

this bubbles up in the wound it tends to bring to the surface and help remove splinters too small to be seen; 3. Disinfection of the wound and application of the usual sterile dressing.

To prevent the condition, dust in the workrooms must be kept from spread-

ing by every possible means. Workers should wear protective uniforms. Their skin should be thoroughly cleaned at the end of each day to remove all dust and splinters on the skin. All dust should be periodically cleaned off tools and finished work, preferably by suction.

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BIOCHEMISTRY

Virus Probably Protein

Fresh evidence obtained with whirling super-centrifuge that particles of tobacco mosaic virus are really very large molecules.

► FRESH EVIDENCE that virus disease particles are giant protein molecules endowed with the life-like properties of reproduction and parasitic feeding has been obtained by Dr. Max A. Lauffer of the Rockefeller Institute for Medical Research at Princeton, N. J., it was revealed at the meeting of the American Chemical Society in Pittsburgh.

This new advance in science's war against disease was made through the use of a powerful weapon known as the ultracentrifuge, which whirls tubes of solutions at speeds far exceeding those of rifle bullets and cannon shells, separating substances or particles of different densities and sorting them in layers, as a cream separator separates cream from skim milk.

Identification of virus particles as giant molecules was made tentatively eight years ago by Dr. Wendell M. Stanley, also of the Rockefeller Institute, who first obtained a disease-bearing protein from sick tobacco plants in pure crystalline form. At that time it was learned that these suspected molecules are enormous, with molecular weights in the hundred-thousands, as contrasted with the mere tens or hundreds that represent the weights of ordinary molecules like those of sugar or gasoline.

Dr. Lauffer's feat in more definitely pinning the guilt for disease-causing onto the big, bad molecules was accomplished by means of a special container employed in the ultracentrifuge, in which an adjustable perforated barrier permits any desired fraction of the contents to be removed without disturbing the rest.

A solution of the disease virus was whirled in this container until just one-fourth of it remained above the barrier.

When this was removed and samples of it inoculated into healthy plants, it was found to have one-fourth the disease-causing ability of the whole solution. This constituted strong statistical evidence for the identity of protein and virus.

The virus on which the Rockefeller Institute researches have been conducted is that of tobacco mosaic, one of the worst loss-causers in tobacco fields. However, that in itself is of less importance than the possibility of transferring the conclusions to apply also to other disease viruses, which include the microscopically invisible causes of such serious human ills as infantile paralysis, yellow fever, smallpox and influenza.

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MEDICINE

Blood Donations by War Workers Get Okay

► WAR WORKERS form an impressively large group among patriotic Americans who are giving blood to the armed forces through the American Red Cross. They are doing this regularly, without danger to themselves, and without any slow-down in their work production, it appears from a report from the Industrial Hygiene Foundation.

One industrial company, before encouraging its workers to give blood to the Red Cross, recently asked the Foundation whether giving a pint of blood would make the donor weaker or more susceptible to colds or other diseases and whether it would cause absenteeism or slow production.

The Foundation referred the questions to members of its medical committee and to Dr. G. Canby Robinson, national director of the Red Cross Blood Donor Service, and to the technical director, Dr. Earl S. Taylor. The answers were unanimous that war workers could safely give blood. Typical is this answer:

"We have one of the largest Red Cross donor stations here in Milwaukee. All of our large war plants are encouraging their employees to contribute their blood at two to three-month intervals. They have found no decrease in the efficiency of their employees, no increase in colds or other infections, and no increased fa-



SAFETY AND BEAUTY—An attractive headdress with flaming bombs has been designed by the Army Ordnance for women working in the arsenals. At work, to protect the hair, they must wear it in the manner used by the girl on the left. After hours, the girls prefer to wear it as shown on the right.

tigue as a result of the blood-letting. In fact, the psychological effect is a new stimulus to greater effort and improvement in morale, like a 'shot in the arm.'"

Dr. Taylor reported that in one large city where 10,000 consecutive donors were given follow-up cards, less than one in 100 of the more than three-fourths who replied had colds or sore throats in the week following the blood donation. This was less than the rate for colds among the general population of the community at the time.

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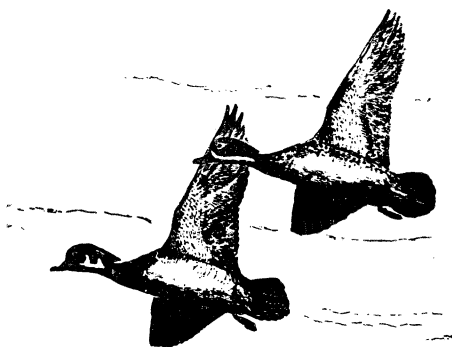
WILDLIFE

Lifesaver Made For Fish In Irrigation Ditches

➤ SERIOUS FISH losses are one of the great worries of irrigation system management; the fish wander from the stream into irrigation ditches, until they are at last stranded in the fields to die. Various kinds of screens are placed in flumes to stop them, but these get clogged with floating debris, interfering with the flow of the water.

