The graduates we really need

This is the age of specialization; but is it the age of the specialist? This is a question foremost in the minds of thousands of young men and women about to enter university and select their course of studies for the next three or four years. How they answer this question—and their choice of course—will affect their future careers and livelihoods. Their answers are also a reflection of the values of the society and the school system in which they have been trained. (Some aspects of the school system are brought out in the article on page vis.)

In making their decisions, university freshmen would do well to take a close look at the real needs of industry and commerce where they will, in all likelihood, make their careers. They will find that the needs are not what they might appear at first glance.

The oil industry, for example, is one of the most technical and automated of industries. Its operations require the services of many professionals, technicians and specialists. But a closer look at this industry—or any major industry for that matter—shows that its actions and growth depend on decisions of a social and economic nature that involve much more than the routine use of the slide rule, the seismograph or electronic computer.

How Imperial regards the situation was stated by its president, R. R. White, to an audience at the University of Western Ontario.

"The problem is not that of getting skilled help in the old-fashioned sense," he said. "We want people who can think, people who understand the philosophy as well as the mechanics of their particular operation . . . If they are to go up to the top it is clear that their university experience should include a lot more than the mere techniques of their trade, important though those are.

Industry has found that generally it can train an educated man for a job, but it cannot necessarily educate the trained man. Many parents and students have not yet realized this. To them, the "training" phase of education is all-important.

Recently, in an opinion survey conducted by the University of Toronto during its current fund-raising campaign, respondents were asked: "What is the most important function of a university?" Just over 50 percent of non-university graduates named the training of doctors, teachers, engineers, scientists and other professions. Only 12 percent—or less than a third—said that fostering creative thought and research, and independent opinion, were the main purposes of a university. The answers of university graduates were in almost reverse ratios.

It is apparent that a majority of potential students and their parents should be doing more thinking about the real needs of industry and society. The successful leaders and decision-makers today—while they also may be technically-trained—are those who have a broad understanding and insight into humanity and society, both past and present.

As technical progress quickens, the problems of human relations will also increase. Future societies and industries will be more than ever need leaders who can relate the demands of technology to the needs of man.

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Cover: William Winter reminds us that it's school time again. One of Canada's finest artists, he is also a father who has put a daughter through school and has a son in high school—Penny is with the National Ballet and Stephen is in Grade XI.

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WHAT’S WRONG WITH OUR TEACHERS?

BY GEORGE ROBERTS
WITH ROBERT COLLINS

In the splintered and continuing debate on Canadian education there are many strong and divergent opinions. For a decade, few have spoken out more vigorously and constructively than George L. Roberts of Oshawa, Ont.

Robert, a Newfoundland, has been on the staff of Oshawa Collegiate and Vocational Institute since 1953 and its principal since 1956. But his driving energy, and consuming interest in the education of children, have taken him into a variety of extra-curricular jobs — local, national and international. He is past-president of the Canadian Teachers’ Federation; director of Ontario’s Teacher Recruitment and Service Foundation; a director of his district Children’s Aid Society; a member of the Canada-United States Committee on Education, and a member of the advisory committee to the Canadian National Committee for UNESCO. He was one of the organizers of the Canadian Conference on Education in 1958. Ten years ago Roberts stood somewhat alone with his candid assessment of his fellow teachers and our educational system. Today, after scores of public speeches and some 50 articles written for educational publications, he finds increasing support for his views — some of which we offer now as food for thought for all Canadians.

School teaching has been my profession — indeed, my life — for 25 years. As a teacher and principal, I have run the gamut of pupils, parents, school boards, inspectors and departmental officials. As an official of Canadian teachers’ organizations since 1935, I have met teachers in every province. I’ve studied them, addressed their meetings, written for them, read their publications and picked their brains at many a midnight session.

I am proud of my profession. Since the day I entered it I have never wanted to do anything else.

Which is why it is all the more painful to have to report the great irony of Canadian education today: too many of our teachers are simply not able to do their job — the job of sending children out into society with the best possible education. This is the job teachers want to do. It is the job that taxpayers, parents and students have a right to expect. But teachers are not satisfying anyone, least of all themselves. The fault is by no means entirely theirs. All of us are responsible. All of us must help remediate the situation.

What’s wrong with our teachers? Too little professional training, too little public respect, too little self-confidence and self-assertion. These are the major faults and, to some extent, they work in a sort of chain reaction. One follows on the heels of another and so our educational system is somewhat like a perpetually revolving door, with the hapless pupils caught in the middle.

To begin with, nearly half of our teachers are rank amateurs. They have less than the bare minimum of training that teachers’ organizations consider tolerable: senior matriculation plus a year of pedagogy. In all of Canada only 25 percent of teachers are university graduates; most of these are in second- ary schools. Yet, a teacher needs the fullest training to do his job efficiently and conscientiously. Nowadays a teacher must put in an average of 30 hours a week of classes (using teaching methods that the educational psychologists are making more and more complex), plus voluntary after-school tuition, and evenings spent preparing lessons, marking and extra-curricular supervision.

The inadequacy of teacher training is largely an emergency situation, arising from the postwar surge of enrollment. But the attitude behind it is not new. For a long time we have been buying our educational and professional services as cheaply as possible. As a result, the teacher in many areas today is regarded as a sort of second-class citizen.

Before the days of universal education the schoolmaster (whenever his training was one of the best educated — and most respected — individuals in the community, on a par with the town lawyer and doctor. Today many adults have university degrees and many teachers have not. Adults with no university education can never command high wages in industry. It’s no wonder the average parent tends to lock down his nose at the average teacher’s suggestions or advice, pertaining to his children.

Many school boards, for their part, regard teachers as hired hands. I realize the school boards are often harried by their own problems and subjected to public and political pressures. But the fact remains that they have the power to hire and fire and some of them never let the teacher forget it. (The situation has improved since my first teaching job, when I was given to understand I should not appear on the street when smoking a cigarette.)

Boards, too, pay part of the school costs from local taxation. But judging from their budgets — which often meet only the barest basic requirements — they are often more eager to satisfy the citizen as taxpayer than the citizen as parent.

School inspectors and supervisors, for their part, tend to over-supervise even experienced teachers; to check and cross-check, scrutinize and advocate. This tendency perhaps resulted from the large numbers of "instruction" teachers. But the supervisory people ought to draw a line between the professional teacher, who needs professional independence, and the amateur, who is not yet ready for it.

And on yet a higher level is the department of education — a hierarchy of civil servants directing the teacher. Although departments are staffed with experienced ex-teachers, too many of them seem to have lost it, indeed, they even kill the professional teacher’s point of view. As many teachers see it, departmental direction tends, almost inevitably, to be didactic and dogmatic, and also, because of its civil service nature, to be "safe." Of course, not all teachers follow this viewpoint to the letter, but most try to do so.

