to congratulate Copper Cliff Skating Club on its first annual Carnival. This show was a very great credit to everyone either taking part or assisting in staging it. The performances of the members, considering the short time they have been studying figure skating, was little short of amazing. The costumes, the special scenic and lighting effects, and the choice of visiting artists, were all that could be desired. The Carnival will, I am sure, soon develop into one of the finest shows of its kind in Canada.

\* \* \* \*

¶ A big open air dance is being arranged by the enterprising Creighton Welfare Association for July 23. In connection with the event there will be a prize draw, in which several valuable awards will be distributed.

\* \* \* \*

¶ STOP PRESS: Pete Stewart of the Copper Cliff warehouse just phoned me to say he'd weighed a 14-lb. pickerel caught in Lake Penage on June 13, and that George Hudson himself was the expert on the business end of the rod. (McCauley's Island papers please copy).

\* \* \* \*

¶ Mr. Stork has much pleasure in reporting: a daughter to Mr. and Mrs. F. Elves (Copper Cliff) at Port Arthur on April 28; a daughter to Mr. and Mrs. John Fraser (Copper Cliff) on May 22; a son to Mr. and Mrs. Louis Scint (ORCO) on May 6; a daughter to Mr. and Mrs. Norman Crosbie (ORCO) on June 5; a daughter to Mr. and Mrs. Don Dunbar (Copper Cliff) on May 12; a daughter to Mr. and Mrs. M. Chomyshn (ORCO) on June 9; a son to Mr. and Mrs. Don Cowell (ORCO) on May 8; to Mr. and Mrs. J. B. Sutton (Copper Cliff) on June 12; a daughter; to Mr. and Mrs. R. Sinden (Frood) a daughter, on April 30; to Mr. and Mrs. C. Haskell (Frood) a son, on April 22.

\* \* \* \*

¶ Some recent marriages on which congratulations are in order: Fred Schell

## A Fisherman's Menu



(B) HERMAN THOMPSON, LEVACK)

Across the quiet lake the sky glows with the first flush of dawn, then the sun breaks over the horizon splashing soft colors on the evergreens and the still water. Rainbows of crimson and gold seem to play about the peaks of the rugged hills.

But it's time for breakfast down in the fisherman's cave! We have two lovely mountain trout. These are cleaned, put in a hot pan, and cooked until they're a golden brown. The potatoes are then cut up and fried until they are very brown. By this time the water in the pail is ready for making coffee, and soon its wonderful aroma is riding the crisp morning air. We sit on a nearby rock and eat to our hearts' content.

### DELICIOUS DINNER

After a full morning's fishing, we're more than ready for our dinner. We take two more mountain trout, very carefully cleaned. Then we get two partridge, when in season, clean them, and when the pan is very hot, put both partridge and trout in it. We cook them, covered, for about 10 minutes, then put a few slices of onion on top and cook a few more minutes while we make a dressing of bread, onion, salt, pepper, and a little butter, with which we stuff the birds and trout. This cooks, covered, for 15 minutes. Then we put sliced potatoes in the pan and, mixing a can of cream with a little flour, pour it over the partridge and trout, letting this cook for 25 minutes. With a steaming pot of coffee, dinner is ready to be served on a rock table. A tastier meal was never eaten. The flavor of the partridge goes to the trout, and every morsel is delicious.

### SUCCULENT SUPPER

More trout for supper! But you can never have too much of this delicious food. With these in the frying pan we place two bullfrogs' legs, and cook for 15 minutes, covered. Then the potatoes are put in whole. After this has cooked for 10 minutes, we add two red peppers sliced, with half a can of cream. Another 15 minutes of cooking, another pot of coffee, and we're all set for a splendid supper.

Let's go fishin', eh?

found that the circuit so far described is enough to produce a concentrate of sufficiently high grade, with low-grade tailing. With other types, however, it is necessary to pipe the feed from the thickener to a second grinding mill and then put it through a six-cell flotation machine which brings off any concentrate not picked up by the three-cell unit.

Dewatering of the concentrates on the pilot mill is done with vacuum filters 24 inches in diameter—not quite the equal of the great 14-foot revolving cylinders which perform this task in the big mill, but doing the job just the same.

### ON TO THE LAB!

From them come the concentrates, and these with careful notations regarding the flow-sheets which have been used, go to the laboratory for careful testing and checking.

The big plant uses about 4,000 gallons of water a minute, or several times more than the entire city of Sudbury requires for all its purposes, whereas "the five-and-ten" needs only 15 gallons a minute. But in flotation, as in other activities where moisture is a primary factor, results are not always measured by the size of the drink.

## Page Herman!

Borden Caswell of ORCO pulled out this string of speckled beauties on May 24th. If Herman Thompson, formerly the Underground Cowboy of Frood and now the Master Chef of Levack, had been along with his frying pan and his recipe book, Borden would have been treated to a nifty spread, right on the spot. Herman's fishing menu, in the accompanying article, proves that.

