

Spokane Rodent Control Program

William A. Hendrix, Sanitarian (R)*

During the summer of 1948, a survey made by the Washington State Department of Health revealed that the rat population in Spokane had increased to a point where it could become a health menace. This information gained added importance when plague was found in wild rodents in eastern Washington near Spokane. With heavy rat population in the city and the presence of plague in wild rodents in areas near Spokane, there was a possibility that plague could be transmitted to rats within the city, and thus to humans. Although no immediate plague problem existed, it was thought that steps should be taken to decrease the rat population before there was a critical situation.

At the request of the Spokane City Health Officer and the Commissioner of Public Affairs, rodent control specialists were assigned, through the State department of health, to the Spokane City Health Department in February 1949.

The first goal was to sell a permanent rodent control program to all of the city officials, to civic and business organizations, and to the general public in order to obtain their support and cooperation. A number of meetings were held with building owners and the managers association, real estate representatives, civic organizations, and officials of the city government. This goal was partially attained when the Building and Home Owners Association, the Real Estate Board, and the Retail Trade Bureau of the Chamber of Commerce endorsed the program; the city council adopted a rodent control and universal compulsory garbage collection ordinance as recommended; and the pest control operators pledged their cooperation.

With the preliminary promotional work completed, a 2-week training program was given by the rodent control specialist to all city sanitarians, pest control operators, and other interested persons. The training concerned diseases carried by rats; rat habits and characteristics; kinds of rats; garbage storage, collection, and disposal (in order of importance as listed); survey of buildings; detecting rat signs; trapping; poisoning and ratproofing. For practical experience, a building housing three establishments was surveyed and ratproofed and

the rodents therein eradicated by the pest control operators and local sanitarians.

The basic program was as follows:

1. Ratproofing to be started in the downtown area on a block-by-block basis. After buildings were ratproofed, the rats therein were to be eradicated. One local rat control sanitarian was assigned to this area on full-time basis.

2. Six district sanitarians and four milk sanitarians assumed the responsibility for the program in the outlying districts. Particular emphasis was to be placed on food handling establishments, and since most of the establishments were under the supervision of a district sanitarian, it was logical for them to assume the responsibility of the rodent control program along with their other activities.

As of July 1951, the program had progressed as follows:

1. Downtown area (approximately 1,330 premises): 1,043 premises surveyed for ratproofing, 919 premises ratproofed, 729 premises from which rats had been eradicated.

2. Outlying districts: 362 premises surveyed, 295 premises ratproofed, 217** premises from which rats had been eradicated.

3. Ninety percent of all food handling establishments in the city had been ratproofed and freed of rats.

4. Compulsory garbage collection had been established.

5. A contract had been awarded to a local pest control operator for permanent rodent control service at the city dumps. Only noncombustible materials were placed on the dump, as the city has an incinerator which operates effectively in the disposal of combustible materials.

6. The basements, alleys, and back premises had been cleared of rubbish and debris to prevent rat harborage.

7. Garbage storage and collection was greatly improved. This has reduced the rat and fly population.

8. Environmental sanitation had been greatly improved in the business areas.

*CDC Representative, Region VIII.

**A number of establishments which were ratproofed were found to be rat-free and therefore needed no eradication.

9. The program had proved to be a good public relations project and, as a result, has improved the status of the health department in the community.

It is the plan of the city health department to have the entire downtown area ratproofed and freed of rats (as far as practicable) by January 1952.

"Salmonella" Food Poisoning

MILDRED M. GALTON*

Salmonella has been known to be associated with food poisoning since shortly after Salmon and Smith (1885) first described a member of the group. Early workers attempted to classify the *Salmonella* into the following three groups (5) according to pathogenicity and host specificity: (1) those organisms that are of human origin and are pathogenic for man only; (2) those of animal origin and non-pathogenic for man; (3) those of animal origin, and primarily infecting animals but also causing a mild gastro-enteritis in man. In recent years, the use of newer selective media for the isolation of *Salmonella* and more adequate antigenic analysis of these organisms have disclosed the infection of humans with the "purely animal" strains, and the infection of animals with "purely human" strains. Of the more than 150 antigenic types of *Salmonella* now recognized, few, if any, are limited to one host (2). All types must be considered as potential pathogens for man and/or animals.

Hormaeche and his associates (29,30) observed that the clinical syndrome produced in persons contracting *Salmonella* infection depends largely upon the age and general resistance of the individual and to a lesser extent upon the type of *Salmonella*. Thus infants and young children are most susceptible to *Salmonella* infection. Edwards, Bruner, and Moran (10) have noted a greater susceptibility to *Salmonella* infections in young animals.

The accepted differentiation of the various clinical manifestations of salmonellosis (25) may be described as: (1) *Salmonella* fever, a mild febrile illness; (2) *Salmonella* septicemia, remittent fever, more severe with localization of infection in various tissues in later stages; (3) *Salmonella* gastro-enteritis (food poisoning), the most common

form; (4) extraintestinal infections (localized), such as cholecystitis, osteomyelitis, and otitis; and (5) the normal carrier state.

A few *Salmonella* types appear to be involved predominantly in certain forms of salmonellosis. For instance, *Salmonella paratyphi A* and *Salmonella cholerae-suis* occur more frequently in *Salmonella* fever and septicemia, the latter type being fatal in many cases; *Salmonella typhimurium* and *Salmonella newport* more commonly cause gastro-enteritis; and *Salmonella pullorum* is primarily the cause of an infection of fowl. However, all types should be considered as capable of causing food poisoning. In general, the incubation period is from 12 to 36 hours. Onset of illness is sudden, accompanied by vomiting, diarrhea, abdominal pain, fever, and sometimes prostration. The duration is seldom longer than 3 to 4 days. *Salmonella* food poisoning is considered a type of infection, i. e., the illness is caused by the multiplication of the organism in the intestinal tract rather than by the ingestion of preformed toxins (8). The belief that a "toxin" type of *Salmonella* food infection occurs was proposed by Savage (cited by Dolman) (9) when *Salmonella* could not be isolated from suspected food or from the patient in outbreaks of food poisoning in which the incubation period was short. Numerous experiments involving the feeding of filtrates or heat-killed *Salmonella* cultures to animals and human volunteers have been conducted. These studies have failed to demonstrate the existence of preformed *Salmonella* toxins.

INCIDENCE OF "SALMONELLA" GASTRO-ENTERITIS

Definite data concerning the incidence of *Salmonella* food poisoning in the United States are not available due to the many unreported sporadic cases. These cases usually are mild and are of

*Veterinary Public Health Services, CDC, assigned to Florida State Board of Health, Jacksonville, Fla.