

## GEOLOGY

**In Canada's "North Country"**

Two eras of the conquest of America's natural resources lie side by side in Canada's "north country."

From Cochrane, the railroad junction point that lies a hundred miles from the lower end of Hudson Bay, prospectors still go out into the "bush" to pit their knowledge and luck against nature's secretiveness. During the short summer season the great northern part of the Canadian province of Ontario is spotted with geologists, engineers, and plain self-taught mining men searching for rocks rich in gold, silver, copper or other valuable mineral. Hundreds of square miles of territory are still inadequately explored.

Yet great modern industrial plants and pleasing towns exist within a mere thirty-five miles of the place where these prospectors outfit. At Timmins there is the largest gold mine in the western hemisphere and the world's second largest. At Iroquois Falls there is a great paper mill that converts forests into newsprint paper at the rate of 525 tons a day. Over the Quebec border but not much farther away is Rouyn, a new copper-gold mining camp that is now in approximately the same state of development as that of some of the western mining boom towns forty years ago.

To this great mineral storehouse the Princeton University Summer School of Geology, traveling on the special car "Princeton," has paid a visit. Aided by the experts engaged in mining operations and with the co-operation of the Canadian Geological Survey, a selected group of students and professional geologists have inspected some of the mines, mills and the rocks which are now pouring forth wealth at the rate of about a hundred million dollars a year.

This mineral treasury is some 500 millions of years old at least, for it consists of rocks known to the geologist as "pre-Cambrian." Over the largest portions of the provinces of Quebec, Ontario and Manitoba there is a great shield of these pre-Cambrian rocks in which there have been found important areas rich in metals. Pre-Cambrian rocks are the oldest found on earth. In part of them there is no trace of life and in others the remains of a few extremely primitive plants and animals have been preserved. But the violent changes in these rocks, the rush of hot masses into them and the great pressures that such changes pro-

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## SEISMOLOGY



FRANCIS ANTHONY TONDORF

**Watcher of Earthquakes**

There is an ancient Maya legend, which relates that when the gods gathered to make man, each gave the new being a gift, and the *teule* of the earthquake gave him—his pulse. Ever since that legendary time, man has been intensely interested in the great uneasy pulse of the earth, that is often so terribly destructive to him and his works, and among the most fascinating of the many fraternities of science is that of the seismologists, who keep their fingers constantly on that pulse and try to read the riddles of its stirrings.

There is perhaps no seismologist in America better known to the public at large than Father Tondorf. The first reports of an earthquake anywhere invariably mention his reading of its story on his instruments at Georgetown University. It hardly seems like a fully authenticated quake until the seal of his pet Galitzin seismograph has been placed on it. It is frequently stated, and so far never disputed, that he has the best-equipped station of its kind in America; and in addition to his indefatigable personal work in his own cave Father Tondorf has taken an active part in the organization of the Jesuit Seismological Association, which makes available to the scientific world the results of the coordinated readings of dozens of instruments in universities and colleges scattered over the United States.

Francis Anthony Tondorf was born in Boston in 1870. He early felt the call to serve in the double capacity of priest and scholar, and after preparation at Woodstock became a member of the Society of

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## MEDICINE

**Pellagra Epidemic Threatens**

Permanent relief for the pellagra outbreaks that have threatened the South whenever times are hard, may be one of the outcomes of the Mississippi flood. A farming program of diversified crops is the chief preventive for the deficiency disease that has broken loose in epidemic proportions in the inundated territory, according to the U. S. Public Health Service experts who have just completed a health survey of the flood area.

Modern preventive medicine that successfully warded off epidemics of typhoid, malaria, dysentery and smallpox in the flooded states has been powerless to check the spread of this poverty disease of unbalanced diet. Dr. Joseph Goldberger, nutrition expert, and Dr. Edgar Sydenstricker, statistician, declare that 2,300 to 2,500 deaths may be expected in 1927, an increase of from one-fourth to one-third over last year. The number of cases, they estimate, will run up close to 50,000.

Fresh lean meat, milk, cheese, green vegetables and eggs are the ammunition needed to prevent and cure this disease that has been an

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## PHYSIOLOGY

**Synthetic Thyroid Hormone**

The chemical composition of the active principle of the thyroid gland has finally been completely established by Dr. C. R. Harington and Prof. George Barger of University College, London.

These workers, who have received widespread recognition for their successful attempt to manufacture the hormone in the laboratory about a year ago, have definitely ascertained the position of the iodine atoms in the complex thyroxin molecule.

