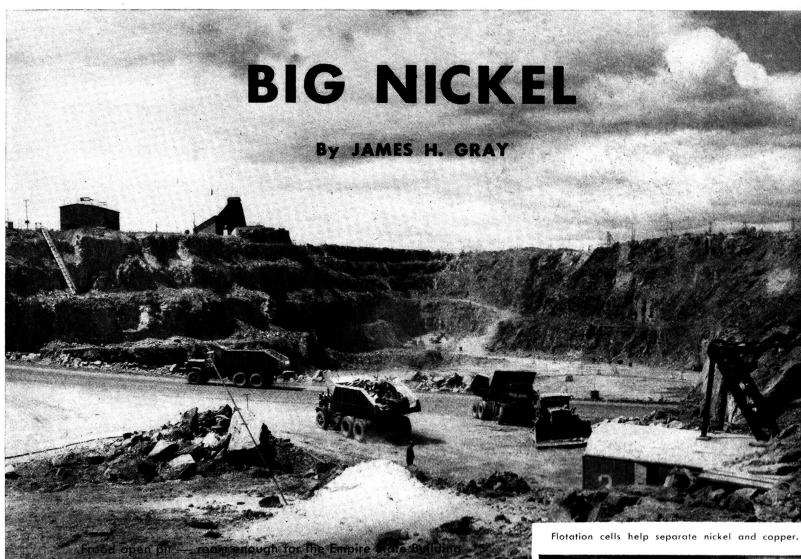
Maclean's Magazine, October 1, 1947



N TT & MERRILL

THIS brave New World of ours may be bringing the world-order architects down with the jitters, but no one is going to convince Mr. and Mrs. Job Public that it doesn't have the gaudiest surface glitter they have ever seen.

Never before have so many automobiles been loaded down so heavily with so much nickel plating. The stores are filling up with nickel-plated toasters and electrical goods, nickel-plated furniture, nickelplated utensils and fishing rods and gadgets of infinite assortment and complexity. And in tune with the glistening motif of the times, the merchandisers are lifting the faces of their store fronts and prettying them up with nickel plate, aluminum and chromium.

That's just the first verse. Under the hood of your new car, in the works of your new radio, in the kitchen of your restaurant and under the concrete floor of your cellar, in airplanes and plows, in power plants and in nail files, in skyscrapers and in dental bridgework, there is more nickel hidden away than you can shake a stick at.

World wars, peacetime industry, and the bumper on your car, all depend on a vast operation with a little name—Inco

All this glitter comes from a hole in the ground in Northern Ontario and a deposit of dark grey rock called copper-nickel ore. Strategically, this fabulous nickel deposit is one of Canada's greatest assets. Given a chance, Hitler would willingly have traded the whole Silesian basin, and thrown in Hermann Goering and Dr. Goebbels to boot, for a year's possession of the Sudbury basin. During the first world war the Sudbury ore yielded 200 million pounds of nickel for allied armaments. During the second it turned out more than one and a half billion pounds a year. The war is over, yet so great is the demand for nickel today that plans are being made for expansion of the Copper Cliff smelter, which is already the largest smelter of its kind in the British Empire.

More Than Meets the Eye

THE shiny stuff that gives the new cars their blinding glint isn't nickel at all, though it is often identified as such by the customers. It's chromium, or other plating material. Nickel is the lacklustre, silver-colored undercoating you see when, as sometimes happens, the chromium peels off; without it the chrome wouldn't adhere to the steel. Important though it is, the plating trade is not the biggest market for nickel. Top of the heap is the steelmaking industry, the mills and foundries that turn out the raw materials for railways and automobiles. The number of nickel-using alloys has now passed the 3,000 mark. By adding pinches of nickel, steel is made Continued on page 49

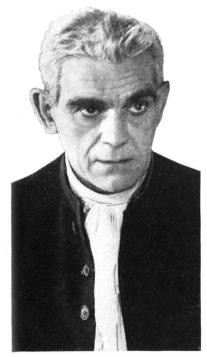


Concrete lunchroom protects miners from blasting.





ACTORS' FACES are extra sensitive



-that's why Boris Karloff shaves with soothing WILLIAMS

B^{ORIS KARLOFF, star of RKO-Radio's "Bedlam," says: "Removing make-up makes my skin tender, and I must shave closely. But my face feels fine when I use Williams. It lets me shave close as I like without irritation."}

Boris Karloff found the answer to getting smooth, *easy* shaves in Williams—and so can you. Expertly blended from mild, highest quality ingredients, Williams is made with a skill that comes from over 100 years' experience.

