"Green Flies, Powdered Rhubarb, Ground Cuttlefish Bone"

Students at the Ontario College of Pharmacy live in a world of glossy green flies, powdered rhubarb, ground cuttlefish bone, and some 8,000 other items which are the tools of their profession.

The flies, laboriously collected in Spain, are for blistering plasters. The rhubarb is for tonics, the cuttlefish bone for canaries.

The undergraduate must become familiar with the Chinese beetle and many another insect; tree bark such as cascara wood and cinchona (which yields quinine); and a welter of liquids, oils and chemical salts from which pills, emulsions, tinctures and infusions are made. So complex has pharmacy become that the course now demands four years of intensive effort instead of the three months considered long enough in 1882.

The College of Pharmacy is affiliated with the University of Toronto. Curricula, admission standards, and examiners are under the jurisdiction of the University Senate. Many lectures are given by Varsity professors.

Located near the junction of Gerrard and Church, the three-storey College is in a one-time "fashionable' area which has become part of busy downtown Toronto. Students have a tight schedule of about 28 hours a week of labs and lectures. In addition to studies during the academic year, students must work 18 months in a store or a plant as "interns" (usually during the summer months). After they graduate many will spend seven or eight years in retail stores before they can afford to start in business for themselves.

Women who graduated from the College in 1906 are still among Canada's 4,000 practising pharmacists and 50 women are enrolled this year. In 1948 the first and second prize winners were women, something male graduates of that year would rather not discuss.

The College is proud of its high standards. At most of the 69 accredited colleges of pharmacy in the United States, the entrance requirement is junior matriculation. In Ontario it is third class honours in senior matriculation.

Students in pharmacy spend half their time in University buildings taking such subjects as botany, pharmacology, chemistry, physics, zoology and English. At the College itself they take various courses in pharmacy, pharmaceutical chemistry and materia medica. The last is a grouping of courses in physiology, first aid, the study of animal and plant sources that yield crude drugs, and the study of biological products.

Also taught, of course, is the abbreviated Latin that makes up the language of the prescription. The scrawled note a Canadian doctor hands his patient makes easy reading for a druggist because there are only about 200 abbreviations to memorize.

Orders from overseas aren't so simple. A good many people in Central Europe are sending prescriptions for relatives to have filled here and Ontario druggists are having quite a time with them. And in some Ontario communities mid-Europeans buy as many as 100 leeches a month at $1.50 a leech from one store alone. The leeches (bloodsuckers) are used to reduce the swelling in black eyes.

Pharmacists fill prescriptions that may range in price from less than a cent to $4 for a single pill. Ingredients come from all over the world and students are taught to pick them out at sight. "No two humans look exactly alike and neither do any two of the substances we use,' pharmacists say, though to the layman many of the bottles carefully stacked side by side seem to contain the same material. After first becoming familiar with their materials, pharmacy students work in a lab where the bottles are numbered. If a student isn't sure, he can cross to the other side of the room where a list identifies the substances. However, the number system trains his power of observation and after a while he knows at a glance what a bottle contains.

The College museum has a fascinating display of old utensils, prescription books and preparations. For instance, there's a packaged commercial product of the early part of the nineteenth century known as "Electric Beans". The legend on the package says beans Create Rich Red Blood. Pills were potent in the old days; one patent medicine was labelled "Anti-Pill Cure." Then there's a poison register kept by a Toronto druggist in 1877. At the top of one page, in a long straight hand, is the signature of Sir John A. Macdonald. The first Father of Confederation bought an eyewash solution, one ingredient of which was a poison.

—From Varsity Graduate

Trees That Weep Priceless Tears

Perhaps the greatest dollar-earning asset in the Empire is rubber, most of it from troubled Malaya, a British possession. There the rubber trees weep to bring in 60 million pounds worth of dollars a year.

This most versatile and widely-applied of all the earth's natural products is indispensable to twentieth century civilization, and in a world plagued with shortages it is almost the only essential commodity of which there is an abundant supply. One can hardly count its present uses, or set bounds to its possible future use, so fast are we finding new ways of employing it.

During the war alone, several hundred new uses were discovered, ranging from "pliofilm," which protected aircraft engines sent to distant battlefields, to conveyer belts now used by the mile in up-to-date mines.