Partly because of these situations — and also because the teacher by nature is an introspective person — too many teachers do not respect themselves. This includes every man of the competent career people, the ces. I call "professionals." Outside the classroom they lack confidence, are painfully inarticulate and vastly humbled.

Not long ago a fellow teacher and I were guests at a service club dance in Ontario. No one made us feel welcome but my colleague was obviously ill at ease. Finally he whispered bitterly, "I suppose these people think they're charming, having teachers at their dance!"

In such an atmosphere of super-sensitivities, low prestige and inadequate training, it’s no wonder that teachers feel they are not accomplishing as much as they should at a time when their job was never more important.

Why so important? There are, to begin with, international reasons. If the western world is to survive, it must keep pace in the sciences and technology. And if we do not prepare our culture — our literature, art, philosophy, history and all the rest — then our library education embrace — what point is there in survival?

Here at home the teacher’s responsibility was never greater because —
through the failure of parents and church—men, women, and family life is disintegrating. More than 90 percent of our children today attend high school. In my school—and other teachers confirm my findings—more than one-third of these children come from homes broken by divorce, desertion or separation. Or from homes where death or full-time employment of both parents means that the parent or partner sometimes lose all semblance of control over their children. Years ago when fewer children reached high school, they were usually the children who wanted to be there, and "problem" students were less numerous. Today there are enough problem students to seriously affect the work and discipline of the school. Last year, for example, there were a number of catastrophic failures among my pupils in the mid-winter exams—catastrophic because so many of those who failed showed little hope of recovery by June. In checking into the failures we often found that both parents worked. Consequently, the children were on their own until evening. In some homes, admittedly, both parents have to work, but this hasn't altered the fact that the children—those who ought always to be our first consideration—and with no one to care for them. Let me stress at this point that I do not consider Canadian youth a bad lot. On the contrary, theirs is for the most part an extraordinarily promising generation. But teachers are not being given a fair chance to help prepare these children for the world. For example, too many students today have more money than is good for them. In my community—an average industrial city—many students drive cars, including at least one Cadillac. The safekeeping of wallets and watches during gym classes has become a headache; the wallets may be worth more than $75 as pin money. And there has been terrific pressure in most provinces for lowering of standards, so that a minimum number of students will fail. We are following the U.S. trend where, having created a welfare state of the body, they are now trying to create a welfare state of the mind. I believe every person is entitled to equality of opportunity, but I do not believe that all persons wish to try. Those in my right to opportunity and to respect of their personal worth.

The low standards and the increasing number of "problem students"—that one-third of the enrolment I've mentioned—create a classroom climate that left one teacher friend of mine "disturbed, disillusioned and dismayed." He had resumed teaching on invitation a few years ago, after a long absence. "The school was new and the equipment and appointments all that could be desired," he later wrote in a teachers' journal. "The staff was well-picked. The community was as enthusiastic about their new high school as a groom about his bride. Here, I thought innocently, is a chance to correct all the faults that I criticized in my seniors who had pointed out to me over a lifetime..."

"The joysides in the educational band wagon stamped into the room, made all the noise they could getting in their seats, thumped their books on the desks, slammed drawers, and then scraped the movable seats on the floor. We heard only about $1,000 a year. Not long ago I met the young head of the French department, in the province's average teacher's salary is in creation. But he made it clear that he was not to legislate on the job, having learned all that their limited vision shows them to be necessary. By my definition, the true professional teacher never ceases to seek self-improvement. He takes full advantage for his actions and does not need close supervision. He does not expect to work or be paid by the hour and makes his working day to the requirements of the job. His ultimate aim: to render a service to mankind.

Yet even such persons—and there are many—often hesitate to take a public stand on an issue for fear of criticizing their colleagues. School boards and department of education generally regard the "safe" teacher as the best teacher. I am fortunate in my board and my community. By speaking up honestly and making it clear that I have no axes to grind, I have never had to fear for my job. But I am convinced from my own observation that other teachers haven't found it so.

In most provinces I have noticed that departments of education appear to avoid choosing teacher-leaders for departmental appointments. In Saskatchewan, however, former teacher and teacher organizations are repeatedly selected for such jobs. I credit the difference not necessarily to governments but to the enlightened individuals in the Saskatchewan department. However, it is only fair to point out that some department heads can't obtain top men because they can't match the salaries offered by school boards in some of our major cities. I think, too, that participation in community affairs adds to a teacher's stature, and hence his effectiveness, in the classroom. More and more teachers—usually the experienced ones who don't have to devote all their spare time to improving their education—are aldermen, members of legislature, or members of public utilities commissions, parks and library boards. Incidentally, it was once illegal for teachers to sit on any school board or any municipal commission. Teachers' organizations have helped abolish that restriction.

Our organizations also led the drive for better salaries. The average high school salary in Ontario has more than doubled since World War II and is still rising. Salaries are vastly improved in some provinces for themselves and their employers. In the province's average teacher's salary is $5,000 a year. But generally the salary level has remained static in recent years. In 1951 Toronto hired some 40 university engineering graduates and paid them a salary equal to the lowest in pedagogy and sent them into high schools.

Teachers, through their organizations, are also trying to improve their training. The organizations sponsor study courses and make surveys and recommendations on the job needing to be done in schools. The Ontario secondary teachers' organization has $50,000 on loan, helping teachers take summer or winter training courses. In other provinces teachers' organizations are doing similar work. In other words, we recognize the shortcomings of our profession and are grappling with them. But we need help. Departments of education must realize that an incompetent teacher is not necessarily a dangerous teacher. School boards must judge the adequacy of our facilities, respect without supervision and support without spoon-feeding.

Parents must not expect us to do the whole job in school and eliminate home work; to give every pupil a course suited to his needs, interest and abilities, yet without this, the child is being robbed of the chance to report to the home exactly and clearly what the child is achieving and yet parents themselves. In some instances, I found the boy achieved by an unhappy home—and to do all this for all the children.

Why should any school and its teachers, be burdened with such numbers in an already overcrowded day? As one American educator wrote recently, there is a serious danger that schools will become "society's dumping ground, a vast refuse heap for any and every unwanted service or task that other social or governmental institutions and agencies find too tough to handle."

Canadian society must decide what it expects of teachers. Then it must add the pressure to see that its expectations are met by us and by society to our ranks. But to get them, society must do its part—and give more money, more authority and much more professional independence.
Once Turner was petroleum capital of the west and Calgary was an overgrown cow-town. Now the quiet Valley views the hurrying oil metropolis with fatherly pride—but no regrets

BY GORDON WESLEY

The breed of southern Albertans who call Turner Valley their home should be forgiven if they sometimes betray a slightly smug parental attitude towards Calgary.

As almost anyone west of the Atlantic seaboard knows, Calgary has grown up, in the past 45 years, from a peaceful cow-town of 50,000 to a boisterously successful oil city five times that size where per capita income rivals Montreal's and Toronto's and million-dollar decisions are made in the 250 head offices on and around Eighth Avenue, alias Oil Men's Row.

