MEDICINE

Nitrogen Is Breathed In New Treatment for Mentally Ill

Gas Administration Is Easier Than Insulin Shock And Does Not Produce the Convulsions of Metrazol

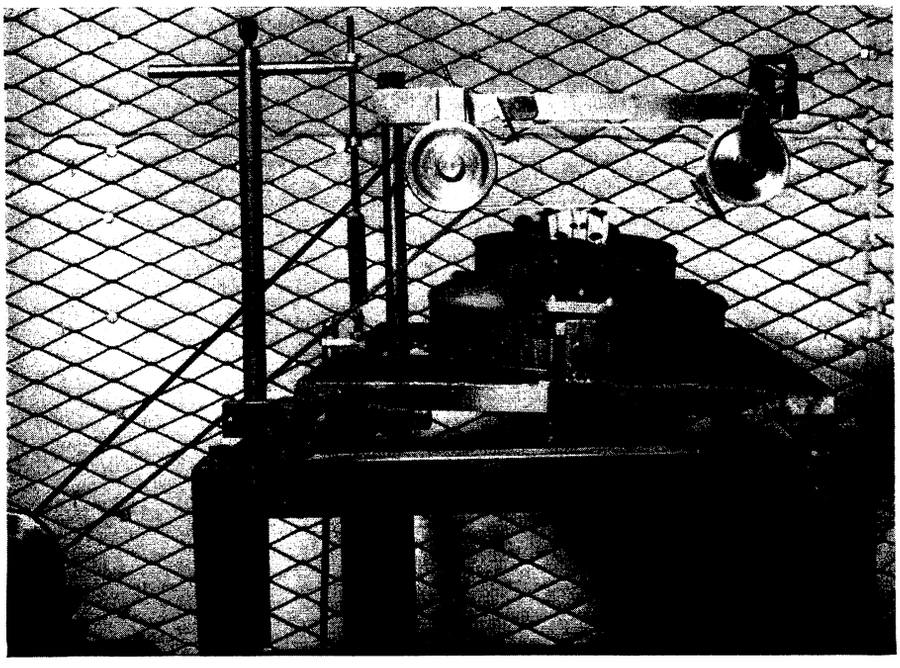
MENTALLY sick patients are now being rescued from the world of the insane by the simple and comparatively safe measure of breathing nitrogen. "Encouraging results" of this new, non-shock treatment for insanity in a small series of cases were reported by Drs. H. E. Himwich, F. A. D. Alexander, Basile Lipetz and J. F. Fazekas, of Albany, N. Y., Medical College and Union University to the Federation of American Societies for Experimental Biology, meeting in Toronto.

The new treatment achieves its effect by the same mechanism as the drastic insulin and metrazol shock treatments. This is by decreasing the metabolic activity of the brain. The nitrogen inhalation treatment, however, is easier to give than insulin shock and does not produce the fearful convulsions of metrazol treatments which are dreaded by both patients and physicians.

With the new treatment, patients breathe nitrogen long enough to deprive the brain of its oxygen supply for about five minutes. These treatments are given three times a week for a period of about three months.

Cutting down the oxygen supply to the brain reduces its metabolic activity. Metrazol does the same thing by temporarily arresting breathing movements. Insulin shock does it by depleting the sugar supply to the brain, without which the brain cannot use oxygen.

The fact that metrazol and insulin shock treatments both produced this effect of decreased metabolic activity was discovered a year ago by a University of Toronto research team under the leadership of Sir Frederick Banting and Dr. G. Edward Hall. At that time Dr. Hall predicted that neither insulin nor metrazol would be the last word in treatment of schizophrenia and that a better and less severe remedy would be found to replace them. The nitrogen inhalation treatment seems now to be that remedy.



MUSIC WITHOUT MUSICIAN

This mechanically played violin was described before the National Academy of Sciences by Dr. C. E. Seashore, of the University of Iowa. The mute, he found, although made of many materials, depends for its effect upon weight alone.

Insulin Sobers Alcoholics

DRUNKS, not ordinary ones but those who were completely "out" in serious alcoholic coma, were sobered up in two hours or less and able to walk alone within four hours by injection of sugar and the diabetes remedy, insulin, Drs. Walter Goldfarb, Karl M. Bowman and Samuel Parker of Bellevue and King's County Hospitals, New York, reported.

This sobering-up treatment works for any intoxicated person, Dr. Goldfarb said, but the results are most startling in cases of acute alcoholism. Although he and his associates have tried it on persons not acutely intoxicated, it is only being used for serious cases where there is danger of the patient dying or being very ill for a long time. The ordinary drunk, Dr. Goldfarb pointed out, will recover without any treatment. But this insulin-sugar treatment can be given by any physician in his office or the patient's home; it is not dangerous, and there is no reason, Dr. Goldfarb said, why it should not be given to any intoxicated person.

Insulin alone had no effect, the New York investigators reported, and sugar alone only helped in cases of severe intoxication where the amount of alcohol in the blood was over 300 milligrams per cent. Burning of alcohol and its consequent disappearance from the body, it was suggested, may be speeded by catalytic action of simultaneous oxidation or burning of sugar.

Reduce To Avoid Diabetes

AVOID eating many fat foods to avoid getting diabetes may be the advice doctors will give in the future as a result of research reported by Drs. Reginald E. Haist and Jessie Ridout and Prof. C. H. Best of the University of Toronto.