The United States uses well over a half of the whole world's production, for natural rubber is one of the few commodities she has found it impossible to produce herself.

The rubber plant is not a native of British Malaya. It came originally from the New World—one of the first products of America to be noted by explorers and one of the last to be exploited.

Columbus himself, during his second visit there, was astonished to see native Indians amusing themselves by playing with heavy black balls made from vegetable gum. In 1740 a French scientist, Charles Marie de la Condamine, sent back specimens of this amazing "bouncing gum." He called it "caoutchouc," a variation of the Indian name for "weeping tree," and caoutchouc it still remains in the French dictionary.

Then in 1770 Joseph Priestley, an Eglish chemist invited attention to a material which he found to be "excellently adapted to the purpose of wiping from paper the marks of a black-lead pencil."

Englishmen tried it and promptly gave it the name "rubber." Its origin they indicated by the prefix "India" (meaning from the West Indies), and thus the label "Indian rubber" came into being. Samuel Peal patented a process for making waterproof fabric by using rubber dissolved in turpentine then in the 1820's Thomas Hancock and Charles Macintosh established rubber factories in London and Glasgow. Everyone to-day associates the Scot's name with waterproof garments.

"The tree that weeps" became the most precious timber in the world, and Brazil, where it had been first discovered, still held the monopoly of supply. But in that country the natural rubber forests had been ruthlessly exploited. Many millions of trees had been "bled" to death, and the price of rubber rose steadily as it became necessary to penetrate deeper and deeper into the Amazon forests to tap new supplies.

The Brazilians hung on grimly and refused to allow the precious seeds to be taken from the country so that plantations could be laid down elsewhere.

Several unsuccessful attempts; were made to smuggle seeds out. Finally it was left to the resource of an Englishman. Henry Wickham (who was afterwards knighted), to go through with it in the good old Elizabethan way.

He undertook to procure by hook or by crook a sufficient number of seeds to ensure the future of rubber. Chartering a steamer, he succeeded in smuggling 70,000 seeds out of the country packed between leaves of the banana tree. He reached Liverpool, where a special train was waiting to rush the seeds to Kew. There some of them germinated and the plants were sent out to India, Ceylon, and Malaya.

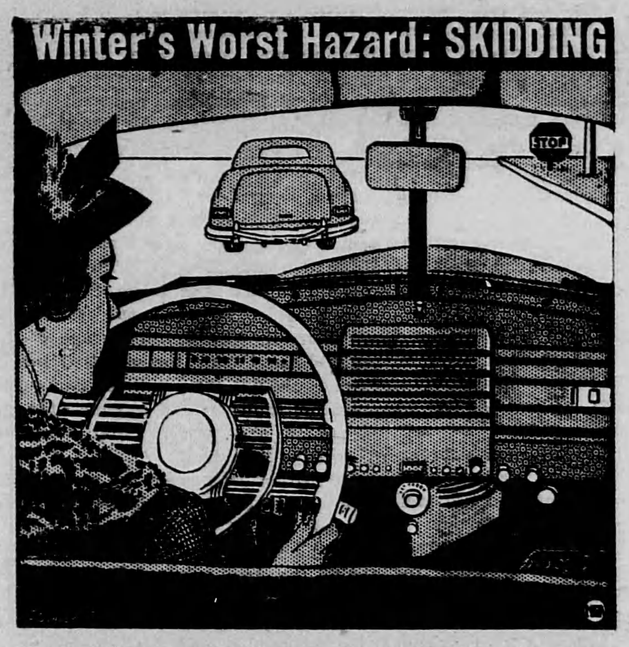
Total cost of Wickman's expedition was £1,500. Out of it have grown 700 million trees, producing 800,000 tons of rubber annually.

Even to-day we are far from exhausting the possibilities of latex or rubber "milk." Apart from its well-known uses, patents are out for its use as a perservative for eggs, fruit, and plants. It is also extensively employed for upholstery, flooring, road surfacing, wallpapering.

The tapping of the rubber trees for this precious latex still remains a simple process carried out by manual labour. It is useful to reflect how many of our great industries, which in later stages depend almost entirely on giant, complicated machines, rely in the first place on the work of one man the unskilled Malay labourer, for whom there can be no mechanical substitute.