But only the old-timers seem to remember that Calgary's success story started in Turner Valley and much of what Calgary is today owes, directly or indirectly, to the Valley's oil and gas.

Even now, the city still depends on Valley wells for gas to heat most Calgary homes, stores, offices and factories. But Calgarians, living as they seem to for the business deal today or the oil discovery tomorrow, seldom look back to the times when Turner Valley, 40 miles to the southwest, was the centre of their oil world. It was Turner Valley that, in 1914, gave Calgary its first whiff of oil and its first valuable lesson in how to— and how not to—buy oil stocks. At the same time, and in the years that followed, Turner Valley wells taught Calgary oil men many of the rudiments of the business: the high cost of exploring and drilling, the uncertainty of the search, and the publicized difficulties of getting oil safely out of the ground and away to the refinery.

Many of Calgary's older oil workers, too, learned their craft in the Valley—lessons that paid off years later in such discoveries as Leduc. The Valley's oil and gas activities kept much of Calgary housed, clothed and fed throughout the Hungry Thirties, and during World War II its oil flowed into Calgary (and Regina) refineries to become vitally-needed aviation fuel.

Moreover, the presence of oil in the Valley kept hope alive in at least a few of Calgary's oil offices during the discouraging, widespread search preceding the Leduc discovery of 1947. Indeed, those offices were located in Calgary (thus setting up its present role as "oil headquarters city of Canada") mainly because of the proximity of Turner Valley.

In these ways the Valley assumed the role of a foster parent. But while it adopted Calgary, it never adopted its ways. The financial flamboyance and Stetson-waving showmanship that (rightly or wrongly) are Calgary's civic trademarks, have no part in the life of the Valley or the little town that bears its name.

Calgarians can boast that their stockyards, the second largest in Canada, make their city the cattle centre of the west. But Turner Valley, once virtually one big ranch owned by the Turner family in the late 19th century, retains an authentic western atmosphere that Calgary, for all its Stampede high-jinks, will never attain.

To reach the Valley you turn off Highway 2 and head into the gentle ripple of the foothills. In the distance, a regiment of Rockies marches from north to south. You sniff the pungent odor of natural gas (which, when the wind is right, even carries as far as south Calgary). You drive through the town of Black Diamond, where cowboys in well-worn hats and jeans walk the streets. Then the road takes a right-hand twist around a hill. Below is the swift Sheep River. Ahead lies Turner Valley, a town with one foot in the 1950s, the other in the old west. False-front stores of a generation ago look out on the wide, dusty main street.
W. S. Harris, Calgary oil man and son of one of Turner Valley’s earliest oil pioneers

On one storm window a notice solemnly warns of a lawn epidemic, while gaudy posters along a wooden fence shunt news of a coming film at the Valley movie theatre.

On the edge of the street a sleepy dog wakes up the sun, oblivious to the occasional passing car and the handful of regulars who sit smoking and laughing in the barbeque. Though it’s the most “western” looking part of the town, the main street, at noon glances is not entirely a museum place. The Stage Office, with its purchase of a bandstand heading off the stagecoach at the gate is now, in reality, an old people’s club. The Royal Bank and Porty Wycza’s insurance office, though somehow affecting an atmosphere of antiquity through associations with their older neighbors, are of fairly recent vintage. And a few main street buildings — as the restaurant and Porter’s big hardware-appliance store — make no pretense of being anything but modern. There is a degree of modernization, however, beyond which the townpeople are unwilling to go, as they demonstrated rather pointedly just three years ago. It was the 25th anniversary of an important oil discovery, and to commemorate the event the council had seemingly unveiled a large abstract sculpture intended to represent an oil rig. The townpeople took one look and pronounced it the goldfish decoration they’d never seen.

“They wanted to turn us into the town,” said one old-timer, “but they had to build a gallows on the main street!”

Elsewhere in the town, however, there is simple evidence that the Valley has no intention of turning its back on sensible progress. A well-equipped, 23-bed hospital, run by Drs. David and Harry Lander, cares for the sick and injured for miles around and brings 40 to 50 babies into the world each year. The Valley’s schools take youngsters — including those from nearby Black Diamond — right through from grade one to high school graduation. There is also a heated swimming pool and a golf course.

Turner realizes that its Old West atmosphere and its ranches — both the working and dude variety — are being threatened by uninvited tourists. Some say these will make the difference between stagnation and prosperity when the Valley’s oil and gas wells run dry. But that time is far off yet, thanks to modern conservation practices and recovery techniques. The Turner Valley fields have enough recoverable oil and gas to last at least another 10 years at present rates of production and means of recovery. Already they have existed longer than most oil producers thought possible.

The first gloomy predictions about Turner Valley’s future seemed irrevocably accurate in 1941, only a few months after its new oil discovery set Calgary off on a stock-buying spree that was obviously too frantic to last.

The unsung initiator of this financial bender was an amateur, hard-driving man named William Stewart Herron, who settled in the Valley around 1900 to farm and to mine coal from a small surface deposit on the banks of Sheep Creek (now Sheep River). Having lost in the oil fields of Pennsylvania, he picked up his ears when other farmers and ranchers complained of the foul smell of the creek water. He investigated samples of what he thought were oil and gas. Leaving nothing to chance, he sent a sample to the University of California for analysis. When the university confirmed his opinion, he quietly bought leases until he had mineral rights to 7,000 acres of Valley land. These took most of his ready cash, as he tried to interest Calgary businessmen in helping finance a well.

After several failed wells, he decided to try a little showmanship. Luring two prospective investors out from Calgary (one was A. W. Dingman) he bit one of the gas samples and fried a mess of bacon and eggs on the spot. That did it. With eight others, they formed an 11-man syndicate called the Calgary Petroleum Products Co. Dingman was manager and took charge of drilling operations.

He spudded in CPP’s first well in January, 1913. As the cable tool slowly pounded deeper, it periodically released bursts of gas or crude oil. With each burst, excitement in Calgary mounted. On May 14, 1914, when the Dingman well blew in with a daily flow of some four million cubic feet of “wet gas” and light oil, the city went crazy. Less than 12 hours after the news hit town, thousands of Calgarians in impromptu car caravans were swarming into the Valley like prospectors on the trail of a new Klondike. Calgary’s newly-opened Palais Hotel overflowed with stock promoters and excited speculators.

More than 300 oil companies were formed in those first few days — though many were literally paper corporations with no assets other than the paper on which they printed their stocks. Over-night, stores and normally sedate offices displayed hastily-made signs quoting the fast-changing prices of the questionable stocks for sale inside. A few promoters snapped up leases entitled them to look for oil in the Valley, but many sold stock without the slightest intention of looking for anything but a safe place to stash their fast-growing piles of cash.

