

PUBLIC HEALTH

Nation Well Prepared For Bad Polio Year

► THE WORST infantile paralysis year since 1931, with new cases occurring throughout the nation at a weekly rate of 1,000 or more, would have taken a much higher toll than it has if the nation had not fortunately been well prepared with money and equipment for fighting the disease.

Credit for this life-saving preparedness is given to local chapters of the National Foundation for Infantile Paralysis in a statement by the Foundation's president, Basil O'Connor. Mr. O'Connor has just returned from a transcontinental trip in which he visited some of the stricken areas, including California and Chicago where the outbreaks have been particularly serious.

"Americans helping other Americans with money given freely" during the public celebrations of President Roosevelt's birthday last January 30, Mr. O'Connor said, is what made it possible for communities to have on hand both equipment and trained personnel for immediate action when the epidemic struck.

Science News Letter, October 9, 1943

NUTRITION—CHEMISTRY

Need Insoluble B Vitamins For Enriching White Rice

► WANTED: Insoluble forms of three B vitamins that can be used for enriching white rice and hominy grits.

It is not worded quite that way, but that is the gist of a statement from Dr. Frank L. Gunderson, secretary of the food and nutrition board of the National Research Council (*Science*, Sept. 24)

Corn grits and white rice, he points out, cannot be enriched with thiamin, niacin and riboflavin, as flour and other cereals can, because of certain practical difficulties. Yet these two cereal foods, staple in the diet of large sections of the population, need enrichment with vitamins, just as white flour does when it forms a large part of the daily diet.

One practical difficulty in the way of enriching grits and white rice, Dr. Gunderson points out, is due to the fact that these three B vitamins are soluble in water. If they were sprayed onto the outside of the rice or grits particles, they would be washed off and lost in the rinsing with water which most housewives give these foods before cooking them.

Methods are being developed for putting the water-soluble vitamins into special granules of a size and texture like that of the grits and rice respectively. These special vitamin-carrying granules would be mixed with suitable amounts of the rice or grits the housewife bought. The method, however, has certain disadvantages, Dr. Gunderson states.

Consequently the National Research Council's food and nutrition board "commends to the attention" of laboratories of chemical and cereal industries, universities and experiment stations, the desirability of finding a solution to the problem by developing insoluble forms of the vitamins.

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MEDICINE

Synthetic Sex Hormone Gives Favorable Results

► FAVORABLE results in treating women with a new synthetic female sex hormone are reported independently by Dr. Alvin Ray Hufford, of Grand Rapids, Mich., and Dr. Harold K. Roberts, Dr. Ellen Loeffel and Dr. Cyril M. MacBryde, of St. Louis. (*Journal, American Medical Association*, Oct. 2)

The new synthetic hormone is called octofollin and was developed at the Research Laboratories of Schieffelin and Co., New York. It can be given either by mouth or by hypodermic injection for relief of the distressing symptoms that afflict many women in late middle life when the body stops supplying the natural hormone.

"Prolonged beneficial effects" without nausea, headache or other side-effects from the drug were obtained by Dr. Hufford in the 21 patients to whom he gave octofollin by hypodermic injection.

The St. Louis doctors gave the drug by mouth instead of hypodermic injection and report relief of symptoms in the majority of 44 women. They also report no nausea nor any other signs of poisonous effect of the drug.

The drug is more expensive per milligram than another synthetic sex hormone, diethylstilbestrol, they point out, and when given by mouth comparatively large doses of octofollin are required. Octofollin, however, is less expensive in the amount needed to achieve results, than preparations of "natural" sex hormone that can be given by mouth.

Chemical name for the drug is 2,4-di (parahydroxyphenyl)-3-ethyl hexane.

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IN SCIENCE

PUBLIC HEALTH

Infantile Paralysis Now Past Peak

► INFANTILE PARALYSIS cases, throughout the nation decreased from a total of 1,020 the week ending Sept. 18 to 818 the week ending Sept. 25, reports to the U. S. Public Health Service show. Health authorities believe the epidemic is now past its peak.

Decreases were reported from all but six states: New Jersey, Wisconsin, Minnesota, Arizona, Utah and Oregon. The only substantial increase was in Minnesota, from 10 to 23.

In Illinois, where the epidemic had been particularly fierce, cases dropped from 208 to 140. Texas, one of the first states to feel the epidemic, reported a decrease from 57 to 41. Cases in California, another hard hit state, dropped from 150 to 117.

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BOTANY

Night Temperature Affects Blossoming of Plants

► NEW EVIDENCE of the importance of night-time temperature on blossom induction and other activities of a number of plants is reported by Dr. R. H. Roberts, of the University of Wisconsin (*Science*, Sept. 17).

With a night temperature of 75 degrees Fahrenheit and a daytime temperature of 55 degrees Fahrenheit, the plants had a pale color, warm-climate plants particularly being near a yellowish "grapefruit" shade. Cool climate plants, on the other hand, developed a relatively good green color in cool days following warm nights.

The plants with pale color because of cool days following warm nights grew relatively little compared with plants on a warm day and either warm or cool night schedule. They did, however, have practically normal blossom induction.

