MEDICINE

Anesthetics Relieve Minds

The centenary of the demonstration of ether as an anesthetic witnesses many dramatic uses of anesthetics other than for relief of physical pain.

➤ THE NEW-FOUND power of anesthetics to relieve mental anguish promises to become almost as valuable as their power to relieve physical pain, Dr. Henry K. Beecher of Harvard declared at the Massachusetts General Hospital's celebration of the one hundredth anniversary of the first public demonstration of ether anesthesia.

Wounded men during the war were sometimes saved from death by doses of an anesthetic drug too small to relieve pain but big enough to put them to sleep. One such patient described by Dr. Beecher was mad with pain. He writhed and tossed so that no one could properly examine or treat his wound. Morphine in dangerously large doses often failed to help in such cases. Only when the man had been put to sleep with a sleeping tablet, not a pain-killer, could the surgeons operate and close the wound.

Equally dramatic are the effects on mentally sick patients of this relatively new use of anesthesia. With its aid, physicians can probe the mind painlessly, just as the surgeon can painlessly probe the flesh for shell fragments in the anesthetized patient. The workings of the mind can be studied; it can be relieved and often freed of sick thoughts and feelings.

The quality of anesthetics that makes it possible to use them for this purpose of relieving mental pain and removing sore spots was discovered almost 50 years before the ether demonstration, whose hundredth anniversary was celebrated in Boston. Sir Humphrey Davy in the year 1799 while experimenting with nitrous oxide, the gas used by dentists for tooth extraction in modern times, realized that this anesthetic made it possible for him to get at levels of his mind not ordinarily accessible. Great strides have been made since then, but Dr. Beecher declared that "The potentialities for future discoveries in this field seem barely to have been tapped."

PORTRAIT PRESENTATION—Dr. Henry A. Murray (left) presented a portrait of Dr. William T. G. Morton, to Massachusetts General Hospital at its Ether Day celebration. Dr. Arthur W. Allen (center) and Dr. Nathaniel W. Faxon accepted the portrait on behalf of the hospital.

Ether Beginnings

➤ A NEWSPAPER reporter of a century ago, Albert Tenney, of Boston, was credited for helping bring to millions the boon of ether's relief from pain during surgical operations. His part in bringing about the first public demonstration of ether anesthesia just 100 years ago was reported by Dr. Reginald Fitz of Harvard Medical School.

Mr. Tenney had become a friend of Dr. William T. G. Morton, when the latter was a struggling young dentist with "a flair for publicity." As a result of this friendship, Mr. Tenney was present when Dr. Morton painlessly extracted an ulcerated tooth from a patient under ether in his office. Mr. Tenney's report in the Boston Evening Journal of this then astonishing feat was read by Dr. Henry J. Bigelow, a young physician whose father was president of the Massachusetts Medical Society.

Dr. Henry Bigelow's interest was so aroused by this newspaper account that he looked into the matter and, after watching Dr. Morton use ether in his office for extracting teeth painlessly, encouraged him to call on Dr. John C. Warren, professor of surgery at Harvard. The demonstration of ether anesthesia being celebrated followed.

Breast Cancer Not Simple

➤ IS THERE a simple way to prevent breast cancer in humans as there is in mice? Within the next 10 years scientists should have the answer.

It may be a big and disappointing NO. Women are warned against hoping too much and urged to wait for the answer before applying the method.

In mice, the method is never to let baby mice nurse from their own mothers if the mothers come from a cancer-bearing strain.

Discoveries leading to this were reported by Dr. John J. Bittner of the University of Minnesota Medical School at Ether Centenary. Some of the discoveries were Dr. Bittner's, while others were made by other scientists. In brief, the facts are these:

Mice get breast cancer from the action and interaction of three causes. These are a substance in breast milk, inherited susceptibility and hormonal, or gland, stimulation. Each is of nearly equal importance, so it is possible to control the in-

cidence of cancer by regulating any one of the causes. The most effective method, since it does not interfere with continuation of the stock, is to eliminate the milk substance by foster nursing.

These facts apply to mice. Surveys are now under way to find whether the same simple method will control cancer in women. The surveys are being made by the University of Minnesota and Ohio State University.

Science News Letter, October 26, 1946

GEOGRAPHY

Magnetic Poles Move

➤ GET OUT that old geography book and spot the magnetic north pole. The conventional location has been in Boothia peninsula north of Hudson Bay. Now it is in McClintock Sound.

