

## Do You Know?

Soldiers in combat areas get two-thirds of their *food* from cans.

More than a million *earthworms* may live in one acre of good farm land.

Most of the *islands* of the Pacific are either volcanic cones or coral atolls.

Over 40% of Germany's *potato* crop, will be used this year to make power alcohol.

Booklets on the art of *make-up* are distributed to soldiers using cosmetics for camouflage.

The civilian *soap* supply for next year is expected to be 22 pounds per person, or five pounds more than for this year.

Five *coyotes*, recently captured in Texas, were responsible for killing 500 turkeys and 450 sheep during the past year.

*Arsenic* in various forms, alone or in combinations, has been long used satisfactorily as a wood preservative for poles and fence posts.

The Army Medical Corps uses a portable *X-ray* machine that can be assembled in six minutes and will locate foreign matter in a person in less than a minute.

Steam used in World War I to fumigate soldiers' *uniforms* left them wrinkled and often shrunken; methyl bromide fumes are used now and do not affect the clothes.

At the Western New York *egg-laying* contest just closed, a Rhode Island Red hen broke all previous records by laying 351 eggs in 357 days; the eggs weighed 48 $\frac{1}{4}$  pounds.

Low-grade *ores* containing copper, cobalt and gold in Lemhi County, Idaho, may soon be processed again because of newer flotation separation methods; over 200,000 tons of ore has been located.

The investment of the federal government in facilities for the conservation and use of western *water resources* amounts to \$870,000,000, covering huge dams, hundreds of miles of canals and electric power plants.

### PUBLIC HEALTH

## International Health

Post-war international cooperation in the health protection field is already well under way, according to statements of health directors of foreign countries.

➤ POST-WAR international cooperation is already getting under way in the field of health protection.

Signs of action along this line as well as intense desire for all nations to work together to protect the health of all people everywhere appeared in statements from the health directors of Great Britain, the Soviet Union, China, Egypt, Australia and seven Latin American countries to the wartime conference of the American Public Health Association in New York.

"The special problem of the present and the future is malaria and I can assure you that the Governments of our two peoples have completely interlocked their plans for dealing with this terrible menace," the Right Honorable Ernest Brown, Britain's Minister of Health, declared.

Large scale plans being made "by our Governments acting in concert" for post-war relief of peoples being freed of Nazi tyranny cited by Mr. Brown give further evidence that post-war international cooperation in health protection is reaching the action stage.

"Let the Pan-American ideal, the greatest of the ideals of America, be not alone a political and economic ideal, but be also an ideal of life and vigor," Mexico urged through Dr. Victor Fernandez Manero, director of the Department of Public Health.

"Just as we are fighting this war for global security, so we must work together for global health," Dr. Wei Tao-Ming, Chinese Ambassador to the United States, declared.

This theme appeared also in the statement from Prof. Vladimir Lebedenko representative of the Soviet Red Cross and Red Crescent of the U. S. S. R. who said, in part, that erasing "the horrible ravages of war" must be done "not by one people but by all together, in unity for the betterment of life and for the future of all mankind."

Dr. Guillermo Garcia de Paredes, Director of Health for Panama; Jules Thebaud, Director General of Haiti; Dr. Albert Recio, Director of Health and Social Welfare for Cuba, also urged greater international cooperation in health protection.

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### New Three R's for Peace

➤ A NEW SET of three R's "essential to the complete achievement of our peace objectives" were introduced to the conference by Dr. Felix J. Underwood, Mississippi state health officer.

The new R's stand for restoration, rebuilding and rehabilitation. In planning for these objectives, Dr. Underwood said, public health leaders expect the individual citizen to have a larger share in their fulfillment.

"Motivated by a desire for permanent peace and a safe and pleasant place in which to live, he will surely assume an increasing amount of responsibility in putting to work the vast store of helpful knowledge on health practices which has evolved in recent years."

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### SOCIOLOGY

## Cultural Lag May Come

➤ UNLESS a new social order is created after this war, we shall face a period in which cultural progress will be seriously diminished, or even arrested, Prof. Leslie A. White of the University of Michigan predicts. (*American Anthropologist*.)

Civilization has developed as man learned to make the energy of the sun work for him, Professor White explains.