Investors crowded in on the countrysides, eager to part with their money. Some went away happy with nothing but hastily scrawled receipts for “investments” in companies whose names they had forgotten to ask.

Meanwhile, back at the wellhead, Herron was a busy man. The light oil and natural gasoline from the discovery were worth about four dollars a barrel at Okotoks, the nearest rail point, 15 miles east. Herron worked around the clock hauling, by six-horse teams, his newly-found riches in steel drums. The gasoline could power the cars of that period yet the way it came out of the ground. Herron and his associates sold it to drivers who needed fuel for the return trip to Calgary.

“The gasoline worked all right,” one old-timer remembers, “but it was full of sulphur and the smell from the exhaust was enough to sicken you. You had to stay a mile or two behind the car ahead of you.

Some of the worst chicanery of the boom took place in the Valley. One promoter put up a derick near Sheep Creek and invited several prospects to go fishing. While the promoter fished with his victims, several accomplices poured oil onto the water. Through Royal Canadian, when the oil flowed past them, the fishermen went wild with excitement while the promoter pretended to be dismayed that his “secret” had leaked out. But at least one of the suckers, a clergyman, unloaded his stock soon after, at a handsome profit.

Three months after the discovery, the Calgary stock-market bubble burst. The first CPP well was still producing. The worth of the field was confirmed by a second CPP well and a dozen others drilled by competing firms and syndicates. As soon as Calgary’s army of amateur investors lost faith in the petro-companies, the promotion offices closed, the signs came down and the mobs stopped milling through the streets. Except for a tiny minority smart enough — or lucky enough — to sell out quickly or to invest in one or more of the legitimate companies, everyone lost much or all of his investment.

By 1918 Calgary Petroleum Products, continually faced with heavy overhead and high exploration costs, was still trying to make its first dollar of clear profit. In 1920, a fire wiped out an absorption plant used to make gasoline from gas vapor, leaving the company all but bankrupt.

A year later Imperial refinanced the CPP venture and formed the Royalite Oil Co. Ltd., which remains an Imperial subsidiary until 1949.

The Royalite, Imperial rebuilts the gasoline plant, brought a third well into production and began a fourth: Royalite No. 4 — the deepest hole in the Valley to that time. On October 14, 1924, wet gas blew in at 3,740 feet.

For more than a month the crew fought to control the flow, which rose to 21 million cubic feet of gas a day along with 600 barrels of white naphtha wrecking the drilling rig in the process. Then the well caught fire.

“Man, talk about oil well fires!” says Herron’s son, Bill Jr., who was one of

|Imperial Oil Review, September 1939 | Imperial Oil Review, September 1939|
the feet on the scene. "The flumes reach-
ed almost to the sky."

The fire raging for several days before the crew managed to get near enough to do the flaming gas with steam. Two other fires broke out after that, and the well was not under permanent control until December 19.

For all its birth pains, Royalty No. 4 gave both Turner Valley and Calgary a new vitality. It lasted 10 years and pro-
duced more than a million recoverable barrels of wet gas or naphtha.

As a result of Royalty No. 4, the Valley's population, which had dwindled to a handful, grew overnight to 1,000. Calgarians, although still smarting from the financial flogging they had taken 12 years earlier, eventually caught the stock-
buying fever. However, they financed several bonanza companies, some of which went broke.

There were still shenanigans in the Valley. "We had to keep guards on the pipe lines," recalls Sam Coulth who went to the Valley in 1917 to help build a re-
finery. "When sections of pipe would disappear during the night," Coulth says, "we'd call in the shakka-dee, a big iron, 72 years old with a horsehead as a wreath, to heave the Edmonton Pipe Line Co. in Calgary."

One ingenious thief in the Valley dug a tunnel from his yard to the gathering line, installed his own pipe line and got a miniature filling station going in his garage.

In the depression of the Thirties, Turner Valley's activity kept many a Calgarian out of the bread lines. "Royal-
ty fed the families in the area of every-
one they had ever employed," says Coulth. "I remember getting a long-
distance call from Toronto asking why we had ordered another three tons of meat each winter, but the Imperial directors never stopped me."

The nation was still affected by the depression on June 16, 1917, when a Calgary syndicate called Turner Valley Royalites struck 850 barrels of oil a day in a 6,800-foot well. It was a discovery of national significance: a crede oil—
unlike Turner's previous "wet" or "dry" gas, natural gasoline or light oil—and the first major Canadian oil field within reach of a market.

The Royalties find Calgary's rise for the third big stock-buying spree of its history. However, many investors still remember all too well the panic of 1914, when prices fell of their money.

From 1916 on through World War II, Turner Valley pumped a steady flow of oil into Regina and Calgary, where refiners produced the fuel that kept RCAF planes aloft all over the provinces. During 1942, its peak year, the Valley produced 4,700,000 barrels of crude.

Meanwhile the search for other sources of oil continued in the west but at times so few as half a dozen companies con-
tinued the hunt. The search might have been abandoned—or postponed for years—if Turner Valley had not re-
mined the companies that there was oil in Alberta.

Then came Imperial's Leduc discovery on February 13, 1947, an historic find that drew Calgary's attention away from Turner Valley.

Today it's still possible for a man to lose his shirt in Calgary—a stock deal or a drilling venture—and a few still do every year. But a million-dollar decision is far more likely to be based on months of painstaking scientific research than on a "hot" market tip or an amateur investor's whim.

Intermingled with the offices of what one Calgarian calls "the biggest collec-
tion of oil brass in the world" are dozens of other establishments that reflect Cal-

The Valley will always remember that day in 1914 when it changed Calgary from a cow-town to an oil-town."
Colonel James Walker, the man who originally owned the land on which Imperial's new Calgary refinery stands, was a country gentleman of the old school. An ex-R.H.M.P. officer, he used to drive down Eighth Avenue in an open buggy drawn by Shetland ponies. For years he led the Stampede on a white charger. And although he lived to see progress in the form of Imperial's first Calgary refinery take over his pasture in 1923, he couldn't in his wildest dreams have visualized the development of 1959.

On his once-quiet grazing lands beside the Bow River, 4½ miles south of the city, stands a collection of towers, tanks and pipes painted all the colors of the rainbow and more—Canada's most up-to-date refinery. The new units—built on the site of Imperial's old plant—are the latest in industrial fashions. Over 15 colors make the refinery blend artistically with the countryside. The pastel shades, matching the sky and the surrounding foliage on the banks of the Bow River, range from such industrial tones as butterfly blue to honey gold.

The colonel is dead, but nine employees still on Imperial's payroll have seen his land change from pasture to a small operation of only three man units and finally to a $14 million aromatized complex capable of producing over half a million gallons of oil products a day. All of the nine—John Hilchie, Robert McKenna, Hector Ingram, Leslie Howell, Harold Allen, Norman VanDuiinder, George Wilson, George Finchley and Walker Frost—started work at the opening of the old refinery in 1923.

