

## PUBLIC HEALTH

## 3 Diseases Climb in U. S.

Diphtheria, infectious and serum hepatitis, and meningitis are occurring more frequently than last year. The polio incidence is also rising, Public Health officials warn.

THIS COUNTRY is now grappling with a substantial rise not only in the number of polio cases, but in three other communicable diseases as well.

Diphtheria, infectious and serum hepatitis, and meningitis are occurring more frequently than last year, U. S. Public Health Service reports show.

For instance, the incidence of hepatitis has increased 50%. This disease attacks the liver and can result in permanent damage to that organ. More than 12,000 cases have been reported so far this year as compared to 8,100 last year at this time.

The number of cases of diphtheria has risen 20% above the 1958 total. Many of the reported cases of meningitis, inflammation of the membranes that envelop the brain and spinal cord, exhibited mild symptoms of the disease but not paralysis or permanent damage to the spinal cord. This helps account for the large number of cases reported.

Despite these growing figures, one health official stated that this summer did not appear to be any worse than many of our previous summers.

Paralytic polio continues to fan out from

the Des Moines area. Rate-wise, this city is now the biggest trouble spot in the country. California and Texas have both reported larger numbers of cases than Des Moines, however. Both states have reported between 70 and 80 cases each while the Iowa city has reported 45 since January 1959.

The polio peak will not arrive for another four weeks, at least it never has before, one official said. This season's polio pattern plus last year's high incidence performance may be following the heavy polio trend of 1952, 1953, 1954—before Salk—when an unusually large number of paralytic polio cases were reported each of those years.

Constant prodding by the PHS plus weekly reports that polio was increasing prompted state and local health organizations to set up inoculation clinics, resulting in a demand for more Salk vaccine. Pharmaceutical companies will be able to produce only several million doses during July and August. It takes a dose of vaccine six months to travel from a beginning batch to an individual's arm. At present, only 4,000,000 doses are available.

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## BACTERIOLOGY

## Fast Method Spots Bacteria

A BETTER WAY for guarding the purity of city drinking water is being developed.

It reduces from two days to four hours the time required to detect coliform bacteria, associated with sewage.

Presence of coliform bacteria in drinking water means possible spread of diarrhea, amoebic dysentery, typhoid and other intestinal upsets through a community.

The process that makes quick detection possible is known as the rapid radioisotope method for detecting bacteria. It is being developed by Gilbert Levin, sanitary engineer, Resources Research, Inc.; and Dr. Walter C. Hess, assistant dean of research, V. R. Harrison and V. L. Stauss, research assistants, all of Georgetown University's School of Medicine in Washington, where the project is being conducted under a National Institutes of Health research grant.

The standard process used routinely for detecting coliform bacteria in drinking water supplies takes up to three days. It involves putting a sample of water in a test tube with lactose. Coliform bacteria ferment the lactose and produce a visible bubble of carbon dioxide. It takes about 170 billion bacteria to do this in one day. The result must then be verified, taking at least another 24 hours.

The new method yields results in four hours. A sample of water is filtered through a cellulose membrane that catches all bacteria. The membrane is put in a tiny cup smaller than a thimble with a medium containing lactose and radioactive carbon.

The cup is incubated in a small jar for three hours. A second cup, containing barium hydroxide, is incubated with the first cup for the fourth hour.

If coliform bacteria are present in the water sample, they ferment the medium in the first cup, producing radioactive carbon dioxide. This is trapped by the second cup. A Geiger counter, checking the second cup, spots the "hot" carbon dioxide which betrays presence of coliform bacteria in the water sample.

The method is now sensitive enough to detect as few as 25 coliform bacteria in one sample. Mr. Levin said the team hopes ultimately to be able to detect as few as five in a sample.

Commercially, each test might be run for less than 50¢, he estimated. It costs \$1.75 to \$2.00 per test using the standard method.

A possible future modification of the method may help doctors. It could enable them to check a patient's infection, run a while-you-wait analysis, then prescribe the

exact antibiotic known to knock out the specific bacteria. Such an analysis now takes too long for an office call. Doctors sometimes prescribe a general broad-spectrum antibiotic hoping it will clear up the infection, but not knowing that it will.

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## ELECTRONICS

## Grounded Plugs Urged For Electrical Tools

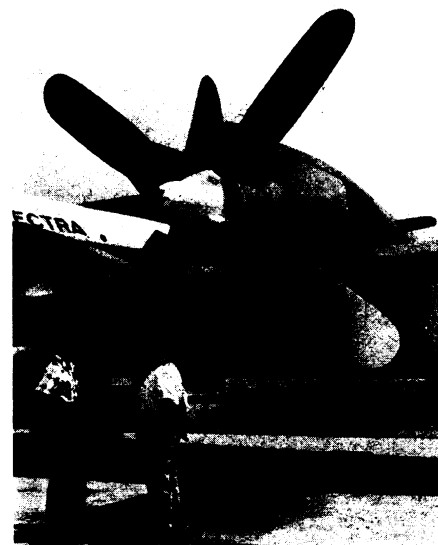
LAUNDRY APPLIANCES, hand tools, and garden equipment will have three-wire plugs and three-wire cords in the "not too distant future," to ward off accidental electrocutions, said Prof. Charles F. Dalziel of the University of California, Berkeley.

The three-pronged plug eliminates the chance that the neutral wire will be disconnected instead of the "hot" wire when a single pole switch is thrown. This, in turn, removes the possibility that an internal short circuit could make the appliance frame electrically "hot," and quite dangerous, when it is thought to be safe.

Prof. Dalziel told the American Institute of Electrical Engineers meeting in Seattle, that safety is the sole reason for use of grounded receptacles in homes and for electrically operated tools.

He suggested that appliance manufacturers replace adapter cords and plugs with three-wire half-round grounding receptacles for permanent installation in an outlet box. (The adapter cords and plugs, by letting the three-pronged plug be attached to the regular two-holed outlet, defeat the purpose of the grounded receptacle.)

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**ROUND-TIP PROPS**—Made of solid dural, an alloy of aluminum, these 13½-foot propellers with round tip blades are geared to Allison turbine engines. The round tip blades, described as a new design, are being tested by Lockheed Aircraft Corp. in Burbank, Calif.