

declared at the meeting of the American Public Health Association in Buffalo.

They based this on a study of dysentery due to *Shigella* organisms in migratory farm labor in California's San Joaquin Valley. In the camps where these laborers lived, the prevalence of dysentery germs was highest where water for washing was least accessible. For example, dysentery germs were found between four and five times as often in households with outside water faucets as in households with water faucets inside the cabins.

Heretofore, the scientists pointed out, epidemic fighters have considered water pri-

marily as a vehicle for spreading disease germs. But the California studies and similar findings among non-migrant families in some parts of Georgia show that water may play a part in disease fighting by acting to dilute and thus reduce the number of intestinal infections when used for hand washing and other personal hygiene.

The studies reported today were made by Dr. A. C. Hollister Jr., and M. D. Beck and A. M. Gittlesohn of the California State Department of Public Health, San Francisco, and E. C. Hemphill of the U. S. Public Health Service's Communicable Disease Center, Atlanta, Ga.

Science News Letter, October 23, 1954

## GENETICS

## Predict Inherited Diseases

► SPECIFIC BIOCHEMICAL tests will some day be found for detecting specific inherited diseases carried by seemingly healthy parents and capable of being transmitted to offspring.

This was predicted by Drs. Harold F. Falls and James V. Neel of the Heredity Clinic of the University of Michigan in a paper presented at the World Population Conference meeting in Rome.

The average normal and healthy individual is, in reality, a potential storehouse of genes for one or more hereditary diseases. Although the carrier does not suffer from the disease, he can pass it on to his children, causing them to suffer.

"The day may soon come when by appropriate tests the average individual may actually be demonstrated the carrier of one or several recessive genes," the Michigan scientists said.

Detection of recessive or hidden genes carrying disease has heretofore been largely a matter of family history. However, simple and specific tests are now being perfected which allow a great degree of accuracy in predicting the birth of a diseased child.

Two such diseases, for which tests have been accurately employed, are the sickle cell disease of Negroes, a form of anemia; and choroideremia, a rare eye defect for which there is no known cure.

"There are a very few diseases for which we can predict with a high degree of accuracy just which marriages will result in affected children," the scientists said.

However, they listed several diseases that they believe are inherited. From their study, they have found that there is strong evidence that lack of fibrinogen in the blood; albinism, a whiteness of the skin, hair and eyes and some forms of anemia are inherited.

Evidence has been found to indicate that many eye diseases, including myopia; the mental disease, schizophrenia, and some allergies are inherited, but the evidence is dubious in the opinion of Drs. Falls and Neel.

The ability of researchers to detect car-

riers of disease genes will afford doctors invaluable data to supplement their clinical diagnosis and prognosis. It will also enable counseling of married couples and the control of inherited diseases.

Science News Letter, October 23, 1954

## ENTOMOLOGY

## Wage Atomic Warfare Against the Screwworm

► A SECOND attempt is now being made at eradicating the screwworm, an insect pest of livestock, by using atomic radiation to sterilize the males.

In this "Operation Screwworm," U. S. Department of Agriculture scientists are working with the Dutch authorities on the Caribbean island of Curacao in an effort to completely eradicate the screwworm fly,

whose maggots attack livestock in Florida and Curacao, causing millions of dollars loss each year.

Preliminary reports from Curacao indicate that this full-scale attack will be the first successful atomic radiation pest control measure of practical significance.

The screwworm fly and the island of Curacao were selected for this experiment with this modern insect warfare method for two basic reasons: the female fly mates only once a year and with only one male, and the fly infests only limited areas and therefore can be found in isolated pockets.

To eradicate the population, the entomologists released thousands of normal looking males that had been raised in the laboratory. In reality, these males had been made sterile by exposing them to gamma rays from radioactive cobalt.

When mated with a sterile male, none of the 300 eggs the female produces during the year hatch out. Thus, the population in the next generation is reduced.

The scientists reported that calculations show that turning loose five sterile males for every normal wild male fly, should cut the next population down by 80%.

The first field-test of this kind was carried out on Sanibel, a small island off the coast of Florida. But, flies from the mainland flew to the island and replenished the screwworm population.

Curacao is 50 miles from the nearest land. If the overall tests prove successful, eradication of the screwworm from the Dutch island will give valuable knowledge for a possible attempt to rid Florida of the pest.

Details of the atomic age test were reported in the U. S. Department of Agriculture's publication, *Agricultural Research* (Oct.).

Science News Letter, October 23, 1954

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