Actually, the first Imperial man on the original site was Jeff Hanna, today an alderman in Calgary and president of the Engineering Institute of Canada, who arrived with the surveyor in 1922, took a good look at the soggy, unplowed field and wondered if Imperial hadn't got the worst of its deal with Colonel Walker. Later, diggings proved the excellent bearing qualities of the ground. Hanna started as assistant superintendent, became superintendent in 1948 and was succeeded by Stan Reynolds in 1957.

The first superintendent of the old refinery was C. M. Moore, now retired, but still a prominent Calgarian. A big energetic man, he ruled the refinery for 26 years and made himself felt the very day he arrived. He had land still hold a voice that could be heard blocks away. On the first day he is reputed to have stood at what are now the gates and with one shout, summoned a man beside the river, several hundred yards away. Moore was a strict disciplinarian but very popular in the refinery.

One old hand recalls, "Once I heard Mr. Moore's voice when I was working on the old coking still. He was still 300 feet away and I ran over; I could see he was mad and he dressed me down like a sergeant-major for not wearing a tin hat. Then he sent me running back to the unit. Just as I reached it he called again. I trotted back expecting the sack, but he grinned and said, 'Lend me a pinch of tobacco.'"

Another former refinery hand says, "He yelled at you all right, but if anyone was sick in the family, he was the first one at your door."

Construction in 1923 was not the smooth operation it is today. The present refinery was finished in the record time of about 11 months—three months sooner than expected. In 1923 workmen had little experience in putting up heavy units. One of the largest was hoisted by a crane on rails. Halfway up the crane began to slide along the rails as if it were on ice. The foreman, a tough sunburned fellow called Fred Abrams, put his fingers in his ears and shut his eyes expecting the multi-ton equipment to pound into the earth. Fortunately the crane stopped slipping when the unit was inches from the ground. Last year, during a similar operation, a 48-ton 123-foot unit was hoisted between four other units and deftly edged into place without incident—with only six inches to spare on either side.

Highly skilled men were needed to achieve this perfection. During peak periods of construction over 700 skilled and semi-skilled men were on the job, about 550 of these from Calgary. Twenty-four local contractors and suppliers were also involved to satisfy the new structure's voracious appetite for materials.

The workmen poured more than 6,500 cubic yards of concrete—enough for 180 houses. They installed 23 miles of steel conduit, 47 miles of carbon steel piping and 115 miles of wire and cable. The gravel and asphalt 'lard would have

One of the new units in the $14 million refinery is a Powerformer to make high-octane gasoline
Inside the cat cracker, heat and catalyst combine to break down heavy crude and convert them into high-quality gasoline and heating oils.

At Calgary refinery, the quality check takes place in one of Canada's most unusual refinery labs. Its colorful, simple interior provides an assembly-line efficiency. The two-story 100-by-50-foot structure is aesthetically clean. Long benches are arranged in flow-pattern sequences, gleaming stainless steel星星 in rows; test tubes and samples lie in another; control panels in a third. Some of the chemicals bowed two miles of road and the 65,000 cubic yards of earth excavated would have cleared basements for 270 private homes. In addition, each refinery unit had to be built with almost watchmaker's skills to ensure high product quality. Even with precision tools, however, modern refineries must continually check quality in research labs.

The lab, central in its design and equipment, helps refiners maintain high product quality.

Stan Reynolds, superintendent since 1951, has kept close watch on refinery transactions.
used in testing products are piped into the labs through faucets, similar to those used in normal bathrooms, for safety and accessibility.

Five chemists and 15 technicians carry out gasoline analyses, crude oil assays, and octave tests for aviation fuel. Many of these last tests are made in a specially-equipped, supercharged engine with cylinders calibrated to register octane numbers. With it the lab men are able to simulate actual flying conditions.

Calgary refinery is Imperial's main source of aviation fuels for the prairies and the Arctic. Its first contact with aircraft fuels came in the second world war when the oil refinery plant helped supply fuel for all prairie-based planes west of Winnipeg. Air crew of the Commonwealth Training Scheme learned to fly using gasoline from Imperial's refinery. At the same time the refinery supplied the asphalt needed for western airport runways and roads.

During the post-war period, when many other refineries were modernized, the need for money to develop oil fields near Edmonton and the fact that crude supplies near Calgary were dwindling, delayed the modernization of Calgary. But today, Calgary is the newest refinery in Canada, with a capacity of 14,700 barrels a day and a range of over 50 products for the expanding needs of Alberta—a far cry from the Colonel's cow pasture—by Michael Joubert

For George Ross and hundreds of other flying ranchers and farmers, aircraft are causing an economic and social revolution. Where distances and bad roads can cost time and money, the plane is taking over from car and horse—by Bill MacPherson

Flying Cowpokes of Lost River

George Ross stepped out of the tidy, comfortable bungalow that is the Ross ranch house on the sprawling Lost River Ranch, 70 miles due south of Medicine Hat, Alta., as the crow— and George—flies. He walked over to the one building of half-a-dozen that was not typical of those found on most farms and ranches—a low hangar with a trim, two-place aircraft parked in front of it.

A tall, lean, freckle-faced man of 36 with a shock of unruly, gingerish hair, George swung himself into the aircraft, raised 25 feet onto a grassy runway and took off over the rolling, coulee-gashed rangeland that sweeps out for miles in every direction from his ranch house.

Forty-five minutes later he set the plane down on the same runway in time for the noon meal. In that time Ross had covered about half of his 152,000-acre Lost River Ranch, and had checked the dams, fences and 2,000 head of cattle over which he had flown.

Such a periodical inspection tour—absolutely essential for a successful ranching business—would have taken days on horseback or by truck. And in the spring, wet ground often deters travel by either means.

Ross' flight is one example of how the airplane is saving time, and therefore money, in the prosaic business of converting range grasses into beef dollars. To George Ross the economics of air-borne range-riding are an established way of life: his father, George Sr., was a pioneer in range flying 30 years ago. But to a growing number of prairie farmers and ranchers, the use of aircraft in their operations is a post-war revolution, social as well as economic.

"Flying," says Jerry English, a flying farmer from the Grayburn, Sask., district, "never loses its appeal. The more I fly, the more I want to. In addition to its farm and business benefits, flying gives me a new horizon for recreation and an opportunity to see other people around the country and how they live. If wealth is measured by friends, the airplane has made my wife and me wealthy."

Raymond Jenson, of Gulf Lake, president of the Saskatchewan Flying Farmers, thinks flying will help keep young people on the farm. He hopes to interest more young farmers in flying. The growing use of airplanes in farm and ranch operations is shown by the
swift rise of flying farmer organizations. The movement, started in Oklahoma in 1944, in recent years has spread over the U.S. and into Canada and Mexico. The Alberta Flying Farmers, organized five years ago and now has a membership of about 150. The following year a Manitoba organization was set up; it now has 115 members. In 1956 Saskatchewan joined the movement and its three years has attracted some 275 members. That about 540 western farmers, ranchers and their wives operating some 250 aircraft is a large number of flying farmer organizations. Officials estimate that perhaps 200 more are varient for membership.