His work consists of cutting the bark and setting a cup to catch the white latex which runs between bark and wood. At the end of the day he collects these cups and pours their contents into a large tank—a primitive form of labour which can in no way be mechanized or hurried.

When the roadway is a skidway, beware of rapid acceleration, quick stops and sudden swerves. Also deadly are excessive speed, especially on turns, and uneven braking.



To slow down, pump the brake gently; don't hold it down steady. Under skid conditions, never try to stop suddenly, but check your speed a little at a time.

Calcium Spurs Milk Production

A 46 per cent. increase in milk production as a result of supplying sufficient calcium in the ration of dairy cows is reported in a 16-year study of R. B. Becker, dairy husbandman of the Florida Experimental Station. Cows given rations containing too little calcium produced an average of only 4,856 pounds of milk in 218 lactations, whereas cows getting sufficient calcium yielded an average of 7,092 pounds of milk in 73 lactations.

Florida and other states where pastures and other feed crops are grown on acid, sandy soils may be inadequate in lime, which supplies calcium.

To overcome the shortage, Becker and his co-worker, P. T. Dix Arnold, added two per cent. of finely ground steamed bonemeal to the dairy concentrates. In addition, the heavy milk producers received a limited amount of alfalfa hay. These supplements afforded enough calcium for Jersey cows in commercial herds. More recently, however, one per cent. each of bonemeal and kalsite (marble dust) replaced the two per cent. of bonemeal.

Deficiency of calcium may be corrected by spreading lime on improved pastures. Then, too, lately, manufacturers of mixed dairy feeds in the Southeast are making up for the lack of calcium by including bonemeal and finely ground limestone in their feedstuffs. — Country Gentleman.

Mrs. Brown: "For months I couldn't discover where my husband spent his evenings."

Mrs. Smith: "How did you find out?"

"Well, one evening I went home and there he was."

Where "Holy Cow" Isn't Slang

"Holy cow!" exclaimed my American friend casually, not realizing that in India this expression would not sound funny, for to most Hindus the cow is a sacred animal.

Yet it is surprising how quickly a young Hindu, when away from home, starts eating beef and thinks nothing of it. Miles away from the influence of his orthodox elders, he views the cow as a very useful animal, but fails to see the halo about its head, writes Chaturi Vaswani in The Christian Science Monitor.

In America, the cow is pastured on farms and dairies. In India, it has as much right to walk on the crowded streets of a city as any person. It is not uncommon to see a cow holding up traffic while it nonchalantly crosses the street or forces pedestrians to detour off the sidewalk while it gazes at the store displays — window shopping as it were. The cow even wanders into the crowds at the food market and helps itself to the food.

* * *

Now, why does the cow in India have privileges that even a human being cannot claim in any country? Jaywalking, food steeling, and becoming a hindrance on the man street are illegal acts. However, these man-made laws do not affect the cow in India. But there, the cow is "sacred" and the man is not.

Economically, the cow and the bull are the two most valuable animals in India. The cow furnishes milk and all its by-products. Farmers harness the bull to plow the land. India, therefore, depends entirely on the cow for its food supply and so treats the cow with a reverence due to the mother who provides food for her children. In fact, the cow is often called 'mother cow."

However, the idea of reverence has in some cases been carried too far. Temples have been built for the worship of the cow. Many religious ceremonies include the feeding of the cow as one of the important items of the ritual. Hindu women often start their day by feeding the cow. Any stray cow is welcome in their back yards.

The real motive behind this reverence has been forgotten. Being a useful animal, the cow has to be perserved for its practical value. Reverence is one way of protecting the animal from physical harm by men who might kill it for meat. That is why beef is taboo among the Hindus, most of whom do not eat any kind of meat anyway.

But to believe that it is sacrilegious for a Hindu to use anything of the cow, including the milk, is a misconception. Milk is widely used when available, the cow's skin is used for leather, and its horns are carved into beautiful figures for living-room decoration.

* * *

The only real offense against the cow is killing it for food or for anything. In some parts of India the penalty for killing a cow, even by accident, is a few years in jail. People have established homes for the aged cows where they are well taken care of. That is more than they done for human beings.

