

## MEDICINE

# Hint Polio Vaccine Ready

Vaccine is apparently available for mass testing of perhaps as many as 25,000 small children against infantile paralysis during the coming year.

► BY THE end of next year hundreds, maybe even as many as 25,000, small children and their anxious parents and doctors will know that they have long-time protection against all three infantile paralysis viruses—if plans strongly hinted at are carried out.

A vaccine to do the job apparently is ready. This much seems clear from statements of Dr. Harry M. Weaver, director of research of the National Foundation for Infantile Paralysis, at a meeting of the Foundation board of trustees in New York.

If the Foundation decides the time has come to make field trials, the vaccinating will either be started within the next few months or not until fall. The reason for vaccinating either now or not until fall is to do the job before or after the big summer polio season when chance exposure to the virus would confuse the results.

That the vaccinating may be done this spring is suggested by Dr. Weaver's statement that the kind of progress made within the past several months is the kind "one is accustomed to see prior to the taking of an important forward step."

Dr. Weaver said he could not "with complete assurance" announce that field tests with a vaccine would be undertaken in 1953.

If the pattern of the Foundation-supported field trials of blood's gamma globulin is followed, some hundreds or maybe even as many as 50,000 children will get "shots." Half of them will get vaccine "shots." The other half will get a harmless substance that looks enough like the vaccine to fool everyone except a few persons in the know.

Starting six weeks after the vaccinations and continuing once a month for six months, blood from all the children probably will be taken for testing. The level of polio-fighting antibodies in the blood would be compared with that in the children's blood before the vaccinating and with that of the controls who got "shots" of vaccine substitute.

Depending partly on the results of this sort of trial, children in 1954 might all get anti-polio vaccination.

Dr. Weaver did not give any details of how the field trials would be conducted or where. They might be made on children in institutions who could be kept from contact with the polio virus during the summer epidemic season. Or the vaccinating might be done in the fall with idea of raising the antibody level to the desired point before the 1954 polio season.

The vaccine to be used would be made

from polio virus treated with certain chemicals, such as formalin, to make it incapable of damaging nerve cells but still able to call up antibodies. It would probably be given with certain oils to potentiate it and thus overcome the disadvantages of chemical treatment.

Successful vaccination of six children with a chemically treated virus was reported last fall by Dr. Howard A. Howe of Johns Hopkins University. The vaccine Dr. Howe used was made from viruses taken from brain and nervous tissue. (See SNL, Nov. 1, 1952, p. 282.)

Now, however, it is possible to grow polio viruses outside the body on non-nervous tissue. Specifically, they can be grown on monkey testicular tissue in the test tube. The viruses grown this way are considered safer to use than nervous tissue virus. Also virus grown this way can be produced in larger quantities, such as would be needed if the virus can be made into a safe and effective vaccine.

Important unanswered question about polio vaccine, however made, is how long it will protect against the disease.

For the coming polio season, best hope for protection may yet depend on blood's gamma globulin, shown in field trials last summer to be effective. But this material is in very short supply. There is not nearly enough for all American children. Who will get it this coming season has yet to be determined.

Science News Letter, February 7, 1953

## METEOROLOGY

## Track Jet Streams By Cloud Formations

► JET STREAMS, the 200 to 300 mile-an-hour wind currents high in the atmosphere that affect our weather, can be tracked by observation of cloud formations from the ground, according to Dr. Vincent J. Schaefer of General Electric Company.