There are also individual farmers in Ontario, but the use of aircraft is much more important in the prairie. When bad roads and long distances are still a problem. To these prairie farmers, flying miles to a turkey supper or ice-cream social is now as commonplace as a 20-mile trip to the town dance used to be. They are emerging as a factor in the economy.

A major task is convincing air traffic controllers that farmers are remarkably safe operators in the air. The flying farmers feel there is a tendency, among the military and commercial pilots, to refer to them as "those crazy farmers" much as city motorists refer to "those crazy universe drivers". This attitude exasperates Walter "Stub" Ross, 27, a brother of George Ross who now manages a Lethbridge woolen mill but until the fall of 1958 worked with a third brother, Jack, 34, on the family's 80,000-acre Milk River Ranch south of Lethbridge.

"Farmers," says Stub, an AFF past president, "are as safe as can be in the sky. I've flown into New York, Chicago, Denver and Salt Lake City with no trouble at all. Farmers have a tendency to be more careful because they know something about motors. They take care of their own aircraft and don't go up if they're not sure it's safe."

The Alberta Flying Farmers have the insurance plan, and the lowest rate of any part of the aircraft industry. Official says we have very, very few accidents.

Stub Ross has been flying since 1949. George since 1947 and Jack since 1945, and none has had a flying accident. George's plane suffered damage once: an inquisitive horse, attracted by the "dope" in the plane's fabric, bit a hole in the tail assembly—just one of those things a flying rancher has to guard against.

Bovens can add flying to their operations simply and relatively cheaply. Flying lessons cost $60, of which $10 is refunded by the department of transportation when the trainee gets his license. Suitable planes range from $1,500 for a small used Piper to $25,000, 300 h.p. jobs. The average farm aircraft is worth $5,000 to $10,000. Because of high demand depreciation is negligible, and operating cost of a single-engine plane is low—five to seven cents an air mile, and even less when calculated in road miles.

Landing strips can be laid out simply and as little cost. "Just clear the crust and rakes off and fill the hole," says Stub Ross. With grass over they are serviceable in the wettest weather. In winter planes are converted to skis, and in many areas, municipal landing strips are available for trips to town.

Probably the first man in western Canada to fit the airplane into agriculture economics was the late George Ross, Sr. Described by his son George as "as original thinker," Ross Sr. became seriously interested in flying in 1916, when he was 21. He left the ranch his father had established in the 1890s south of Magrath, Alta., and headed for Newport News, Virginia. There he won his licence after training on flying boats, and promptly joined the Royal Flying Corps for the remainder of World War I. He bought his first aircraft in 1927, and, except for a few years' interruption during World War II, he flew regularly from that day until his death June, 1958.

George Jr. and his brothers, using four aircraft, are finding the same farm profits in flying as their father did. Their saving in time is spectacularly. The cause of the time saving is because their information on their ranching operations. In all, they manage 353,000 acres of 440 square miles of rangeland. The land is divided between three properties—-the Milk River Ranch south of Lethbridge, the Lout River ranch south of Medicine Hat, and the L.A Ranch northeast of Lout River. The three Ross brothers own the Milk River and two thirds of the Lout River, and George manages the L.A, in which he holds the majority of shares.

"Our saddle horses are getting fat and we've got a few cowboys since we started using airplanes," says Stub. A study of the brothers' ranching activities shaves why.

In the spring, 1,000 head of cattle must be moved from the winter range at Lout River into a 54-acre range where the cows calve. At the same time, L.A. cattle are moving into another 40- acre range for the same purpose. These animals must be driven by oxen on horses, but the cowboys' job is made infinitely easier when George flies his plane, communicating the two ranges and telling them where they'll find the cattle. That's a time-saver—and when the cattle move into the calving fields, the airplanes become a lifesaver.

Some cows inevitably have trouble calving, and if they don't receive aid both cow and calf can be lost. During the calving period, George flies over the two fields daily at an altitude of 90 feet. If he spots a cow in trouble, he returns home, jumps in plane, and takes off. He flies back and forth, over the field in both directions, and a day is 400 miles. He finds the plane quickly pay for themselves.

During the summer, over at the Milk River Ranch, Jack keeps a careful watch with the air over a big field of yearling heifers. Because the breeding of a yearling is in full swing, and a loss of 50 animals can be a serious problem. They also have a bull that is expected to give the heifers their first/and second mating. They would be hard to find, and the cost of moving them was prohibitive. Jack was able to find the bull with a plane in a day's time.
from his home town of Havre, Montana. So far, though, George has not been called upon to provide the service which Stuhb, as a member of the Lethbridge Flying Club, has provided—refueling children of whom coughing. As a free service—at the request of a doctor—a club member will fly an ailing child up to 12,000 feet and then descend 500 feet a minute—a procedure which relieves, whooping cough in practically all cases and cures it in half of them.

Stuhb makes much more use of his plane—a gleaming new $38,000 Piper Comanche—for leisure than does George. Stuhb flies to conventions and on holiday trips to the U.S. He hit a new high in airborne togetherness in February, 1958, when he bundled his wife, his five-month-old daughter Bonny Lynn—and a baby sitter—into his plane and flew to a Flying Farmers' convention in Nebraska.

These business-and-pleasure uses of farm-based aircraft are repeated, with variations, across the prairies. Elwood Lawrence, who operates a farm and seed plant at Meskanaw, Sask., with his brother Howard, had a combine breakdown last year. The only available parts were in Saskatchewan, 80 miles away. In two hours, with aircraft, they brought home the parts and had the combine working again.

Raymond Jenson uses his plane to gather first-hand reports from all over Saskatchewan on such questions as wood control and the proper growing of registered wheat. Howard Thomas, of Grandora, Sask., seeded a clover-brome mix from his plane in a field too wet to work with machinery. Ken Petrie, of Roland, Man., sprays weed-killer chemicals from the air.

Farm aircraft can offer another kind of reward—Paul Nodke recently gave every member of the Swift Current, Sask., boys' band a ride in his plane, while Vincent T. Staples of Kelbridge, Sask., annually rewards the top 4-H members in his district with plane rides. A continuing educational program for its members is a vital part of the Flying Farmer organization. They hold regular flight clinics, where members are brought up to date on new aviation advances and given refresher courses in flying. The Saskatchewan Flying Farmers are becoming increasingly aware of the field of aviation. Members have flown to southwestern Saskatchewan to look at a pipeline project to the north of the province to view mining activity at the University of Saskatchewan's Farm and Home Week, an adult education project for farm residents.