Shave closely as you like

Williams super-soaking lather wilts tough whiskers *completely* limp. It lets your razor work quickly and cleanly without pulling. Treat yourself to a tube of Williams. If you prefer a brushless shave, try the new Williams Brushless Cream.



NOTE-BRUSHLESS SHAVERS—Williams has the same luxurious shaving cream qualities in a new Williams Brushless Cream.

chemicals grab onto the valuable metals, which then come bubbling up to the surface to be wafted over the side by a revolving rubber paddle.

What doesn't rise to the surface, perhaps two thirds of the original ore, is quietly pumped out the back door to a tailings disposal dump, three miles away, where it is pushed out and forgotten. Eventually it dries out and some of it might even blow away to land on the freshly laundered shirts of the stope boss who blew it out of the ground in the first place.

For the recovered ore, called concentrates, there are several other beatings in the mill before it is dried out and sent off to the smelter, again over conveyor belts. There it is first persuaded to set itself on fire and most of the sulphur is roasted out of it. Then it goes to one of the nine giant furnaces. The temperature is whooped up to 2,500 degrees and the ore turns to liquid. The valuable metal drops to the bottom and then the furnace is tapped -the operation being repeated about 50 times a day at each furnace. The slag, containing mostly iron and silica, is spilled into 20-ton ladles and hauled away, 15 or 20 at a time, by an electric locomotive to the slag dump. On a good day the railway will toss 15,000 tons of slag on the pile.

By this time less than 10% of the 22,000 tons that came out of the ground is still around, still getting the heat treatment. It is getting to the point where it is mostly nickel and copper. The marriage is dissolved by adding bricks of sodium sulphate to the brew. This is the famous Orford process, without which there would be no Sudbury; without which, indeed, there very nearly was no Sudbury.

Let's get out of the smelter for a moment—it's no more than 10 minutes walk to the front door—and pick up a bit of history.

Sixty odd years ago Sam Ritchie was a wagon-building tycoon in Akron, Ohio. He bought a lot of lumber for his plants in Ontario and got interested in some iron ore deposits in Hastings County. To get the ore to market he had to build the Central Ontario Railway down to Trenton on Lake Ontario. But the first shipment showed that the iron was full of sulphur, and sulphurous iron ore is something steelmakers cannot use. The new railway had no traffic.

Enter the Devil

But having got into the railroad business, Ritchie got stubborn and decided to stay in it. He wandered up to Ottawa, probably looking for help, and went in to see an official in the Resources Department. He picked up a chunk of slaty-colored rock that was lying on a table.

"What's this stuff?" he asked, making conversation.

"Oh, that," said the official. "That's copper ore. Came in the other day from a couple hundred miles northwest of here. The construction workers uncovered it when they were putting the CPR through. They claim there is lots of it there at a place called Sudbury." "H-m-m-m," said Ritchie, think-

"H-m-m-m-m," said Ritchie, thinking fast. This might solve the problem of his freightless railway. Extend it to Sudbury and haul copper ore instead of iron ore.

Ritchie caught the train for Sudbury and came back with 1,000 acres of copper claims in his pocket. By 1886 he had organized the Canadian Copper Company, had a mine operating and contracted to ship 100,000 tons of ore to the Orford Refinery at Bayonne, N.J. Once again the first shipment almost ruined Ritchie. The Sudbury mining boom went down the drain. The copper ore was full of nickel. In those days nickel was to copper what sulphur was to iron ore—an unmixed disaster. The word nickel itself derives from

The word nickel itself derives from the German *kupfernickel* or Old Nick's copper, first applied to it 200 years ago by some miners in Saxony who discovered a deposit of copper cre which, when smelted, turned not the familiar red but white. To them it was useless, but years later, when a Swedish chemist finally isolated the white metal, he naturally named it nickel.

Having got stubborn about his railway, Ritchie got stubborn about his copper. Teaming up with Robert M. Thompson, who ran the Orford refinery, he set out to find a market for nickel and a simple process for separating nickel and copper.

