



A GALLACKER

This North Carolina girl facing the morning sun is hunting galax leaves, laurel sprays, *Leucothoe* and other evergreens for Christmas decorations.

## MEDICINE

## Influenza And Colds Are Attacked From New Angle

### Repeated Inoculations of Virus Are Followed By Changes in the Nasal Membranes of Animals

A NEW line of attack on the common cold and influenza is being made in the laboratories of the International Health Division of the Rockefeller Foundation.

The attack is centering on changes occurring in the nasal lining membranes during a cold or an attack of influenza—changes which may give you resistance or immunity to colds and 'flu and similar infections of nose, throat and other respiratory organs.

Drs. Thomas Francis, Jr., and C. H. Stuart-Harris have found such changes in nasal membranes of ferrets which received repeated inoculations of influenza virus.

If they could find a way to induce such changes by permanent alteration of human nasal linings, it might be possible to confer resistance to influenza and the common cold in man.

The changes in the ferret nasal membranes, described in the *Journal of Experimental Medicine*, (December) are

changes not so much in the structure of the membranes as in their functioning. In the ferrets the changes result in complete resistance not only to the influenza virus itself but also to chemicals.

The immunity or resistance thus induced is entirely a matter of cell resistance and has nothing to do with immunity in the usual sense. The latter immunity depends on the existence in the blood of germ-fighting substances called antibodies.

Both mechanisms, antibody formation in the blood and changes in cells, probably interact to produce complete immunity to infection.

When the change in the nasal linings has once been induced, even after the resulting resistance has worn off and the animal is again susceptible to influenza, the nasal linings go through the change very rapidly when the next infection comes. These changes after the first one are so rapid that there are

scarcely any symptoms of the infection that could be recognized as sickness.

Turning from ferrets to humans, the Rockefeller scientists want first to find out whether such changes occur naturally in human nasal linings during colds or influenza. Two other important questions to be answered are: (1) Can these changes be induced artificially, so as to give immunity to these ailments? (2) Would it be good from the physiological standpoint to induce such changes or would they interfere too much with the normal function of the nose?

*Science News Letter, December 17, 1938*

## MEDICINE

## Scientists Still Seek Perfect Anesthetic

GENERAL anesthetics have been used to produce pain-free oblivion during surgical operations for nearly 100 years, but the search for an ideal anesthetic still goes on in laboratories and operating rooms all over the world. Large numbers of chemicals have been tested for anesthetic properties, but, while some are better than others, none of them can be called perfect.

"A perfect general anesthetic," says Prof. V. E. Henderson of the University of Toronto, Can., Faculty of Medicine, "should produce not only absence of pain and loss of memory of the operation, but complete unconsciousness and such a deep depression of the central nervous system that painful stimuli do not produce any muscular reflexes and have as little effect as possible upon the respiratory, cardiac or other medullary reflex centers. It should further produce a state of very low tonus in muscles; complete relaxation of abdominal walls, as the surgeon puts it.

"It should produce its effect quickly without setting up undesired reflexes from the respiratory passages or elsewhere, and be free from direct stimulant effect on the basal ganglia when in low concentrations in the body. Its effects should pass off quickly and completely, leaving no indication of its action. Lastly, it should allow of the inhalation of adequate amounts of oxygen throughout its administration.

"No anesthetic has as yet fulfilled all these requirements."

Besides these effects on the body, the ideal anesthetic should have certain physical and chemical properties. It must have high solubility in lipoids as compared with its solubility in water. Lipoids are fatty substances found in the body. The ideal anesthetic must also