The voice of the Flying Farmers is already making itself heard seeking improvements in flying facilities. The Alberta and Montana Flying Farmers cooperated to get a landing strip built at the Coquille-Stuyit Grass border crossing. Named in memory of George Ross, Sr., in recognition of his air pioneering, the strip is a blessing to Montana and Alberta flying farmers who previously had to fly as much as 100 miles out of their way to clear customs at Lethbridge and Great Falls. The Alberta and Montana governments split the $13,000 cost.

Management changes

E. Douglas Kingbury has been appointed manager of a new department at Imperial—the Systems and Computer Services department. His new job is to process urgent information for company use in electronic computers and to use higher mathematics for better efficiency in company operations. Mr. Kingbury was born in Toronto and is a graduate of the University of Toronto in commerce and finance. He joined Imperial's tax department in 1954, and served with the RCAF during the war. In 1952 he was appointed assistant comptroller and in 1956 became chairman of the committee on mathematical techniques. He held this job until his new appointment.

Harold O. McNutt has been made assistant manager of the new department. Mr. McNutt was born in Truex, N.S. and educated there. He holds a teacher's diploma. Most of his early career with Imperial was spent at Halifax refinery which he joined as a lab technician in 1925. During the war he was in charge of the handling of all cargoes for merchant and war ships operating from Halifax. He transferred to the comptroller's department in Toronto in 1948 and, for the past three years, has been a member of the committee on mathematical techniques.

John Cornwall has been appointed assistant comptroller. Mr. Cornwall was born in Taber, Alta. and educated in Vancouver. He joined Imperial at Iroquois in 1929, and served in the RCAF during the war. Since 1939 he has held various positions in the comptroller's department including that of chief accounting officer.

Sydney E. Ensor becomes assistant comptroller of taxation in Imperial's tax department. Born in Hamilton, Mr. Ensor is a member of the Institute of Chartered Accountants. During the war he was with the Army for four years and won an overseas. He joined the company in 1948 as assistant tax accountant, and later became chief tax accountant.
If ever a vegetable was a prima donna, it's the homely, turnip-like sugar beet. Given the right soil, fertilizer, watering, weather, and loving care, she'll bring a handsome revenue to her sponsor. But woe to the man who fails to pay her those essential courtesies.

Nowhere is this more vividly understood than in southern Alberta, where 1,600 farmers plant Canada's largest sugar beet crop and, in normal years, harvest about half a million tons. Out of this mountain of beets, Canadian Sugar Factories' three southern Alberta plants, at Raymond, Taber and Picture Butte, refine 140 million pounds of white sugar.

This is more than half the white beet sugar produced in Canada. Four other beet refining plants—one each in Manitoba and Quebec and two in Ontario—produce the remaining beet sugar. The seven plants combined produce 18 percent of the Canadian white sugar output.

To farmers under contract to the sugar factories, sugar beets can bring a return of more than $200 per acre. No cereal crop begins to compare with this. But it is
an advantage which is not won easily. Raising the temperamental beet calls for constant care, hard work and careful planning. In early spring the farmer must plant the seed one inch apart and fertilize the field. He must irrigate at least twice and sometimes four times. He must thin the growing plants until they are 12 inches apart and at harvest time dig, depectise and pile the roots, at the same time praying that the weather will not kill his year's work.

Frost can be both his friend and his foe. A nip in early September is welcomed because it helps bring the beet to maturity and hastens the storage of sugar in the roots. One year, however, severe September frosts killed the tops and small "feeder" roots in the ground. When new tops started growing during the heat of an Indian summer, some sugar was drained from the beet.

A wet fall makes the ground so muddy that only with difficulty can the beet farmer use the mechanical harvester, which in recent years has taken much of the back-breaking toil out of harvesting.

In the beginning, beet raising was a back-breaking, disappointing task. It began in Canada in 1901, when Jesse Knight from Utah made the first abortive attempt to introduce sugar beet farming to the fertile plains of what is now southern Alberta.

Since then former wheat farmers have mastered the art. In 1925 the crop yield per acre was 7½ tons of beets. Today mechanization, better farming and improved varieties have raised the yield to as high as 20 tons per acre.

Around the end of September harvesting begins and Canadian Sugar's three plants spring to life after an overhaul in the nine-month off-season period.

The plants run 24 hours a day and key workers forget about evenings at home. The 1,000 men employed during beet-slicing time (the "campaign," as it is dubbed) get on with the urgent task of processing the beets into sugar, molasses and wet and dry pulp for livestock feed. Only the $35 million Taber plant, one of the most modern on the continent, dries the pulp so it can be marketed at great distances.

Around Lethbridge in southern Alberta beets pile up at railway sidings awaiting transportation to a sugar refinery. More beets are stockpiled outside each plant but harvesting continues until farmers have completed their deliveries about November 1.

Around Christmas the last beet rolls through the slicer and farmers and refinery workers turn to other tasks. Only skeleton staffs remain at the plants to overhaul machinery, sell and ship the sugar and molasses, make the final payments to farmers and plan how they'll look after next year's crop of the "prima donna of the vegetable world"—by Joan Durand
For years woodsmen puzzled over the mysterious great bears glimpsed deep in the Rocky Mountain foothills. Then oil exploration crews found the wilderness fair where the rare plains grizzly had been hiding for nearly a century.

BY JIM BOWES

On a spring day in 1953, Bella Twin, an Indian woman, shuffled over an ancient trail in a wilderness pocket of northern Alberta. She swung a .22 rifle lightly in one hand although arthritic pains stabbing through her five-foot, hundred-pound frame reminded her sharply of her 67 years. But her mood was gay. There were beaver ahead on the trapper she had worked for 40 years.

The tiny woman padded around a sharp bend in the trail. Ten feet away, a shaggy, brown-haired monster lifted an enormous head and regarded her more in surprise than anger. Retreat up a tree cut off, Bella lifted her pea-shooter and against odds close to those of David pole-axing Goliath with a sling-shot, paralyzed the huge grizzly—for grizzly it was—with a bullet in the brain. In quick succession, she pumped in seven more shots.

Bella had stumbled into the “Valley of the Giants,” until recently an untouched forest wonderland 150 miles northwest of Edmonton; the last refuge of a super-race of grizzly bears believed to be a remnant of the thousands of plains grizzlies which roamed the western prairies far to the south 100 years ago. Here in an 1,000 square-mile hideaway of woods, bubbling streams and vest-pocket mountains, the great bears—there are less than 400—have lived and bred to enormous size.

Now, with major oil finds bringing more than 100 drilling and seismic crews into the green Swan Hills, the giant grizzlies have suddenly lumbered into public view, posing an intriguing zoological riddle for naturalists throughout North America.