Eventually Ritchie found one and Thompson the other. Thompson discovered that by adding sodium sulphate, or nitric cake and coke, to molten copper and nickel, strange things happened. The nickel sulphide settled to the bottom, the sodium sulphide combined with the copper and floated to the top.

The discovery of this process made Sudbury. That and the orders that poured in from the armament makers once Ritchie demonstrated the superiority of nickel-alloy steel over ordinary steel. In the flurry over nickel, Ritchie's railway was almost forgotten. Today it is a three-train-a-week branch of the CNR.

It might almost be said that International Nickel, today, is a monument to the stubborn refusal of Sam Ritchie to get out of the railroading business. It's quite a monument, so vast and sprawling that it is doubtful if any Nickel employee has seen it all. It is a corporation with \$300 millions in assets. It produces and markets 80% of the world's nickel. Its net sales run to \$130 millions a year and its profits in 1946 were \$29 millions.

In terms of physical plants and assets, the figures translate into the mines, the vast establishment at Copper Cliff and the Port Colborne refinery; a huge plant at Huntington, West Virginia, turning out nothing but Monel metal (one of the most popular nickel - copper alloys); plants at Bayonne, N.J., at Birmingham, England, Glasgow, Scotland and Clydach, Wales. It also operates batches of research laboratories wherever it has a processing plant.

As a consumer of other supplies, Nickel is an equally large potato. To timber its shafts and working stopes, Nickel has used 77 million board feet of timber in one year for pit props. Cutting that much lumber provides year-round work for 1,000 men in the bush. To keep the timber in place requires $2\frac{1}{2}$ tons of nails a day. Ten thousand tons of steel are used yearly in the rod mills that grind the ore to powder. The smelter devours 35,000 tons of Saskatchewan sodium sulphate and 6,000 tons of lime. In addition to operating its own railway system, complete with shops, it uses \$6 millions worth of service annually from the Canadian railways.

Busy People

Well, if Sam Ritchie will settle for that kind of monument, there it is. It's the only kind there is at the moment, for the guys who owe their jobs to Sam Ritchie's stubbornness haven't got around to anything else. We wondered about this and asked Dan Dunbar, Inco public relations man, why not.

"I guess they just haven't had time. This is the participatingest community on the face of the earth. Everybody is always up to something, usually three or four things at the same time."

Actually, instead of one community at Copper Cliff, there are as many communities as there are mines. Each settlement has its community hall and in the winter the lights in the halls are seldom out. The outdoor skating rinks are jammed with small fry. Teams from the district have an excellent record in national competition and each mine has its hockey team, bowling team, badminton team and baseball team.

Last year a two-night skating carnival attracted more than 5,000 spectators with its 200 performers. The skating club at Copper Cliff has been going for 11 years. It has its own full-time professional instructor.

One of these days it is confident that it will come up with a successor to Barbara Ann Scott. The artificial ice plant in Stanley stadium operated all through this summer for a skating school under the direction of Ferdinand Chatte. He came to Sudbury from Europe by way of Winnipeg and Vancouver.

Musically, the Nickel Belt can give cadenzas and obbligatos to many of the culture - proud metropolises of the country. The celebrity concerts sell out regularly. Every mining community has its own orchestra. Concerts are staged at the first hint of public desire. Amateur actors and actresses abound and when they can grab the stages from the boxers, wrestlers, dance bands and community parties, they give out with the living drama.

Visiting artists, coming to Sudbury for the first time, sometimes get thrown for a loss by the timing of their performances. Oscar Peterson, booked into Sudbury for a piano recital, dis-*Continued on page 52*



"Your little garden, O'Flaherty?"

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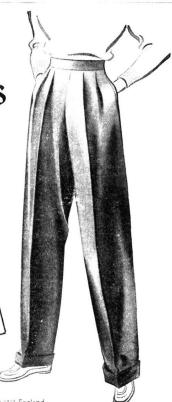


for slack days

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Continued from page 50

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covered that his performance did not start until midnight. But when he started pounding out the boogiewoogie the walls of the hall bulged with the enthusiastic faithful. The weird timing stems from the fact that mines operate on two shifts at the production end, while the mill, smelter and refinery are round-the-clock propositions. A midnight show, hence, will catch most of the miners off work.