At first man did not know how to avail himself of this hidden energy. Aside from only occasional and insignificant uses of wind, water and fire, early man had only the energy of his body at his disposal for culture building.

The first great cultural advance came when man harnessed energy from the sun by cultivation of plants and domesti-

cation of animals. The art of harnessing the energy of coal and oil in engines created the Power Age, the next great cultural advance.

Technological activity is stimulated or repressed by the existing social system, Professor White declares. Using the art of agriculture as an example, he points out that from 2000 B.C. to 1800 A.D. there was no fundamental improvement. The reason for such a cultural lag, even though the urge for security and efficiency was as great then as now, was that the social system obstructed technological advance, Professor White states.

To obtain more wealth, he explains, the ruling class merely increased taxes, rents or other levies upon the producers of wealth. If the masses produced more by increasing efficiency, it would only mean more for the tax-gatherers of the ruling class. Lack of incentive inherent

in the social system thus discouraged agricultural improvement for almost 4,000 years.

Professor White then discusses the inadequacy of our social system for our technological system: "At the present time our technology has outgrown our social system; the great forces of the Power Age are straining within the confines of institutions that were fashioned in stage coach days. The great wars of the Twentieth Century are expressions of this cultural conflict, and are chiefly significant for one reason: they are the means by which an old order is to be scrapped and a new one brought into being."

While not specifically describing social changes which may take place, Professor White predicts that they will be as profound and far-reaching as those effected by World War I, if not greater.

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#### MEDICINE

## Vaccine Against TB

► INCREASED possibility of preventing tuberculosis by vaccination is seen in research by Dr. Truman Squire Potter, of the Laboratory of Preventive Medicine of the University of Chicago, according to an announcement from the University.

The vaccine which Dr. Potter believes will be effective, although it has not yet been tried on human beings, is made

from tuberculosis germs that are killed by suffocating them. Vaccines against tuberculosis have in the past been made either from living but weakened strains of the germs or from germs that were killed by heat or chemicals. None of these has been generally accepted as safe and effective, although promising results have been reported with B.C.G.

vaccine, made from living, attenuated tubercle bacilli.

The suffocation of the tuberculosis germs must be done under carefully controlled conditions which include an absence of oxygen, presence of moisture and a temperature high enough to keep the germs' metabolism active. Under these conditions, the germs die partly as a result of self-sabotage. By continuing their living processes they deprive themselves of oxygen as they breathe, and since no more is supplied them, they suffocate.

Destruction of the germs by this method, Dr. Potter believes, is less likely than other methods to reduce or destroy the tuberculosis antigen. Antigen stimulates the body's defensive mechanism so that, when vaccination is successful, the body defenses are ever on guard in suitable strength to overcome fresh invasion of the germs that produce the antigen. This is the principle of vaccination in general. In the case of tuberculosis, the problem has been to find a way of getting enough antigen into the body to develop immunity without giving so much or giving it in such form, for example in living germs, that it will cause tuberculosis.

In his latest research, reported to the Society for Experimental Biology and Medicine, Dr. Potter used a vaccine from asphyxiated human-type tuberculosis germs to protect rabbits. Of 33 vaccinated rabbits, only four showed minimal lesions of tuberculosis when large doses of virulent germs were injected into their veins after the vaccination. Of 33 unvaccinated rabbits, 25, including three that died, showed frequent severe lesions.

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#### BOTANY

## Laymen Often Mistaken About Poinsettia Flowers

See Front Cover

► WHAT APPEAR to be three-horned, grotesque creatures in the picture taken by Fremont Davis on the cover of this SCIENCE NEWS LETTER are actually the true flowers of a poinsettia plant. These naked pistillate and staminate flowers are clustered near the center of the whorl of brightly colored leaves which are popularly considered to be the poinsettia flower. (See SNL, Dec. 18) The cup-shaped receptacle on which the flowers are situated secretes a sticky substance that tastes sweet.



**CHRISTMAS PATTERN**—The reason for the popular belief that the red leaves of the poinsettia plant compose its flower is clearly evidenced in this photograph, taken by Fremont Davis, Science Service staff photographer, at the United States Botanic Garden in Washington, D. C.