Flowering, setting of seed and root formation were other plant activities affected by the warm-night-cool-day schedule in the cases of certain plants. A masking of potato virus symptoms also occurred as a result of certain temperature schedules.

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SCIENCE FIELDS

AGRICULTURE

Pre-Harvest Drop of Fruit Prevented by New Spray

➤ FEWER apples and pears fall from their trees before ripe if new sprays and dusts developed by the U. S. Department of Agriculture are used during the growing season. After four years of experimentation with satisfactory results, the procedure is now announced to the public.

The first orchard tests were made in June, 1939, on an early summer variety of apple. The result was striking. In only two days two bushels of windfall apples were picked up from under two untreated trees, and only 12 apples from under two treated trees. Later tests gave similar results. It has now been tested on 100,000 acres of orchards.

The spray is principally alpha-naphthalene-acetic acid. One teaspoon of the chemical is used with 200 gallons of water. It is now available commercially.

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MEDICINE

Plasma Declared Best Of All Blood Substitutes

➤ PLASMA is and probably will continue to be the best of all the so-called blood substitutes, Dr. John B. Alsever, U. S. Public Health Service surgeon serving as technical director of the blood plasma section of the Office of Civilian Defense, declared at the meeting of the Medical Society of the District of Columbia.

Human serum albumin is the newest blood derivative now being used by the armed forces. It is not available for civilian use, nor does there seem any reason why it should be. It is hard to make, more expensive than plasma, and does nothing that plasma does not do, Dr. Alsever explained. Its great advantage for military use is the saving in transportation space. It is packaged in vials less than one-fourth the size of those required to carry an equivalent amount of plasma.

Plasma, serum and serum albumin should be called blood derivatives, not blood substitutes, Dr. Alsever said, because none of these can take the place of whole blood.

Whole blood is first choice for treating shock from injuries in which there has been hemorrhage, although sometimes plasma must be used in these cases until whole blood is available.

Plasma is first choice, on the other hand, in treating shock in burns and crush syndrome.

Pectin and gelatin, on which much research is being done, are not blood derivatives and cannot be truly considered as plasma substitutes, Dr. Alsever stated. Even if further perfected, he does not think they will ever become more than temporary emergency aids in treatment of shock. Recent findings suggest that gelatin, in particular, shows promise of eventually becoming useful.

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PHARMACY

Remington Medal Awarded Leader in Health Programs

➤ ACHIEVEMENT in pharmacy for the betterment of public health has won the Remington Honor Medal for Dr. Robert P. Fischelis of Trenton, N. J., it was announced in Brooklyn by Dr. Hugo H. Schaefer, secretary of the Remington Medal Committee.

Dr. Fischelis, the twenty-second Remington Medalist, organized and heads the Chemicals, Drugs and Health Supplies Branch of WPB's Office of Civilian Requirements and is secretary and chief chemist of the New Jersey Board of Pharmacy.

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CHEMISTRY

Chemical Society Prize Awarded to Young Professor

➤ THE \$1,000 PRIZE of the American Chemical Society, designed as a recognition and encouragement for the younger men in the profession, was awarded to Dr. Kenneth S. Pitzer, 29-year-old University of California faculty member, at the Society's annual fall meeting.

Despite Dr. Pitzer's youth, he already has more than 40 scientific publications to his credit. His researches have been primarily in the field of chemical thermodynamics. Some of his researches, notably those on benzene, toluene and the xylenes, have ultimate bearing on the use of petroleum and its products.

At present, like practically all chemists, Dr. Pitzer is at work on war problems.

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AERONAUTICS

Heater for Gun Turrets Also Prevents Frost

➤ HARD-TO-HEAT gun turrets with transparent plastic domes, such as those found on the big bombers, may provide more comfort and clearer vision for gunners if the heating plan invented by Lynn A. Williams, Jr., of Northfield, Ill., proves successful. He has assigned his rights to patent no. 2,330,322 to the Stewart-Warner Corporation.

A heater, preferably of the internal combustion type, is fastened to the outside wall of the compartment. Heated air is shot through a manifold by a blower into a passageway around the wall, then emerges from many fishtail-shaped nozzles placed in a circle on the lower edge of the turret dome. Flowing upward in thin layers along the walls, the heated air prevents frost or moisture condensation which would obscure the view of the gunner.

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ENGINEERING

Airplane Worker Needs Skill of Artist, Engineer

See Front Cover

➤ THE SKILLED WORKER shown on the front cover of this week's SCIENCE NEWS LETTER must combine the delicate touch of an artist with the precision accuracy of an engineer. He is using a high-speed rotary burr to smooth the sharp edges of a reduction gear for a war plane but he must not change, even minutely, the gear's profile. Finished, the gear will fit accurately into its place in a Wright Cyclone airplane engine.

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INVENTION

Welding Generator Made With Automatic Start-Stop

➤ AN AUTOMATIC welding generator that starts as soon as the operator tries to weld and cuts off a short time after welding has stopped is the subject of patent No. 2,328,596 granted to Thomas W. Winsor of Bremerton, Wash. The device saves power and unnecessary wear by eliminating idle running. Essential parts of the device are a motor starter operated magnetically, a magnetic switch which opens and closes the circuit, and series and time relays.

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