Though name bands book regularly into Sudbury, the Nickel Belters provide most of their own entertainment. They fish, hunt, ski, curl, bowl, skate, sing, dance, golf, play bridge and tennis, lift weights, throw horseshoes, knit, sew, gossip, drink beer, go to church, fight, wrestle and play pool. Or they take over the Sudbury Inco club Tuesday nights and play chess. Or they sit home and collect stamps.

The champion stamp collector of the camp is Justyn Krysa of the Creighton mine. His collection of 45,000 stamps and covers has been appraised at \$20,000. Krysa, who came to Sudbury from the Ukraine in 1928, is secretary of the Canadian Ukrainian association in the Nickel Belt.

Krysa is a typical Nickel Belter in that he came from "outside." Sudbury was made by immigrants like Krysa. Every country of Europe is represented on the Nickel payroll. So is almost every state of the United States and all the provinces of Canada.

"If you're running away from some-thing," a chance acquaintance in a Sudbury poolroom pointed out, "you'd better stay away from this neck of the woods. It's the doggonedest place for bumping into people from your old home town. I'll bet there are guys here from every town in Finland, and most of them in Norway, Sweden and Czechoslovakia, too. If there's no one here when you get here, chances are there'll be someone in next week.

"You don't notice it so much now, but it used to be common for a couple of guys from some place in Russia or Poland or Germany to bump into each other walking down the streets in Sudbury. They'd let out a whoop, bang each other on the back and then get a celebration going. Boy, some of those guys could really celebrate!"

The next afternoon I had a date to go through the smelter. Don Dunbar turned me over to the assistant superintendent, a tall young fellow in his early thirties. Bob Saddington, it turned out, once lived a hundred yards up the street from my home in Winnipeg.

Like most of the young men who run the show, he came up from the bottom. His first job in the smelter was with a shovel and broom 12 years ago when he was taking his mining degree at Queen's University. When he got his sheepskin he came back to the smelter and has been there ever since.

Nickel Skyrocket

Already one of the largest of its kind in the world, "Inco's" big Sudbury smelter plant is nevertheless scheduled for expansion soon, to keep up with the growing world demand for nickel. That's a significant far cry from the second year after the last war when the whole operation at Copper Cliff and all the mincs closed down. It took years to liquidate the nickel surplus that was created by the end of hostilities. Nickel then had few peacetime uses. From Ritchie's first big order from the United States Navy, until 1921, the armament makers were almost the only nickel users outside the mints. In 1922 the company went out to create markets, to get nickel into stcel and copper used for consumers' goods. In five years it Maclean's Magazine, October 1, 1947



That's what every good homekeeper expects when she cleans the toilet bowl. But why not be certain? Let Sani-Flush do the cleaning. Sani-Flush also disinfects-assures you of true toilet bowl cleanliness. Its fast, thorough chemical action removes all trace of stain and film, leaving odorless freshness. No scrubbing. Just sprinkle Sani-Flush.

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relief and stop corns be-fore they can develop.

But—if you have corns, callouses or bunions— Zino-pads will relieve the

Remove Corns, Callouses You'll marvel, too, how the separate Medications

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pain almost like magic.



succeeded so well that International Nickel became a spectacular skyrocket on the New York exchange. Ultimately, it went the inevitable way of stockmarket skyrockets, but the basic markets that were being slowly acquired remained and were expanded.

Today the stuff is shipped out at the rate of six freight-car loads a day. With 45 tons of nickel in a freight car, there is still room inside for a couple of automobiles, a tractor and four horses. Forty-five tons makes a pile about the size of one ton of coke in each end of the car. A boxcar loaded full of nickel would collapse in a heap from the strain.

Sixty years after Sam Ritchie's railroading troubles began, history has completed a full circle. Nickel is now the prized metal and copper is the byproduct. But copper bulks large in International Nickel's operation. It sold 150 million pounds of copper last year compared with 201 million pounds of nickel. As byproducts it sold a million ounces of silver, 46,000 ounces of gold and 320,000 ounces of platinum metals.

This several million dollars worth of precious metal represents impurities in copper. To get rid of it requires still further pushing around of what used to be ore. From the smelter the molten, impure copper ore is ferried over to the refinery in giant soup cups and put through more heat treatment. Eventually it is cast into anodes three feet square and a couple of inches thick.