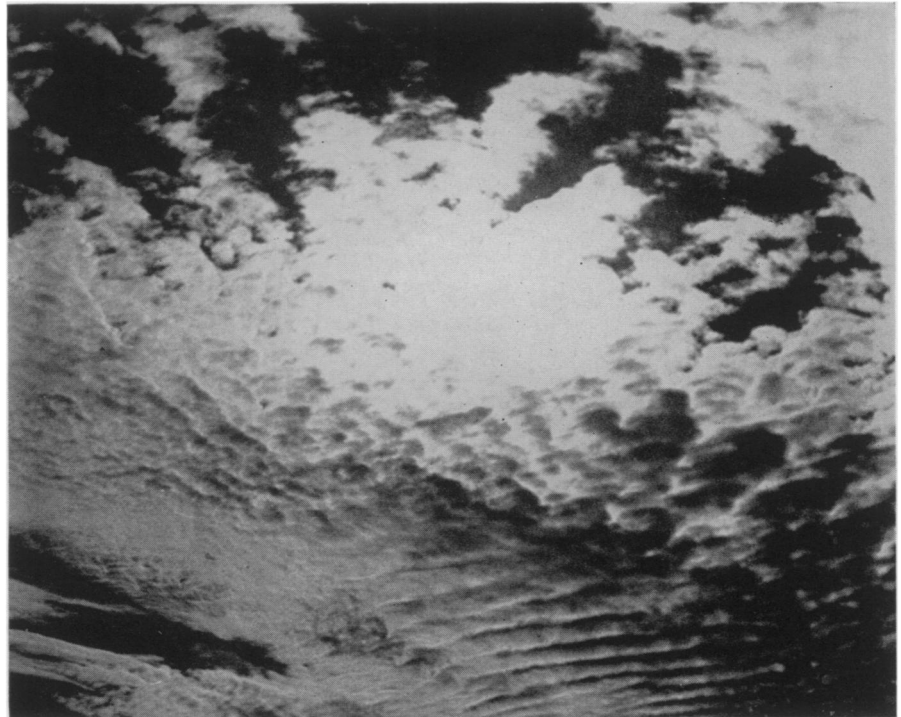
In a report to the annual meeting of the American Meteorological Society in New York, he said that four "specific and rather spectacular cloud types" are visual keys to the whereabouts of this high-speed stream.

The fast-moving wind currents have been known to double the speed of high-flying planes, but since there are no charts to show their position, finding the jet streams is a hit-or-miss proposition.

The four basic cloud formations indicating jet streams as listed by Dr. Schaefer are:

Cirrus streamers, white feathery wisps with tufted trails, seen moving at high speeds and high altitudes.

High cirrocumulus—small, white, rounded clouds in patches often scattered at ran-



**BILLOWING ALTOCUMULUS**—One of the four types of cloud formations that give strong evidence that jet streams are racing by high overhead. Main axis of these swift wind streams might be charted from such cloud clues.

dom, but sometimes shifting rapidly to cirrus streamers with delicate wave patterns.

Alto cumulus, fleecy, nearly stationary formations with lens-shaped clouds, piled layer upon layer at middle altitudes.

Billowing alto cumulus clouds which often extend from horizon to horizon, with parallel waves running at right angles to the direction of air flow.

Other tell-tale signs of the proximity of the major axis of the stream, Dr. Schaefer said, include gustiness at ground level in about half the cases observed; persistent cool, crisp air; generally blue skies, with visibility unlimited; precipitation often limited to sporadic sprinkles of rain or snow, and rapid changes in cloud cover, from one-tenth of the sky to nine-tenths and back again in less than an hour.

Quick identification of jet streams would be helpful both to pilots and to weather forecasters. The speedy wind currents, often 100 miles wide, circle the world in a meandering fashion, although the flow is generally from west-to-east. Their existence has been known only a few years.

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#### METEOROLOGY

## Hurricane "Eye" Curves

➤ A HURRICANE'S EYE—the calm center around which winds whirl—goes up to the top of the storm, curves around and then comes down to earth again some 200 to 300 miles away, the American Meteorological Society meeting in New York was told.

On its way down to earth, however, this second column of calm air can no longer be properly called an eye. It is, in the language of the hurricane watchers, a "hyperbolic point." Tracking of the hyperbolic point, Dr. Leon Sherman of Florida State University said, may permit forecasting more accurately the path a raging hurricane will take.

The hyperbolic point almost always keeps its position in relation to the eye of the hurricane and the direction in which the hurricane is moving, Dr. Sherman said. Thus if it begins to swing around the eye, this fact is a good indication that the hurricane is going to change its path.