But Bella Twin had bear, not bear, on her mind the day she shot the grizzly. Calmly, she skinned the animal and plodded on towards her traps. Two weeks later, toting the beartskin and her beaver pelts, she walked into the village of Slave Lake, a sprawl of frame houses and false-fronted stores on the shore of Lesser Slave Lake. Wide-eyed villagers gaped at the enormous skin and called for “The Baron,” a local sobriquet for Reinhold Eben, late of the East Prussian aristocracy and, for the last 30 years, a top guide and hunter in Canada’s northwest.

“The Baron” took a startled look, got directions from bewildered Bella and galloped off into the woods. Hours later, he found the bear’s skull. It measured a colossal 16½ inches from nose tip to base and 9 11/16 inches across the head. Eben estimated the animal had weighed at least half a ton.

“I knew that it must be one of the largest grizzlies ever taken,” he recalls. It was better than that. The skull was shipped to the Boone and Crockett Club of New York, the imaginatively-dubbed arbiter of world hunting records. Back came a ruling that this was the biggest grizzly on record.

The word rippled along the moosca telegraph but caused little stir among the handful of trappers, forestry towermen and loggers who occasionally penetrated the bear’s domain. Almost all had seen giant paw marks, some spanning eight inches, on the woods trails. A few had caught the surprisingly shy monsters in their rifle sights and had brought home carcasses that measured eight to 10 feet from nose tip to hind paw. And everyone in the country remembered homesteader John Aukerremer’s ring-tailed pet.

Aukerremer, who had hacked a patch of farmland out of the bush south of Slave Lake, adopted a bear cub which ambled up to his cabin door after its mother was shot. It soon
became a household pet, tagging at the homesteader's heels in the busy town. Dubbed "Dynamite," the grizzly amably took on all comers in wrestling matches at the summer carnival at Canyon Creek, a fishing village on the shore of Lesser Slave Lake.

But "Dynamite" didn't last long. Neighbors, fearing for Auckerman and themselves, had the grizzly shipped off to the Calgary zoo. A year later, again proving he was no ordinary bear, "Dynamite" stuck his tongue through the bars of the cage and promptly had it nipped off by an African lion. But the Swan Hills grizzly was undaunted.

"We put him on a diet of bread and milk and he sucked it up without much trouble. Losing his tongue may have stunted his growth slightly but otherwise 'Dynamite' is in good shape."

Oddly, the most excited man in Alberta when word of Bella Twin's bear drifted "outside" was Albert Frederick Oemling, at 28 a highly-successful Edmonton wrestling promoter. Known throughout the wrestling fraternity as "the boy promoter," Oemling had successfully hidden his own grizzly, one of western Canada's top zoologists and a graduate of the University of Alberta with a master's degree in zoology.

Oemling, an articulate, polished persona who wears 225 pounds on a 5-foot-10-inch frame, is a force to be reckoned with. He needs money to make fast to allow me to do the work I really wanted."

As early as 1946, when he nearly divided his time between studying zoology at college and wrestling profession-ally out of New York, he heard rumors of a giant race of grizzly in the nearly inaccessible Swan Hills. In the spring of 1947, he prowled the fringes of the area, interviewing Indians, men who knew the hills. Oemling saw no bears then, or on subsequent expeditions in 1948 and 1949, but he fell in love with the country.

In lyrical language unbecoming to the hard-bitten wrestling world, he describes the Swan Hills country as he first saw it: "It was a paradise of green, shot through with magnificently increasing valleys and laced by sparkling streams. An endless sea of lodgepole pine and spruce sprang up from a carpet of moss."

In the spring of 1950, trudging trails used by fur traders, he explored the heart of the hill country for the first time. From a ridge of Moose Mountain, one of the highest points between the Rockies and Lake Labrador, he swept the valley floor with high-powered glasses.

"I saw my first Swan Hills grizzly down there," he recalls. "It wasn't as big as some but it was quite a thrill.

Evidence of the big bears continued to pile up. Oemling's "network of spies," as he calls the Swan Hills hunters and trappers, sent back to Edmonton reports of sightings, measurements of giant paw marks and, occasionally, the remains of a massive skull. Month by month, they added to the picture of a mysterious super-race of grizzlies, topped in size only by the Alaskan Kodiak.

I asked myself, 'Why are the Swan Hills bears so big?'" says Oemling. "I felt they must have come from large stock to begin with.

With Sherlock Holmes zeal, he tackled the riddle. These were not Rocky Mountain or coastal grizzlies. Nor did the Swan Hills giants appear to have evennodding acquaintance with any other variety of bear on the continent.

Oemling dipped into his textbooks and flipped to a section on the plains grizzly. His excitement grew. For centuries, huge bears had roamed the northern prairies, often lumbering across the flanks of the buffalo herds. Early explorers like Michael Hender, ranging from the Rockies to the Mississippi river, had noted thousands of "big bears" in their journals. Prior to 1850, Welsh in southern Saskatchewan had shipped as many as 600 beavers a year. The plains grizzly was larger than any other, ranged from chocolate to silver-brown and had long, needle-sharp claws. The Swan Hills grizzlies matched this description. But the plains grizzly had been extinct for 65 years. Or was it?...

"There is historical proof that herds of buffalo roamed as far north as the Peace River to escape the advance of man," says Oemling. "I think a handful of survivors grizzlies came with them and bred up in the Swan Hills which, until lately, was one of the most inaccessible of prairie areas on the continent."

Supporting evidence for the theory came from Dr. Austin Cameron, curator of the National Museum at Ottawa. Skulls of plains grizzlies at the museum and Swan Hills specimens sent to Ottawa, were strikingly similar in size and features.

Meanwhile, back in the hills, the great bears were unwittingly losing their cocoon of isolation. Seismic crews had

to its feet and lurched after the solid wheels of a supply truck on an ill-ten-foot tool shed. Ten feet from the shed, the bear veered off and stumbled into the woods.

"I didn't know until then that 26 men could get into a tool shed," Oemling recalls with a wry grin.

By the winter of 1957-58, the Swan Hills bristled with drilling rigs. More than 100 camps sprang up, each with a garbage dump that drew the grizzlies like a magnet. Drillers, meeting an out- stretched bear on the periphery of camp, were inclined to shoot fast. So did the "King of Moose Mountain," a magnificent specimen of 1,000 pounds, 10 feet long from nose tip to hind paws and as Oemling put it, "just nicely rounding into maturity." (The bears are believed to live to about 65.)

"I had a long talk with the man who shot the 'king,'" says Oemling. "I told him the whole story of the Swan Hills grizzlies. Now he's one of the best scouts I have."

The zoologist roamed from camp to camp, telling the story of the bears. John W. Proctor, of Calgary, general manager of the Canadian Petroleum Association and an amateur zoologist, became an ally. He circulated the in- dustry, taking co-operation in preserving the grizzlies. Garbage dumps were moved farther from cookhouses. Some camps banned rifles.

"The co-operation from the oil industry was terrific," says Oemling.

Later, the Alberta government bucked up the conservation effort by placing the Swan Hills off-limits to all bear hunting.