The anodes are hung vertically in acid-filled tanks. Between each one and the next is hung a paper-thin pure copper cathode. Electricity is turned on and the current takes the pure copper from the anode and deposits it on the cathode. In 28 days the anode has been reduced to less than half an inch in thickness, while the cathode has picked up the girth the anode lost. The gold, silver and platinum settles to the bottom of the tank in a black slime. Eventually the muck is collected, dried, boiled and out come the precious metals.

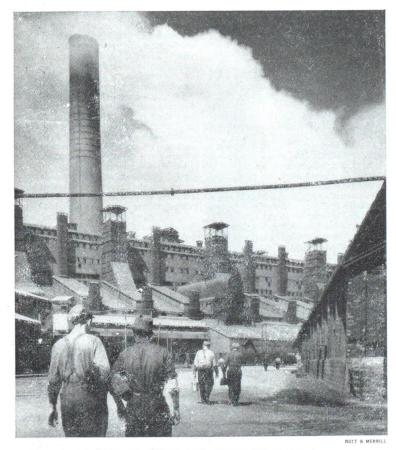
Given peace, plus full employment, and Nickel thinks it will get along. It can go on digging out 22,000 or more tons of ore a day for many years without exhausting its Sudbury deposits. Constantly improving mining and milling techniques have lengthened the life of the mines. Low-grade ore once regarded as useless now goes through the mill to profitable markets.

Wherever you go in Copper Cliff, from the stopes of the Frood mine to the front office, from the grinding mills to the smelter and refinery, there is evidence everywhere of the universal passion for trying something new. New techniques, new gadgets that seem to come straight out of Rube Goldberg, new ideas or very old ideas in new dress.

Above all, there are new men in new jobs. The conclusion that Nickel at the production level is a young man's job is irresistible. Fourteen years ago Jim Parlee was wondering, really, about the worth of his brand-new college diploma. It didn't seem to be very helpful to a mucker in a stope in the Frood. Today he is the superintendent of the gargantuan Copper Cliff Mill. There are literally hundreds of other men in their 30's in jobs of high responsibility in Nickel.

Where Opportunity Knocks

Executives seem to wear well in Nickel where ulcers are not an occupational disease. R. L. Beattie came all the way from an office job to the vicepresident's chair without noticeable physical wear and tear. Eighteen years as on-the-spot boss of Canada's biggest mining operation has done nothing to the color of H. J. Mutz's hair. A. E. "Obie" O'Brien, boss of the Frood



Going on shift at Inco's Copper Cliff smelter. Big as it is, there's more here than meets the eye.



want to know...

Not long ago, a young woman, just embarked on a business career, and for the first time giving the future a little serious thought, asked this question of a Mutual Life representative.

The Mutual Life man recommended a plan whereby, if she remained single, she could look forward to security and independence in later years, and if she married, her husband would find it simpler to provide for their joint future.

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CHANGING OIL? Add MOTOR RYTHM to it and your motor will sing a new youthful song of power and pep.

Why? Because MOTOR RYTHM immediately cleans out carbon and other harmful power-wasting deposits the modern, chemical safe way. MOTOR RYTHM will greatly increase your driving pleasure and save you up to 30% on gas.

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For extra swift action on carbon "buck" and "ping", also pour a small can of MOTOR RYTHM through your carburetor. It will help you break your *new* car in better and faster, too.



mine, could spot most policemen 20 years and walk them into exhaustion in half a day.

The idea that young Canadian scientists have to go the United States to carve out careers gets short shrift at Copper Cliff.

"I wish somebody would tell them about Nickel when they start thinking about heading south," Mr. Beattie remarked when the subject was raised. "Nickel can use them, lots of them. In fact we brought scores of college men into Copper Cliff this summer with the idea that they will like us and come back to permanent jobs when they complete their courses."

So nobody at Nickel seems too much concerned about the future. The armament and other industrial plants of Germany and Japan, once important customers, no longer exist and Russia, one of the greatest prewar consumers, has stopped taking Canadian nickel. To replace these customers Nickel is engaged in expanding its markets in the United States, particularly in the stainless steel and cast iron fields. Last year more than 40 million pounds of nickel went into stainless steel alone. The automobile industry, now Nickel's most important single outlet, is using more nickel than ever before, 75% more for plating than it did in 1939. New war-developed alloys are hitting the market. New techniques in processing and casting are being perfected.

