

PUBLIC HEALTH

Salmonella Germs Traced

➤ **SALMONELLA** GERMS that can cause illness and death in humans as well as in poultry are being traced to feed supplement that contains protein from animal by-products.

On Friday, Oct. 29, an appeal for licensing authority was sent to the Maryland State Legislature by the State Board of Health, which could mean financial upset in some reduction plants.

James D. Clise, supervising sanitarian of the Maryland State Department of Health, Baltimore, told **SCIENCE SERVICE** that there is not much hope of getting action before the 1966 session of the state legislature, but that eight of eleven offal reduction plants in the state have been producing feed supplements containing salmonellae.

"We are up in the air legally," Mr. Clise said. "The existing law does not differentiate between food for humans and food for animals, but it is an almost impossible job to force the offending reduction plants to comply with public health requirements."

Raw eggs are one of the best sources of protein for infants and old people in hospitals but death can result if the eggs are contaminated.

Salmonellosis, a form of food poisoning marked by violent cramps and diarrhea, is one of the most widespread problems confronting today's public health worker, Mr. Clise says.

Reporting a study to evaluate the effectiveness of procedures in processing animal by-products, Mr. Clise said poultry, poultry products or foods containing eggs are often the cause.

"Large animals, such as cattle and swine, are also commonly found to be infected," the sanitarian said in **Public Health Reports**, 80:899, 1965. Domestic poultry is considered to be one of the largest reservoirs of *Salmonella* organisms.

It is common practice to process the offal, blood, feathers and hair from poultry and large animal slaughtering operations and to reclaim the protein in these materials for use as food supplement, Mr. Clise said.

"When offal is processed, two finished products result. The first is a meal derived from the rendering and milling of the solid offal," Mr. Clise says.

"The second product is made from the blood and feathers of poultry or the blood and hair from large animals. This is commonly referred to as blood meal or blood and feather meal, and its protein content averages 85%."

To demonstrate the significance of using contaminated by-products in poultry feed, feeds containing contaminated supplement were fed to *Salmonella*-free laying hens. Then samples of by-products, droppings from the hens, eggs and waste water from by-product processing were examined for salmonellae, using specific materials and the latest methods.

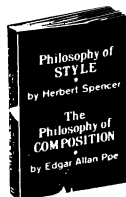
After being fed commercially prepared mash containing contaminated supplement for a period of one week, caged hens were

found to be excreting *Salmonella* organisms. After two weeks, two hens had diarrhea and were excreting salmonellae freely, while several hens without diarrhea were found to be excreting salmonellae sporadically.

Although both the shells of eggs and the yolks of the caged layers' eggs remained free of salmonellae, the shells of eggs from hens that were housed loose were found to contain *Salmonella worthington* after the hens had been fed contaminated feed for one week. Eggs laid by these hens during the second week were held unrefrigerated for one additional week before being examined, after which *S. worthington* was then isolated from both shells and yolks.

Edwin E. Swecker, microbiologist at the Maryland State Health Department, collaborated in the study.

• Science News Letter, 88:303 November 6, 1965



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