

PUBLIC HEALTH

Stop Korean Louse

Two chemicals that will stop Korean body louse, carrier of deadly typhus fever, found. Insect is not only resistant to, but thrives on, DDT.

► A CHEMICAL that will stop the Korean body louse, carrier of deadly typhus fever, which resists DDT, has been found by a U. S. Department of Agriculture scientist, Dr. Gaines W. Eddy.

In fact, Dr. Eddy has found two chemicals that stop this variety of body louse.

Some has already been shipped to Korea and more is on the way to protect our fighting men.

The chemicals are lindane and pyrethrum. One is as effective as the other against this louse, and Army medical scientists find that both are safe for use as a dusting powder for humans.

Discovery by Navy and Army doctors a month ago that the Korean body louse was resistant to DDT and even thrived on it aroused considerable concern. Since World War II, DDT has been relied on as a weapon against typhus fever because it kills the lice that spread the disease. An anti-typhus vaccine has been developed and our troops are given this protection, but dusting with DDT powder has been the chief reliance for stopping typhus epidemics among large groups of unvaccinated persons.

Typhus fever has broken out among the South Korean population and among prisoners of war. So far, these outbreaks have not gotten out of hand. But military authorities can breathe easier, now that they have two new chemicals effective against the Korean louse.

The chemicals will be used first for mass dusting of prisoners of war, to stop danger of infected lice spreading from them. United Nations troops will get individual two-ounce cans for their personal protection. And as soon as enough of the powders can be made and shipped, they will be distributed to the South Korean population.

Further studies on the problem continue, to see whether other areas of the world may need either of these powders. So far, only the Korean body louse has been resistant to DDT. Even head lice in Korea are killed by this old stand-by.

Cooperating with Dr. Eddy in discovering the answer to the Korean louse problem were the 37th Army Preventive Medicine Company and the Navy's Fleet Epidemic Disease Control Unit No. One.

Science News Letter, December 8, 1951

MEDICINE

Ovaries Transplanted

► FOUR GENERATIONS of mice born of a strange kind of foster mothering at the Jackson Laboratory in Bar Harbor, Me., are giving scientists new knowledge of the relation between glands and cancer. The foster mothering was done in the following way:

The ovary containing the egg cells from which the mice developed was first grafted into the spleen of the mouse that owned the ovary. In a sense, this mouse was the real mother. Then, after periods up to 60 days, the ovary and egg cells were removed from the spleen and transplanted into the body of another mouse which had had one of its ovaries removed.

The second mouse was mated and in some cases gave birth to a baby from the transplanted ovary. Whether the baby belonged to the second mouse or had been fostered by her through the ovarian graft could be told by its "dilute brown" coat color. This is a genetic tag for one of the famous Jackson Laboratory strains of inbred mice which have been absolutely identical for more than 230 generations.

The young mice so strangely mothered showed no hereditary changes for at least four generations. This is considered of great importance in the study of the relationship of glandular imbalance to cancer.

It has been known for some time that when ovaries are transplanted into spleens of castrated mice and allowed to stay there for long periods, some of the ovaries become cancerous. This is thought to be because hormones from the ovary in the spleen are inactivated in the liver and do not reach the general blood circulation as they normally do. It has been suggested that the same mechanism is responsible for ovarian tumors induced in experimental animals by X-rays.

The ovaries that stayed in spleens for some time and then were regrafted apparently lost the ability to produce egg cells that could become new mice, because only half the mothers that got these transplanted ovaries had litters. But the young they did have were not abnormal and the foster mothering mice did not show any adverse effects from the ovaries that had been out

of their normal environment for long periods.

These studies, part of an extensive study of the whole subject of the relation of gland, or hormone, imbalance to cancer, are reported by Drs. Clarence C. Little and Katharine P. Hummel and Miss Mary Eddy and Miss Barbara Ruppel in the PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES (Oct.).

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TECHNOLOGY

Massive Machines Weighed By Electronic Crane Scales

► THE WEIGHT of massive objects too heavy to be weighed by ordinary devices is now being determined with what are called electronic crane scales which utilize a resistance wire strain gage, an electric current and an electronic indicator.

This weighing device is in use by General Electric Company to determine the weight of giant electrical transformers. The resistance wire strain gages are a product of Baldwin-Lima-Hamilton Corporation of Philadelphia. Employed are strain gage load cells of 300,000 pounds capacity.

The gage is set in the upper part of a gigantic double crane hook to which the object being weighed is suspended. It is a small cell which contains a grid of wire finer than human hair. The gage is subjected to strain transmitted to it by a short load-supporting column to the side of which the gage is cemented. It is above the cross bar which carries the hook, so that the strain on it is compression.

Imperceptible compression of the column under load reduces the length of the wire in the grids also. This changes their electrical resistance enough to be detected and measured by electronic circuits to which they are connected. Readings are made on a portable indicator to which the gage is attached by electric wire.

This portable weight indicator and accessory reels of electric cord for connection to load cell units and convenient electric power outlet is moved about on rubber-tired wheels. The indicator translates directly into pounds or tons on its dial.

Science News Letter, December 8, 1951

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