Doctors are already advising people to avoid overweight as a precaution against diabetes because overweight persons are known to be more likely to develop the ailment. The reducing diet for prevention of diabetes, if advised on the basis of the research reported, would cut down fat foods more than sweet and starchy foods.

Diets very rich in fats markedly reduced the insulin content of the pan-

creas in experimental animals, the Toronto investigators found. Lack of insulin, due to failure of the islands of Langerhans in the pancreas, causes diabetes. Diets very rich in carbohydrates, that is, in starchy and sweet foods, did not decrease the insulin content of the pancreas.

Test Aids Birth Control

BIRTH control by the calendar method may be put on a sounder and more practical basis as a result of a discovery announced by Dr. Richard Parmenter of Cornell University Medical College, Ithaca, N. Y.

A simple electrical test of a woman's fingertips, it appears from his report, may be all that is necessary to determine the so-called safe period on which the calendar method of birth control is based. Difficulty in determining the infertile and therefore "safe" period accurately has been an important obstacle to the rhythm or calendar method of birth control.

In seven out of eight normal healthy women Dr. Parmenter tested by recording the voltage of the minute electrical current at the tips of their index fingers, a marked rise in potential difference was observed to occur at some moment during the period generally considered "unsafe" because sometime during this period ovulation occurs.

If this change in potential difference marks the time of ovulation, it provides an accurate basis for calculating the "safe period." If such a test proves reliable it will also have the advantage of simplicity over other proposed tests.

Study Maturing Human Eggs

THE MATURING process of human eggs outside the body, both in glass vessels and when planted in female rabbits, is now being studied by Dr. Gregory Pincus, of Clark University, the scientist who has already caused considerable excitement by starting the development of so-called "fatherless" rabbit eggs.

These rabbit eggs were induced to start the normal processes of division and differentiation, without the intervention of the male elements or sperm cells, by treatment with salt solution and also by heat treatment.

The experiments with human eggs which Dr. Pincus reported are "distinctly not attempts to obtain human offspring," he emphasized. They are, in Dr. Pincus' words, "simply studies of the maturation of human ovarian ova."

The human eggs for these experiments were obtained from ovaries removed by surgical operation. They were nourished on human blood serum. One group was given no other treatment. Within eight and one-half hours half of these eggs were "activated," that is, started on the first stage of the process toward "maturing." Eggs in other groups were stimulated by treatment with sperm extract for from 15 to 20 minutes. A slightly smaller percentage reached the same stage of activation. Others were stimulated by heat or salt solutions. About two-fifths of these were also activated. Foster-mothering to the extent of transplanting the treated eggs to rabbit fallopian tubes did not increase the percentage of those activated. Activation of the eggs is a sort of growing-up process in which the eggs get ready for fertilization.

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GENERAL SCIENCE

Dr. Frank B. Jewett Elected President of National Academy

Head of Bell Telephone Laboratories Has Directed Revolutionary Research in Telephony and Pure Physics

See Front Cover

SCIENTIFIC research supported by industry received high recognition at the annual meeting of the National Academy of Sciences, in the election of Dr. Frank B. Jewett, head of the Bell Telephone Laboratories, to the presidency of this body of America's senior scientists.

From the laboratories under Dr. Jewett's direction have come not only many revolutionary inventions and improvements in telephony, sound equipment, and wire transmission but also researches of great consequence in the field of "pure" physics.

Two vacancies on the governing council of the Academy were filled by the election of Prof. Charles A. Kraus of Brown University and Prof. Alfred N. Richards, University of Pennsylvania.

Election as Foreign Associates, the highest honor which the Academy can bestow upon overseas scientists, was accorded to two Britons and one Netherlander: Sir Joseph Barcroft, noted physiologist of Cambridge University; Sir William Bragg, physicist of the Royal Institution, London, who delivered the principal address of the meeting just closed; and Dr. F. A. Vening Meinesz, geophysicist of the University of Utrecht, already well known in this country through his underseas researches in submarines, in which the U. S. Navy participated along with American scientific institutions.

Fifteen new members were elected to membership in the Academy: Dr. Gregory Breit, University of Wisconsin, theoretical physics; Prof. Detlev Wulf Bronk, University of Pennsylvania, biophysics; Dr. William Bosworth Castle, Harvard University, medicine; Dr. Frederick Gardner Cottrell, Research Associates, Inc., chemistry; Prof. Frederick Parker Gay, Columbia University, pathology and bacteriology; Dr. Albert Baird Hastings, Harvard University, physiology and chemistry; Prof. Vladimir Nikolaevich Ipatieff, Universal Oil Products, chemistry; Prof. Merkel Henry Jacobs, University of Pennsylvania, zoology; Dr. Zay Jeffries, General Electric Company, metallurgy; Dr. Donald Forsha Jones, Connecticut Agricultural Experiment Station, genetics; Prof. George Bogdan Kistiakowsky, Harvard University, chemistry; Prof. Warren Judson Mead, Massachusetts Institute of Technology, geology; Dr. Oscar Riddle, department of genetics, Carnegie Institution of Washington, biology; Prof. Adolph Hans Schultz, Johns Hopkins University, embryology; Prof. Philip Edward Smith, College of Physicians and Surgeons, Columbia University, anatomy.

Four Medals Presented

AT THE Academy's annual banquet four medals and awards for notable work in science were made, three to Americans and one to an English guest.

The Agassiz medal for oceanography was presented to Dr. Harald Ulrick Sverdrup, of the Scripps Institution of