(ORCO) to Vera Plater, of Collingwood, on May 7; A. S. Robb (Copper Cliff) to Edna Pound, of Toronto, on May 22; Robin Swain (Copper Cliff) to Lillian Death, of Copper Cliff, on June 24; Phil Brown (ORCO) to Nancy Kells, of Niagara Falls, on May 14; Carl Hydman (Frood) to Evelyn Elizabeth Wilson, of Toronto, on June 5; Dr. R. V. Chapple (Sudbury) to G. E. Watts, of Wallaceburg, at Windsor on June 12.

\* \* \* \*

¶ Returning to golf after a layoff of several years, a certain geologist shattered all existing high-score records recently. His dip and plunge were much better than his strike, with most unfortunate effects on his projections.

## Miniature Concentrator

(Continued from Page 1)

a reasonably short time the best way to handle the different types of ore coming in from the mines, and thus "pilot" the big plant toward more effective operation.

The overflow of finer particles from the classifier is piped to a three-cell flotation machine. In two of the cells a rougher concentrate is produced, which is cleaned in the third cell. On "the five-and-ten" the flotation cells are operated by mechanical agitation, an impeller at the bottom of the cell stirring up the pulp so that the air-bubbles and reagents can pick up the concentrates and carry them to the top to be floated off.

### "BABY" THICKENER

The tailings, or fine waste, from the three-cell machine then go to a thickener, where most of the water is drawn off prior to further treatment. The pilot mill's five-by-five-foot thickener presents another striking contrast with the big mill, which has nine huge thickeners each 55 feet in diameter and 18 feet high.

With some types of ore it has been

## MINIATURES HIS SPECIALTY

**Creighton:**—If Herman Miron were walking down Elm St., and suddenly the garter on the right limb of the gent just ahead of him slipped its moorings and dropped down to flop unhappily around this gent's shoe with each succeeding step, it would not be the quaint humor of the situation that would appeal to Herman.

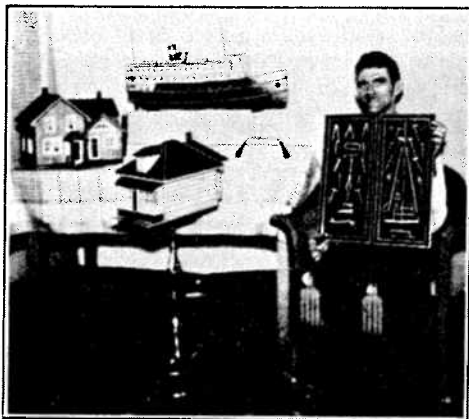
Instead, Herman's eyes would narrow with quick cunning. He would close the gap between himself and the self-conscious gent with two swift panther-like steps. He would swoop with the suddenness of an eagle, pluck the dangling accessory from its anchor, stuff it in his pocket, and then vanish around the nearest corner.

### HE MAKES THINGS

Garter in pocket, Herman would then hurry straight to his lair at 411 King St. East, where he would take out his prize and examine it with the fond appraisal of genius-on-the-loose. Not that Herman is the victim of garter-kleptomania, or anything like that. It's just that he has contracted the habit of making something from almost anything. Out of the metal eyelet on that garter he would probably fashion a miniature monocle. Out of its little metal bar he would likely make a tiny wrist watch. And from its elastic band and fastener he would probably bring forth anything from an airplane to a basket of turnips.

### HE'S NEVER STUCK

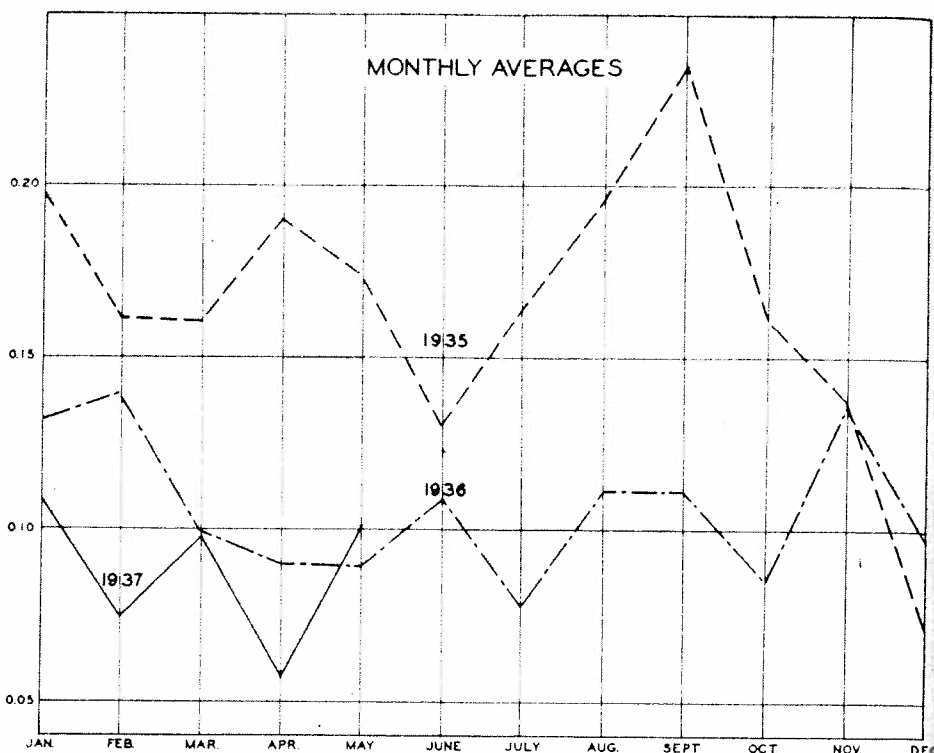
Triangle visited Herman at his home to obtain for its readers a glimpse of the handiwork of this master mechanic of models.



