Insect and Rodent Control Problems in Region IX

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The States comprising Region IX (Colorado, Wyoming, Montana, Idaho, and Utah) lie almost wholly within the semiarid region of the United States. The lack of water has considerably retarded the growth of agriculture and industry and, as a result, the population density is low and insect- and rodent-borne disease is consequently less evident. This article summarizes briefly the problems encountered in the Region.

MOSQUITOES

Mosquito problems in the Region have several aspects. The major one is concerned with mosquito production on irrigated lands. In the five States there are now under irrigation approximately 8,758,293 acres** or 45 percent of all the land under irrigation in the Western States. The management of this irrigation water with periodic flooding and drying as well as the discharge of surplus water into poorly drained areas results in the breeding of enormous numbers of floodwater mosquitoes particularly *Aedes vexans, A. dorsalis,* and *A. nigromaculis.* When this water is drained into semipermanent ponds and roadside ditches conditions soon become ideal for the production of *Culex tarsalis* (a proved encephalitis vector).

The problem is complicated along the marginal area of the Great Salt Lake where irrigation water discharges into areas along the marshy shore line. Due to the high concentration of population in this area together with expanding industrial development and defense establishments, the citizens of several counties have banded together and organized mosquito abatement districts. This was made possible by the adoption of a State law empowering local communities to organize for mosquito and fly control purposes.

Malaria was at one time present in Utah but very few locally contracted cases have been found in recent years despite the presence of a western vector, *Anopheles freeborni.* Reported malaria morbidity in Region IX is shown in table 1.

Other mosquito problems exist. In several recreational areas mosquito control measures are being planned by local authorities. In northern Idaho a considerable mosquito problem exists in the spring and early summer around some of the permanent lakes in that area. When the snow melts in the spring the level of these lakes rises flooding low-lying meadowland and the alluvial fans of several stream systems. The resulting large swarms of floodwater mosquitoes make life miserable for the inhabitants and livestock in the area. This problem may be alleviated to a large extent on Lake Pend Oreille when the dam at Albeni Falls, Idaho, is completed. This dam will hold the lake at a constant level during most of the breeding season and the intermittently flooded areas will be under water for this period.

Table 1

REPORTED MALARIA MORBIDITY*
1940-1950

Year	Colorado	Wyoming	Montana	Idaho	Utah
1940	3	7	1	7	5
1941	2	2	–	–	–
1942	3	3	1	4	5
1943	30	2	7	1	313
1944	36	13	28	3	157
1945	830	17	31	39	112
1946	86	82	7	66	93
1947	9	9	3	16	48
1948	8	–	1	–	2
1949	4	–	–	2	2
1950**	3	3	–	1	–

*From annual summaries by States of notifiable diseases.
**Preliminary.

FLY CONTROL

Several cities in the Region have active fly control projects. Flies become a serious problem in some areas and, especially in the towns catering to tourists, some effort is being made at controlling them. The concurrent emphasis on good community sanitation for rodent control will probably relieve the fly problem somewhat and it will make possible the promotion of better fly control. Authorities at Boise, Idaho, planned a combined mosquito and

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fly control program for the summer of 1951. Fly-borne disease is present in some areas but to what extent is not known.

RODENT CONTROL

At present the problem of rats in the States of Region IX is limited to certain areas in the five States. They are a problem on the eastern prairie with localized infestations in the Great Salt Lake Valley and in northern Idaho. There is some indication that rats are limited to certain areas and do not seem as firmly established as elsewhere in the United States. In some towns they are localized at several foci and do not invade all parts of the towns despite readily available food supplies and harborage. There is some evidence that minimal control measures such as general sanitation and intensive eradication measures in their foci will entirely rid some areas of rats.

The entire subject of rodent distribution, history of infestation, and recommended control practices in Region IX will be the subject of a later paper.

PLAGUE

Sylvatic plague is present in all the States of the Region. The proximity of these infected wild rodents to colonies of domestic rodents is one of the major justifications for rodent control in the cities in this area. If domestic rats should become infected, the danger of human cases would be intensified. No economically feasible control methods for wild rodents are known, but removing their most intimate contact with man should supply reasonable protection as well as suppress populations of the destructive, disease-carrying Norway rat.

OTHER ARTHROPOD PROBLEMS

Ticks, particularly *Dermacentor andersoni*, are widely distributed in the mountainous areas. This tick transmits Rocky Mountain spotted fever and Colorado tick fever. Tick infestations are commonly encountered during May through July and constitute a menace to fishermen and vacationers. *Ornithrodorus* or soft-shelled ticks occasionally have been implicated in tick-borne relapsing fever, particularly at the higher elevations.

Certain species of the family, Ceratopogonidae, or biting gnats, are locally important. They have seriously interfered with confort in several areas in Utah and Idaho and at Rifle, Colo., where the Government maintains a pilot plant for producing oil from oil shale.

Tularemia is widespread and can be contracted by handling wild rabbits and other susceptible wild rodents, by the bite of deer flies and ticks, and by drinking water contaminated by the excretions of certain animals.

CDC Training Program in Environmental Sanitation

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