Hurricane forecasters many times have a difficult job determining whether an Atlantic storm is going to come in over the coast to do its damage, or whether it will swing to a northeasterly path to spend itself harmlessly over the ocean. The movement of the hyperbolic point, Dr. Sherman declared, can help in determining in which way the hurricane will go.

The hyperbolic point, Dr. Sherman said, is removed from the terrific winds around the eye of the hurricane and thus is much easier to observe. Winds around its dead calm center are usually no more than 15 or 20 miles an hour, presenting little danger to the Navy and Air Force pilots of the planes used to trace hurricanes.

#### SURGERY

## Aid Ankle Sprain Recovery

➤ A CHEMICAL extracted from the tissues of a bull is being used to speed recovery from painful ankle sprains, Dr. W. R. MacAusland, Jr., of the U. S. Air Force Hospital, Maxwell Air Force Base, Ala., reported at the meeting of the American Academy of Orthopaedic Surgeons in Chicago.

The chemical is an enzyme named hyaluronidase. Within two hours after it is injected into the injured ankle, swelling is reduced and pain relieved. The patient can walk, bearing his full weight, shortly after the drug is injected.

Patients with hemophilia, the hereditary bleeders' disease, are also being helped by this chemical, Dr. MacAusland reported. In this condition the joints often "balloon up" and become painful because of bleeding around the joint. The bleeding may be started by a slight blow or bump even when there is no break in the skin.

The hyaluronidase is injected, with a local anesthetic, into the joint after the blood has been removed with a needle. The joint is bandaged and the patient kept in bed for 24 hours during which time the pain disappears and movement of the joint is greatly improved. After 48 hours he is able to walk without pain.

Prevention of subsequent crippling arthritis is the chief advantage of this new treatment, in Dr. MacAusland's opinion.

Science News Letter, February 7, 1953

#### SCIENCE NEWS LETTER

VOL. 63 FEBRUARY 7, 1953 No. 6

The Weekly Summary of Current Science, published every Saturday by SCIENCE SERVICE, Inc., 1719 N St., N. W., Washington 6, D. C., North 7-2255. Edited by WATSON DAVIS.

Subscription rates: 1 yr., \$5.50; 2 yrs., \$10.00; 3 yrs., \$14.50; single copy, 15 cents, more than six months old, 25 cents. No charge for foreign postage.

Change of address: Three weeks notice is required. When ordering a change please state exactly how magazine is now addressed. Your new address should include postage zone number if you have one.

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Printed in U. S. A. Entered as second class matter at the post office at Washington, D. C., under the act of March 3, 1879. Acceptance for mailing at the special rate of postage provided for by Sec. 34.40, P. L. and R., 1948 Edition, paragraph (d) (act of February 28, 1925; 39 U. S. Code 283), authorized February 28, 1950. Established in mimeographed form March 18, 1922. Title registered as trademark, U. S. and Canadian Patent Offices. Indexed in Readers' Guide to Periodical Literature, Abridged Guide, and the Engineering Index.

Member Audit Bureau of Circulation. Advertising Representatives: Howland and Howland, Inc., 393 7th Ave., N.Y.C., Pennsylvania 6-5566, and 360 N. Michigan Ave., Chicago, State 2-4822.

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#### GENERAL SCIENCE

### Heart Specialist Gets First of New Awards

➤ FIRST TO receive a newly established health award was Dr. Paul Dudley White, world famous heart specialist of Boston, Mass.

The award, consisting of \$1,000, a scroll and a gold statuette of the Winged Victory of Samothrace, has been established by the Albert and Mary Lasker Foundation and the American Heart Association "for distinguished achievement in the field of cardiovascular (heart and blood vessel) diseases—the leading cause of disability and death in the United States."

Dr. White's award was formally presented to him at the 1953 Heart Fund Dinner of the Massachusetts Heart Association in Boston, Feb. 2, by Dr. Irving S. Wright, president of the American Heart Association.

Science News Letter, February 7, 1953