

MEDICINE

Oriental Blood Studied

Blood specimens of hundreds of children in three Oriental countries were collected for study of apparent immunity to poliomyelitis.

➤ WITH the blood specimens of several hundred children of three countries of the Orient, the fruit of a 28,000 mile air quest, a group of University of California scientists are preparing for studies which may answer one of the critical questions about poliomyelitis.

The blood specimens may show why there was an increased incidence of polio among American troops in Japan during the past polio season; and why, generally speaking, there is such an increase wherever Western European adults go into countries with poor sanitation, such as Japan, India and North Africa, without a parallel increase in the native population.

The specimens were collected by a scientific mission for the Army Epidemiological Board headed by Dr. W. McD. Hammon, University of California Medical School epidemiologist, and including Dr. J. Casals, of the Rockefeller Institute of Medical Research, Dr. Don M. Rees, University of Utah entomologist, and Dr. Gordon Meiklejohn, University of California.

Dr. Hammon says the specimens may reveal the accuracy of a medical theory which attempts to explain such an increase. This theory is that in countries with poor sanitation polio is a common ailment before the age of two, but paralysis is rare up to that age. With immunity presumably acquired by age two, there is a limited number of susceptibles to polio in the age group when the disease is likely to take the paralytic form.

In countries with improved sanitation, infants are better protected from the disease, but this results in a larger group susceptible to the paralytic form.

Dr. Hammon and his colleagues in the Hooper Foundation for Medical Research in San Francisco will study the blood specimens taken from children from six months to ten years of age in Japan, Okinawa, Korea and China to determine whether or not protective antibodies to polio are present.

If the antibodies are present immunity has been acquired. Blood of children of this age group in the United States does not show a high incidence of pro-

ductive antibodies. If the incidence is high in the samples from the Orient, greater weight can be given to the hypothesis.

The scientists also collected large numbers of mosquitoes, carriers of Japanese "B" type encephalitis, and blood specimens of victims of this disease. Work with this material will be continued during the winter in Tokyo and the Hooper Foundation.

Another polio problem Dr. Hammon will study is a comparison of polio virus strains of the Orient and the U.S. Immunity to types found in the United States may not confer immunity to strains in the orient, he stated, and added that it is possible the increase in polio in the U.S. in the past two years may be due to the importation to this country of tropical strains.

Science News Letter, October 4, 1947

PHYSIOLOGY

Bone Grafts Actually Become Part of Body

➤ BONE GRAFTS actually live, developing their own blood supply and integrating themselves as a vital part of the body, from the time they are transplanted. Evidence for this comes from studies with radioactive phosphorus, one of the chemicals being produced in the atomic pile at Oak Ridge, Tenn. The bone graft studies were reported by Drs. Clifford L. Kiehn, Hymer L. Friedell and William J. MacIntyre of Western Reserve School of Medicine, Cleveland, at the American College of Surgeons.

Grafts from what is popularly called the hip bone, medically the iliac crest, were widely used during the war to replace jaws and other bones of the face that had been shot away. But there has been considerable controversy about whether these grafts lived immediately after transplantation or whether they died and new bone was later formed in their place.

To settle this point, the Cleveland doctors injected radioactive phosphorus which they could trace through the body to see where it was deposited in the bones. Phosphorus is one of the chem-

icals of which bones are made. In one study, they found that a bone graft from the hip, 24 hours after transplanting, had taken up radioactive phosphorus at about 60% of the amount taken up by the same weight of normal hip bone. Bone grafts that had been killed, or devitalized, by boiling, took up only 7% of the phosphorus as compared with normal bone.

Refrigerating bone grafts, as in bone banks, depresses the bone grafts for about a week, but after that the transplanted bone takes and lives satisfactorily.

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For *matches* a wood is required that combines straightness of grain, ease of splitting, ease of working, and toughness.

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