Records of the world's leading magnetic investigators at the Carnegie Institution of Washington show that there has been actual movement during the past 40 years.

Here's the history of the imaginary spot to which the magnetic needle points:

Back in 1831, Capt. James C. Ross located the pole on Boothia peninsula in far northern Canada. Maps have had it there since. When the explorer Amundsen was in the region in 1904, he found the old location to be correct.

But after 1904, the pole began to migrate. Now it's more than 200 miles from where your school geography placed it.

Unpublished charts completed by the Carnegie Institution of Washington explain why compass needles on the "Pacusan Dreamboat's" flight from Honolulu to Cairo still pointed north as the big plane flew north of the proverbial location of the pole. The plane was still south of where the north magnetic pole of the earth is now. An earlier flight of the RAF Lancaster "Aries" in May, 1945, also showed that the pole had moved.

The south magnetic pole, too, has moved north and west about 200 miles in King George V Land in the Antarctic. But less attention has been paid it because navigators use the north-seeking point of the compass needle.

Science News Letter, October 26, 1946

MEDICINE

Hang-Overs Can Aid Cure

➤ HANG-OVERS are "significant events" in the life of an alcoholic. Proper handling of him at this critical period may sober him up permanently or at least add to his chances of eventually recovering from his Lost Week-End state.

This new and scientific approach to what most persons consider a nuisance or a subject for humorous remarks is taken by Dr. Giorgio Lolli of Yale University, director of the Yale Plan Clinic.

During the hang-over, both the psychological difficulties the alcoholic has been trying to escape through alcohol and the physical symptoms resulting from the alcoholism are magnified. In the early part of the hang-over the lingering presence of alcohol in his body depresses his central nervous system which includes the brain. Consequently he has less resistance and can more readily talk about the things in his life which drove him to drink. This gives the psychiatrist a chance to help him.

Medicines to relieve his misery and let him sleep are important first steps in the treatment Dr. Lolli outlines. The fact that he is being treated as a sick person and not a sinner helps the alcoholic. He gets more help when he finds that his mental and physical pain can be relieved by means other than alcohol.

Dr. Lolli does not approve of the "tapering-off" method of helping the alcoholic through his hang-over. In many cases the patient can be treated at the clinic or office, but some whose emotional and mental difficulties are serious and long-standing need to be put in an institution. The doctor should see the patient often, possibly every day, during recovery from the hang-over. This satisfies the alcoholic's overwhelming need for someone to depend on and makes it easier for him to keep away from liquor.

Details of Dr. Lolli's studies and method of treatment are reported in the *Quarterly Journal of Studies on Alcohol* (Sept.).

Science News Letter, October 26, 1946

MEDICINE

Bacteriophage Removes Infection from Wounds

➤ A NEW-METHOD of treating wounds with germ-eating bacteriophage was announced by Dr. V. Kolesov, Leningrad surgeon, at the meeting in Moscow of the All Union Congress of Surgeons.

The method consists in flooding the wound with the bacteriophage preparation. If the infection was localized in the surface layers of the wound, it could be removed by this method. Frequently used in Soviet military hospitals during the war, the method had beneficial effects in over 1,000 patients suffering from various surgical complaints, Dr. Kolesov reported.

Soviet doctors successfully used bacteriophages in dressing wounds to prevent severe complications. Localized applications to infected wounds of soft tissues gave positive results in 82.9% of such cases. The most effective preparation, Dr. Kolesov reported, proved to be the bacteriophage manufactured in the Metchnikov Bacteriological Institute in Moscow.

Science News Letter, October 26, 1946

CHEMISTRY

Natural Gas Product May Aid in Can Plating

➤ NATURAL GAS may be the means of freeing the United States from its present galling dependence on foreign sources for tin. Biggest use of tin, of course, is for coating sheet steel used in cans. A du Pont chemist, Milton J. Roedel, has invented a process for coating sheet metal with a solid polymer of ethylene, one of the constituents of natural gas, which is claimed to give at least as good protection as the conventional coating of tin.

The gaseous ethylene is turned into a solid suitable for coating purposes by subjecting it to very high pressures and moderately high temperatures. Dissolved in xylene and applied to black sheet steel in a layer one thousandth of an inch in thickness, then baked on, the polymer coating is flexible enough to withstand the bendings and crimpings encountered in can manufacture, and has high resistance to both acids and abrasion.

Rights in Mr. Roedel's patent, No. 2,406,039, are assigned to E. I. du Pont de Nemours and Company.

Science News Letter, October 26, 1946