Clinical tests show that the synthetic product will reproduce the results of the natural thyroxin in cases of thyroid deficiency, the metabolic rate having been raised from minus 40 per cent, to normal in the course of a week by three or four intravenous injections of 4 to 5 milligrams on alternate days, it is stated in a report of the research to the scientific journal, *Nature*.

The production of thyroxin synthetically will assure a more standardized product and should have the effect of making the price much lower.

Science News-Letter, September 3, 1927

## Pellagra Epidemic Threatens

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unwelcome accompaniment of financial depression in the South for many years. The increase of cases in 1926, a year of low cotton prices, was 80 per cent. over the year before. Over half the cases this year come within the confines of the flood states of Arkansas, Mississippi, Tennessee and Louisiana, a section where it has been prevalent ever since the disease was first recognized in 1908.

Diversified farming in these states will go far toward stabilizing the economic status of the tenant farmer and helping him to raise for himself a supply of proper food, the Public Health Service officials point out. The establishment of swine, cattle and poultry industries should be encouraged as well as community or plantation dairies and truck patches, they believe, if the poor white and negro population are to fend off inroads of pellagra in the future.

Immediate measures recommended are the supply of relief agencies in the flood areas with foods rich in pellagra preventing vitamins.

Science News-Letter, September 3, 1927

African natives often hunt the hippopotamus for food.

## BINDER COVERS FOR SCIENCE NEWS-LETTER

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## Watcher of Earthquakes

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Jesus. He has been a member of the faculty of Georgetown University since 1902.

In addition to the seismological work for which he has been chiefly noted, he has turned a ready hand to a dozen tasks at his university: physics, astronomy, geology, botany, zoology. But now he has been relieved of all extraneous tasks, and is free to devote his entire energy to the development of his beloved science of seismology.

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Germany exported almost 3,000 tons of thermometers last year.

A silencer for riveting machines is being tested out in Washington.

The biggest spiders found in Guiana have bodies over three inches long.

Nails cause injuries to 18,000 persons each year in New York State alone.

Dark rubber exposed to sunlight keeps its life longer than light colored rubber.

The Greeks and Romans covered the hulls of their fighting ships with iron plates.

A machine which plants individual grains of seed has been patented by an Austrian inventor.

Heart wood, the center of the tree, is more resistant to decay than the sapwood of the outer layers.

Use of umbrellas in Roman days was restricted to men and women of high rank and distinction.

The U. S. Forest Service has a collection of 60,000 range plants, representing over 6,000 species.

A recent Swedish law prohibits antique furniture made earlier than 1860 from being exported.

Mustard gas released several hours before naval battles may play a strategic role in future sea fighting.

Jamaica is attempting to establish silkworm culture and is planting mulberry trees to feed the worms.

Milk Island, off the coast of Gloucester, Mass., has been presented to the state for a wild life sanctuary.

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duced were favorable to the concentration of gold, silver, copper and other minerals. This rich pre-Cambrian shield is interesting not only to the mining engineer and the prospector who hopes for riches but also to the geologist who is engaged in puzzling out the way in which the crust of the earth was formed.

One may logically expect to see gold in a gold mine. But in the Porcupine gold district it is possible to walk throughout miles of stopes and witness the whole milling process without seeing even a speck of the shining yellow metal. The inspection of a choice piece of ore through a magnifying glass may reveal a few bits of gold but the ordinary visitor would have little chance of finding out what sort of a mine he was visiting if he were not told. When it is realized that the average ore of the Hollinger mine at Timmins, for instance, runs only \$7 to \$8 a ton in gold value, with gold worth about \$20 an ounce, the reason for the invisibility of the metal in the ore is apparent. Since 6000 tons go through the crushers and intricate milling process of that mine each day, it will be realized that a considerable quantity of gold is being added daily to the precious metal vaults of the world.

To the rocks of the Cobalt district, Ontario's silver center, nature was more bountiful. In the mines around Cobalt, chunks of native silver can be seen and easily identified in choice veins. Here also silver is found in combination with other elements. Since silver sells now for about a fortieth of the price of gold, silver ore must have a much higher metallic content in order to make the mining profitable. Cobalt has been one of the most successful mining areas of the world and while its heyday is over it is still a big producer.

A blacksmith working by the side of a railroad cut discovered the first silver ore at Cobalt. That was only 25 years ago. The railroad was being pushed into the virgin country to open it for farming. Undoubtedly the silver producing ground had been trapped over by prospectors many times before the railroad construction revealed it.

Seeing miles upon miles of unsettled country raises the question as to how many other mines of precious metal lie hidden still in Canada's great "north country."

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