But the times have changed and the old customs cannot continue for long. The population of the cows, as of people, has increased immensely in India. Not enough fodder is grown. Moreover, the modern materialistic Indian works his animal to the bone and tries to get as much out of it as possible.

One criticism levied against the Hindus is: Why can't they let some of these miserable-looking creatures be slaughtered and fed to millions of starving people?

The answer to this criticism is that it is hard to change traditions. For a people brought up in the tradition of respecting the cow, it will be years before any change of attitude is brought about.

However, some daring young men have broken away. They have seen better cattle and better farming methods in other countries and wish India would adopt similar practices. They no longer consider the cow a sacred animal. Their prejudice against beef-eating has vanished, too, for they eat beef as willingly as any other meat when away from home. For this they have to account to their elders on returning to India. But they get away by saying, "We were eating American cows. They aren't 'sacred,' are they?"

Expert Advice

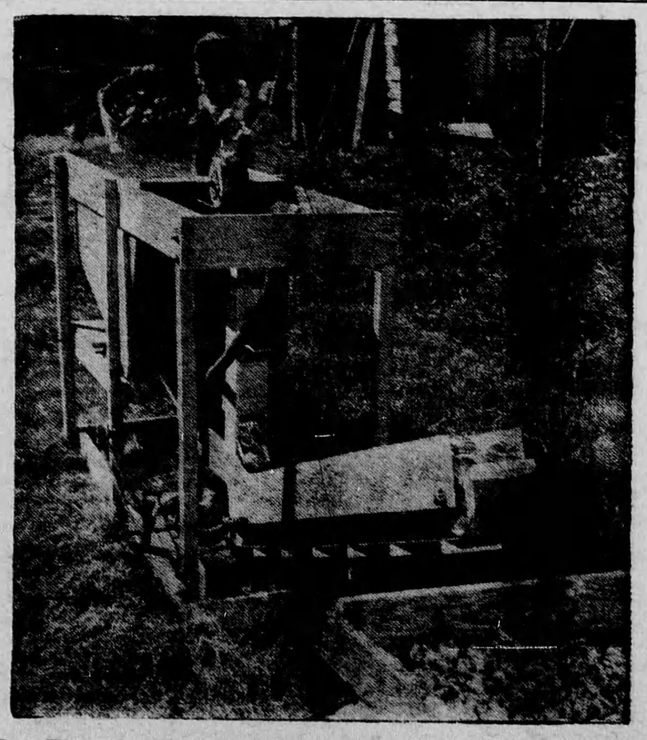
Visiting the farm for the first time in her city-bred life, little eight-year-old Rebecca, the daughter of a filling station operator, was thrilled by the many things her grandfather showed her. The big turkey gobbler, soon to be killed for Christmas dinner, frightened her; and she was astonished to discover that the ice on the pond was thick enough to bear her weight.

Most of all, however, she was fascinated by the cow. Several afternoons she went with her grandfather to the barn and stared wide-eyed as he milked. On a nippy December day when she was anxious to return to the warmth of the farm house, she ventured to tap him on the shoulder and suggested, "Grandpa, if you'd put alcohol in her radiator, you wouldn't have to drain her faucets every night!"

"Wool" from Rocks

British geologists engaged in research work in the Hawaiian Islands found a fluffy fiber made of the same substance as the rocks on the slopes of the volcano. Since this fiber was probably produced from lava during a volcanic eruption, the British scientists concluded that "wool" could be made from other rocks too. After two years of experiments at the Matlock, England, works of a British limestone firm, a method has been evolved whereby limestone and other silicious rocks are transformed into a fine wooly substance which is a first-class heat and sound insulator and is fireproof and vermin-proof. The wool will be used primarily in heat insulation, but it is probable that it will also be used as a heat conserver in all building construction.

An infallible way of impressing people favourably is to let them see how much they impress you.



Boy Electrifies Farm—After running the gamut of 16-year-old Johnny Williams' dusting and counting machine, gladiolus bulbs are carried up by belt conveyor and dumped onto the screen in foreground. Johnny, was one of 35 winners in the "Better Methods" electric contest.

"Let's See You Do This" — Fritz, the dachshund of the Roy Miller family tries doggedly to make friends with the new china bulldog bank belonging to one of the Miller children. The hard-headed bulldog just sits.

JITTER — By Arthur Pointer