Here he is, photographed with a few of them. The boat and houses each took about a week of spare hours to make. Herman has turned out many of them for friends and relatives in the last seven or eight years. He's never really stuck for odd bits of material, because he seems to be able to make any scrap fit his purpose. For instance, the portholes in the boat are the big eyelets from a cast-off pair of mucker's rubber boots. The stand on which the smaller house is resting is really a smoker's stand, and was produced with old piping and some bits of a dismantled steam engine.

### PAINSTAKING CARE

The two sets of tools, in the case he is holding, represent hours of patient and clever work. On the right is a lumbering outfit, of which the canthook is about nine and a half inches long, the round-nosed shovel about four inches. On the left is a set of mechanic's tools such as Gulliver might have seen among the Lilliputians or Colleen Moore might have installed in her globe-



## May Shows Slight Increase

Dipping down to a point less than .06, the Mining and Smelting Division in April established the lowest monthly average on record of accidents-per-1000-shifts-worked. It was therefore hardly to be expected that May would equal this pace, and the Safety Department's records now reveal that the May figure was .101 accidents-per-1000-shifts-worked. This meant that the 1937 line for the first time crosses that of 1936, as is seen on the chart. The 1937 yearly average to date, however, is still considerably below the excellent figure set up in 1936, and there is every reason to believe that it will still beat 1936 when December rolls around. Employees everywhere in the Division are co-operating toward accident prevention more closely than ever before. Their continued co-operation will bring accidents to a new "low" in Company history.

trotting doll-house. The tiny monkey-wrench on one side is two and a quarter inches long, and was made from the bit that held the oil pan in place on an old Model T Ford. The larger one was fashioned from an ordinary bolt. The two pair of pliers, one pair just one and a half inches long and the other two and a half inches, were made from nails.

Each mechanic's tool was made in a vise and painstakingly filed from a nail or a bit of scrap steel. Each took about six hours to make. Mrs. Miron says she ought to know that, because she helped hold them all in the vise while her hubby did the filing.

### TEN YEARS A SAILOR

Herman gets a great kick out of his hobby. He got started on it when, as a lad of 14, he signed up as a sailor on the Great Lakes. In his spare time he perfected himself at manufacturing miniatures. Since last September he has been a fireman at Creighton Mine.

## FROOD ORGANIZES INTER-LEVEL LEAGUE

**Frood:**—One move made by Frood Welfare Association since it took over supervision of athletic activities has been the organization of a popular inter-level softball league. Equipment is being supplied through the Association, and the Baker Cup, a trophy presented by the Association president, is supplying plenty of incentive. Advance dope released by the publicity managers of the different teams indicates a lively league, to say the least.

## Welfare Assn. Active at ORCO

**ORCO:**—The first meeting of the Ontario Refining Company Canadian Employees Security Association was held April 16th, and the following officers were installed: E. Fosten, president; W. Collins, vice-president; H. Nelson, secretary-treasurer; T. Reynolds and W. Long, directors.

The membership campaign has progressed very favorably and at present there are 450 members enrolled. The first smoker was held in Community Hall, Copper Cliff, on May 17th and was a decided success. Boxing and wrestling featured the entertainment and the wrestling match between Clark Phillips of the Casting Building and Geo. Black of the Shops drew rounds of applause from the crowd. F. Benard and R. W. Waddington were guest speakers for the evening and their remarks were greatly appreciated. J. Clare of the Shops entertained the gathering with several accordion solos and J. Jaworski led in the community singing. After an evening of entertainment the 200 guests retired to the dining room.

There are countless occasions on which an employee, by using caution, can prevent injury not only to himself but to his partner.