

MEDICINE

Tobacco Substitute Fails

➤ **SMOKERS WHO SUFFER** from chronic bronchitis, tuberculosis or other diseases made worse by nicotine cannot expect help from the alkaloid lobeline, now being promoted as one of several smoking deterrents.

A research committee of the British Tuberculosis Association reported in the *British Medical Journal*, Aug. 24, that tablets containing the lobeline drug had been given to volunteers with no more effect than inert tablets.

Large doses of lobeline drugs cannot be tolerated because of causing abnormally slow heart beat, or bradycardia, low blood pressure and constriction of the bronchial tubes, the report said.

Because the pharmacological actions of stimulation are similar to those of nicotine, however, small doses of lobeline preparation have been recommended for some time as an aid to giving up smoking.

Lobeline is an alkaloid of *Lobelia inflata*. This Indian compound was formerly used by the American Indians, either like tobacco, or with tobacco. It has also been used as a powerful but dangerous medicine to cause vomiting, as a respiratory stimulant and in cases of whooping cough and asthma.

The British experiment was carried out

in 11 chest clinics. The persons who took part regularly smoked 20 or more cigarettes a day, and personally wanted to give up smoking for several reasons, including the effect of smoking on their health.

No one was coerced into joining the trial. No one knew whether he was taking an inert tablet (placebo) or the drug. The doctors also were unaware of which of the two tablets they were giving in order to control the experiment.

The dosage consisted of one tablet of either the lobeline drug or the placebo four times a day for six weeks. The inert tablets tasted like the drug but contained 15 milligrams of quinine sulfate instead of the two milligrams of lobeline in the other tablet.

If by the sixth week, the subject was smoking 50% or less of the number of cigarettes he smoked in the week before the trial began, he was classified as a success.

But findings showed that persons were just as likely to reduce their smoking if they had taken either of the tablets. Likewise, they were just as likely to return to former smoking habits if they had been on the placebos as on the lobeline drug.

• *Science News Letter*, 84:150 September 7, 1963

MEDICINE

Mines Cause Lung Cancer

➤ **WORKERS** in metal mines have three times more lung cancer than others in surrounding communities.

Cigarette smoking is not the cause of the increase, researchers reported in the *New England Journal of Medicine*, 269:284, 1963. Previous studies in uranium mines, both of Colorado and Central Europe, have pointed to radioactivity as a cause of lung cancer and other respiratory diseases, but this study indicates that chemicals inhaled "singly or in combination" are to blame.

Pollution from smelters or other industries could have caused some of the lung cancer among miners and other residents of the unidentified communities, the investigators said, but proof is not now available.

Although the definite cause of lung cancer among these miners has not been shown, the presence of a cancer-causing agent mixed in the air of the mines "appears likely," the researchers said.

The radioactive element radon was present in the mines studied, but because of improved ventilation, radon levels were probably five to ten times lower than previously.

Other studies have shown that occupational exposure to silica dust does not predispose to lung cancer even when silicosis is present, so although silica was present in the mines, it was not considered a cause. Also present were sulfur, iron, copper, zinc, manganese, lead, arsenic, calcium, fluorine, antimony and silver.

Iron dust is suspected of causing lung

cancer but laboratory tests do not prove its effect. Also, arsenic has been associated with various types of cancer although this relationship is disputed.

More studies are recommended by these investigators, all of whom are associated with the National Cancer Institute, Bethesda, Md. They are Drs. Robert W. Miller, Frank E. Lundin Jr., Joseph F. Fraumeni Jr., and Marian E. Haij and Joseph K. Wagoner.

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DENTISTRY

Seed Hulls Help Prevent Tooth Decay in Rats

➤ **SEED HULLS** of oats, rice, peanuts, pecans and cotton may reduce tooth decay, nutritionists read in *Nutrition Reviews*, 21:244, 1963.

In one experiment cotton rats were given a diet that induced decay, supplemented with 15% ground rice hulls. Those rats receiving the supplemented diet for the full 80 days had a 60% reduction in cavities, while those rats who received the supplemented diet for 10 days only had only a 15% to 24% reduction in cavities.

Ground oat hulls fed white rats in 30-day or 84-day periods protected against decay effectively. Age, growth rate and tooth maturity account for the differences, the scientists decided.

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STATISTICS

U. S. Infant Mortality Decreasing Very Slowly

➤ **THE UNITED STATES** infant mortality rate is decreasing very slowly. In 12 years it has dropped from 29.2 deaths per 1,000 live births only to 25.3 per 1,000—a decrease of 13.4%.

In 1950, the U. S. had the sixth lowest mortality rate for infants in the first year of life of any nation in the world. By 1962, this country had slipped to 11th best, statistics from the World Health Organization show.

The U. S. infant mortality rate is higher than that of most of the Scandinavian countries, Australia, New Zealand, Switzerland, Great Britain and Ireland.

The U. S. is improving less rapidly than some of these countries, as well as many other countries. If present trends continue, this country may well be 16th or 20th by 1970.

To remedy this situation, greater emphasis must be placed on prenatal care and on care of children in the first month of life, in the judgment of Mrs. Katherine B. Oettinger, chief of the Children's Bureau, U. S. Department of Health, Education and Welfare.

Of U. S. infant mortalities, 70% occur in the first month, 40% in the first day. Mortality among premature infants is particularly high.

Care to avoid overexertion, exhaustion and shock by expectant mothers can reduce the incidence of premature births and infant mortality by a considerable margin. Special care for weak and sickly infants will also reduce the toll.

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MEDICINE

Implanted Pacemaker Adjusts Heartbeat

➤ **THE HEARTBEAT** of two patients with complete heartblock was regulated at the Lankenau Hospital, Philadelphia, by an implanted pacemaker.

A frequency control for this type of pacemaker was used in a further refinement of the pacemaker, which electrically stimulates the heartbeat at a constant rate.

The frequency control includes an induction coil and power supply. When the coil is placed on the surface of the skin overlying the implanted pacemaker, the heartbeat can be adjusted from 64 to about 126 beats a minute.

The researchers, Drs. George J. Haupt, Richard N. Myers, James W. Daly and Newton C. Birkhead, reported in the *Journal of the American Medical Association*, 185:87, 1963, that while the patients were at rest, the constant rate of the pacemaker at 60 to 64 beats per minute was satisfactory. However, when the patient's activity increases, the amount of oxygen consumed is several times more than when he is at rest. Thus, a small increase in the total blood pumped by the heart may be an advantage.

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