No one will argue that either International Nickel, or nickel, has been an unmixed blessing to mankind. Indeed there are many people who take the dimmest view of International Nickel. The United States Attorney General has charged it with being a monopoly; the company has denied every point in the allegations and the case has not yet been taken to court and may never be. There are many Canadians who sincerely believe that the company sold too much nickel to Germany and Japan when the war clouds were gathering,

Stamp Crazy

Continued from page 17

avid collectors believe they have fairly well cleaned out Ontario and Quebec. Some collectors keep in close touch with building wreckers. The periodic house cleaning of old courthouses or long-established business firms has often turned up valuable finds.

One of Canada's best-known stamp collectors is Howard Cant, a druggist in Galt, Ont., whose fine collection is housed in over a score of volumes most of which he stores in a bank vault. When some time ago he heard that a venerable law firm was moving to new quarters, he offered to cart away the old discarded files at his own expense. The offer was gratefully accepted; and Howard Cant discovered stamps worth around \$800.

(Incidentally, while attending the Columbus Exhibition as a boy in 1892, he spent five dollars for a face-value set of the Columbian stamp issue commemorating the discovery of America, now worth over \$500. He still has it.)

Some of the most valuable Canadian stamps today were issued separately by the provinces before Confederation and a rich hunting ground exists on the two coasts. The five-cent Vancouver Island stamp is worth \$200 to \$300; the one-shilling Nova Scotia is worth around \$250; and the one-shilling New Brunswick considerably more.

An incident which occurred some 20 years ago is still mourned today by Canadian collectors. This happened when members of an old Toronto firm, exasperated at government charges of

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though the company points out that these sales were cleared with the Canadian and British Governments. There are hundreds of farmers in the Sudbury district who still regard nickel as the Devil's metal because of damage to crops by sulphur fumes from the refinery, although in great part these are now being used to make sulphuric acid.

The men who run the show are prepared to take up any criticisms and argue the company case until the cows come home. On no point are they more emphatic than on staff relations. They point to the pioneering the company has done in mine safety and the enviable record maintained for a low accident ratio. They mention the community halls, the hospital, the schools and recreational facilities that have been provided. They talk about the company's pension fund, now worth \$30 millions, and the housing accommodation that it provides. And, anyway, once the mines were unionized in 1943 the company bent every effort to getting along with the Mine, Mill and Smelter Workers Union. Despite widespread labor disturbances in the mining industry, Nickel's relations with the unions have been what Mr. Stanley called in his last report, "generally satisfactory." All its hourly rated employees are covered by union contracts now.

All of this boils down to the fact that a mineral that was virtually useless to the world only 60 years ago has built a virile Canadian community and been transformed into an industrial necessity which provides Canada with \$100 millions a year in sorely needed American exchange. It has added to the amenities of modern life in untold thousands of ways. Not even Nickel's severest critics have ever accused it of lack of enterprise in developing and promoting its product. It was a big day for Canada when Sam Ritchie decided to get stubborn about staying in the railway business. \bigstar

business tax evasion, burned all their correspondence records. Up till then, they'd never thrown anything away and stamp collectors knew it.

The company's files contained business communications from that period when no envelopes existed and the letter was folded over twice or thrice and then sealed with a stamp. The mail clerk of those days stamped the outer covering with the date received and the entire missive would be filed away for reference. Perhaps these ancient covers would have more than offset the amount of money the government sought to collect — but the partners were not stamp collectors!

Philatelists tell the perhaps apocryphal story how, some years ago, the old files of the New York branch of a Canadian bank turned up Canadian stamp treasures. The legend has it that a stamp collector was following the movers when he noticed letters dropping off to the street and found these bore rare Canadian stamps. He bought the wagon loads of "waste paper" and made himself some \$30,000!

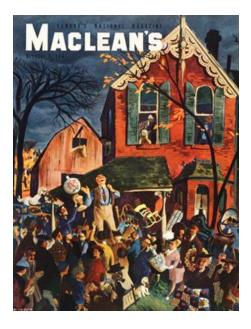
Gambling in Philately

Stamp values are like stocks; the price goes up or down—and the market can be rigged. Collectors and top dealers know which collector holds which rarities; but the despised foe of philatelists is the speculator—a nonphilatelist who puts away sheets of unused stamps that he hopes will later show a profit.

When these are unloaded on the market, stocked-up dealers may not want them and the flood depreciates

BIG NICKEL

MACLEAN'S | OCTOBER 1, 1947



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