

AT LEFT, portions of the human tapeworm. Such a tapeworm may exceed 40 feet in length in the human.

muscle tissue. The appearance of the small white cysticerci in the red muscle gave rise to the term "beef measles."

It can easily be seen that a bovine, if it encounters one tapeworm egg, may come in contact with many thousands of eggs. Similarly, if the source of infection is present for one animal, it is present for all animals in a given pasture. Therefore, if one infected animal is encountered in a herd, it is likely that quite a high percentage will be infected. Infection rates in such a herd may be as high as 50 per cent, or even higher in some cases.

Federal inspection of meat detects most infected carcasses so that the public is fairly well protected. It is possible, however, that some lightly infected beef can reach the consumer's table. If not sufficiently cooked, each small cysticercus could cause an adult human tapeworm.

Doesn't Show Up Visually

Research on this problem at The University of Arizona has shown that infected cattle show no symptoms of being infected. They gain properly and look as healthy as those which are not infected. Consequently, most infected animals are fattened and sent to market only to be condemned or retained for processing. Either way, the producer loses money.

In order to protect the consumer more adequately and to prevent the cattle feeder from needless waste in feeding infected cattle, research is being conducted by University of Arizona personnel to try to find some way of identifying infected cattle before they are slaughtered.

Best results so far have been with several immunological tests similar to those used in the diagnosis of certain other diseases. Among the most promising to date have been an intradermal test (similar to the tuberculin test) and a hemagglutination test. Both tests need further study before they will be completely reliable.

Studies Are Continuing

Other possibilities are being explored in the hope that other even more specific tests may be discovered. Corollary studies have shown that it is not practical to hold infected animals with the thought that the cysticerci will die and be re-absorbed. Cysticerci were found to be still alive in a steer almost two years after it had been artificially infected.

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Seeking To Identify Beef Measles In Live Meat Animals

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The term "beef measles" has no similarity to the term "measles" as it is used in relation to humans. It refers instead to the intermediate stage of a human tapeworm, *Taenia saginata*, which is found in cattle.

The adult tapeworm resides in the intestines of humans and utilizes food which the human digests for it. This particular kind of tapeworm may exceed 40 feet in length in a human! The tapeworm produces eggs which pass out of the human's body with the fecal material. As many as 1,000,000 eggs may be produced in a single day. If deposited in a field or along an irrigation ditch, they may ultimately be found on the grass or in the

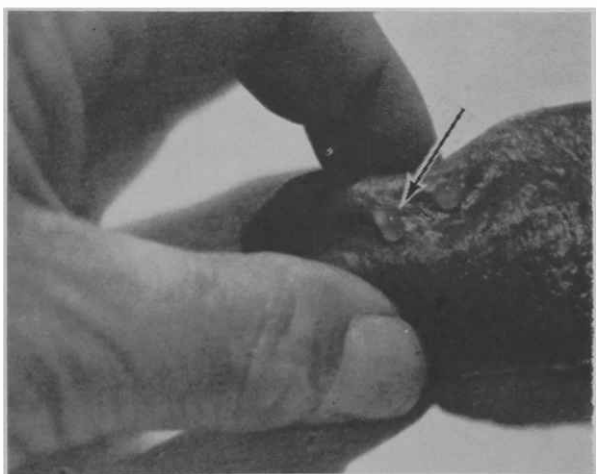
water. As such, they would be accessible to cattle and could accidentally be taken in by cattle when eating or drinking.

Deposits of human waste along irrigation ditches, or at roadsides, are not uncommon near labor camps or adjoining fields where laborers are employed at a considerable distance from sanitary facilities.

Deposited in Beef Muscle

In cattle, each tapeworm egg transforms into a small white fluid-filled sac or cysticercus which is found in the

BEEF MEASLES, shown below in a piece of meat from a steer infected with the intermediate stage of the human tapeworm. The arrow points to one of the immature tapeworms. Humans may become infected with a tapeworm by eating such meat if it is insufficiently cooked.



SWELLING REACTION, outlined in black, which an infected steer showed to skin test for beef measles.