Richard Roberts of Cokeville, Wyo., who has died since his application was filed, invented a cylindrical screen, kept rotating by a horizontal paddlewheel placed partly athwart the flume. Ribs at intervals on the cylinder bear projecting fingers, which pick up the debris and throw it out of the way. The water is thus free to flow, but the fish still cannot get through the screen barrier. Patent 2,328,297, issued on this invention, is in charge of Floyd L. Roberts of Cokeville, Wyo., administrator.

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DUCK STAMP—A "must" item for duck hunters and preferred by stamp collectors is this Federal migratory-bird hunting stamp, 1943-44 issue. The color is Indian red and it is reproduced from an etching by Walter E. Bohl, of Columbus, Wisc.

MEDICINE

New War Hazard

Added to all the other dangers and discomforts of war in the China-Burma-India theater is a new itching rash caused by laundry mark.

➤ ADDED to the hazards of war in the China-Burma-India theater is a distressing and in some cases temporarily incapacitating skin disease called dhobie mark dermatitis.

This new disease is an itching rash that breaks out on the neck, at the waistline and on the back or sides of the feet, ankles or lower part of the legs. It comes from contact with the marking fluid which native dhobies or washermen use for marking laundry, Maj. Clarence S. Livingood, Lieut. Arthur M. Rogers and Lieut. Col. Thomas Fitz-Hugh, Jr., of the 20th General Hospital, report. (*Journal, American Medical Association*, Sept. 4)

More than one-tenth of the men and one-fifth of the officers exposed to the marking fluid suffered with the skin trouble. Its importance "as a cause of disability in American officers and men in this theater," the medical officers comment, "is obvious."

Dhobie laundered clothes have previously been blamed for spread of a fungus infection of the skin popularly and medically termed "dhobie itch." This name is misleading, the medical officers state, and should be abandoned. The dhobie mark skin trouble is not a fungus infection, they found. Dhobie laundering, they indicate, may be hard on the clothes, buttons being broken "with disturbing regularity," but the process is not likely to spread fungus infection.

Dhobies mark laundry by pushing a straight pin through the hard capsule of the nut of the ral or bella gutti tree. The pin picks up enough dark brown or black fluid from the nut to make small crosses, dots or lines for identifying laundry. The marks are usually put on the inside of collar bands, inside the waistbands of shorts or trousers, and near the top or above the heel of socks. The regions affected by the skin trouble correspond to these locations.

The itching subsides and sores begin to heal as soon as dhobie-marked clothing is discarded. For persons sensitive to the dhobie mark, the officers advise: repeated washing of marked clothes; cutting out marked parts with scissors; furnishing dhobies with commercial in-

delible ink for marking; covering the marks with adhesive tape or similar material; or personal dhobies or self service without marking, this last being unsatisfactory but the safest for highly susceptible persons.

The natives, incidentally, have a common superstition that the ral or bella gutti tree has strong "likes" and "dislikes" for certain persons, "poisoning" its enemies when they approach the tree. The "poisoning" takes the form of severe itching skin trouble and the medical officers believe it may come from touching the leaves of the tree.

Lacking library facilities, the officers were unable to identify the tree except by the names of ral or bella gutti supplied by a line officer of the Indian army.

Their report recalls a U. S. Public Health Service finding, (*See SNL*, March 20) and now reported in detail to physicians in the *Journal of the American Medical Association*. This finding concerned an outbreak of skin trouble among employees of a government department in Washington who opened a sealed mail pouch containing among other things a bottle of thick black oil which had become partially opened and some spilled. The trouble, the federal health service found, was due to the oil which was labeled Bhilawanol Oil. It comes from the juice of the marking nut tree (*Semecarpus anacardium*), which grows in the tropical outer Himalayas and the hotter parts of India.

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ENGINEERING

Sixty Great Dams Designed By John Lucian Savage

See Front Cover

➤ GRAND COULEE dam, shown on the front cover of this week's SCIENCE NEWS LETTER, is just one of 60 major dams in the United States for which credit must be given to one designer, John Lucian Savage, who has been a public servant for 26 years.

Of these 60 dams, Grand Coulee and Boulder are considered the two mightiest weapons of this or any other war.

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