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THE PEST ANIMAL PROBLEM:
Keynote Speech

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His association with Vertebrate Pest Control began when he was Field Assistant, 1913-15, and Biological Assistant in Charge of Rodent and Predator Control (California District), U. S. Biological Survey, 1916-18. Later he was Superintendent of Rodent Control, California State Commissioner of Horticulture, 1918-19; and State Department of Agriculture, 1919-22; Department Zoologist, 1922-23; Chief of the Bureau of Plant Quarantine and Pest Control, 1923-31; Supervisor of Rodent Control, 1931-33; Supervisor of Rodent, Weed, and Plague Control, 1933-37; followed by administrative duties embodying direct supervision of Department pest animal control until 1954.

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THE PEST ANIMAL PROBLEM

By
W.C.Jacobsen

There is an inscription across the top of the impressive facade of the National Archives Temple in Washington, D. O., which reads: "What is Past is Prologue."

So be it. Perhaps it applies to us here- At least the inscription furnishes a basis for me to indulge in a few comments of historical significance as we undertake consideration of vertebrate pest control in its many phases.

The earlier documents available to us reveal that with every expansion or westward advance into newer areas of agricultural production or livestock enterprises there also arose a variety of pest animal problems. However, it seemed to take years before any concerted efforts at suppression over and above those of individuals or communities came into being. True, it was the function of the Bureau of Biological Survey and its predecessor, the Division of Ornithology and Mammalogy in the U. S. Department of Agriculture to study food habits and life histories of birds and mammals and to suggest methods of curbing destructive species.

Along that line, the following comment is interesting: "The essential basis of the work of the Biological Survey is the study of American birds and mammals in their economic relations. Many of our mammals and a few of our birds are seriously destructive, so that any accurate knowledge of the food and habits of such pests and of effective means for reducing their numbers and preventing their ravages is becoming more and more necessary to

profitable agriculture and stock raising." (1909 U.S.D.A. Year Book). At that time any improvements in control techniques were published for the information and guidance of interested persons and officials.

This work proved to be realistic In all its features and ultimately led to pertinent and consistent investigations in pest animal control. These studies in turn served as a basis for showing the need for cooperating endeavor culminating in statewide interest, first in Kansas (1901), considerably later in North. Dakota (1916), and with many intervening developments.

Among the early major attempts to find a responsive vertebrate pest control process against rodents in the United States were those directed by the Biological Survey towards developing some specific contagious or infectious disease which would be effective against prairie dogs, other spermophiles and meadow or field mice but not transmissible to other vertebrates. The conclusion of the researchers that such diseases as were tried lacked effectiveness resulted in an intensification of efforts to find a good poisoned bait or lethal gas which would be helpful in control but which would not be harmful to beneficial species.

Let us bear in mind that save for a few individuals, who had in their own words discovered panaceas, the persons who were in charge of developing satisfactory control devices were mainly biologists and scientists who had a fundamental aversion to the exposure of lethal agents which would be destructive of valuable birds or mammals, particularly to those which might deliver a

a creditable performance as natural enemies, particularly of field rodents.

Cooperation between farmers in rodent control work throughout Kansas during the first decade of the century was inspired and Encouraged by Professor David E. Lantz, a prolific writer, and led him into the service of the Biological Survey. By that time field successes with poisons against meadow mice in the Nevada mouse plague and Stanley Piper's development of the Biological Survey strychnine formula for ground squirrel control were readily recognized as major high points in the developing processes.

The real impetus to systematic pest animal control came with the discovery of the role played by certain vertebrates in harboring diseases transmissible to humans, notably Rocky Mountain Spotted Fever, bubonic plague, and rabies. As a result of these discoveries, U. S. Public Health authorities moved in two very specific directions: (1) They sought improvement in field control techniques through requests to the Biological Survey to give them the benefit of its experiences with effective methods, and (2) They began the dissemination of economic data to gain better support from farmers and from agricultural leaders, both public officials and private, and also to gain financial support from county boards of supervisors or comparable county officers.

As a rule, in the western states, because these animals were designated to be in the "pest" category, these local legislative officers also had authority by law to provide for the control of

pest animal species long before specific statutes required control for public health reasons or by abatement procedures.

Much of our vertebrate pest control prologue occurred in the second decade of the present century. Congressional attention became focused on the need for leadership in the Biological Survey to guide and correlate the widespread activities engendered to meet both health and economic necessities. In the meantime, jurisdiction over the national forests had come into the U. S. Department of Agriculture in 1905 and the Forest Service had requested material assistance in protecting grazing against forage losses from rodents and flock and herd losses from predators. Also, it was clear that federally owned and controlled lands in forests and on public domain were serving as breeding grounds to repopulate adjoining private property. All these features fitted into a number of logical sequences leading to extensive poisoning campaigns. Agriculture had advanced and expanded so that the artificialities created in lieu of natural environments were augmenting food supplies to nurture greater numbers of wild vertebrates which, in turn, led to the need for more artificial curbs. Natural enemies were still recognized for their material assistance and value but the agricultural expansion had diminished their effectiveness.

In 1913 field crews were designated to control destructive rodents in national forests, and in 1915 the first appropriation was made to suppress predatory animals on federally owned and controlled lands. These organized campaigns led to greatly improved correlation of pest animal control activities of federal, state,

county, and private agencies engaging in such work for both economic and public health reasons. A law of statewide application had been enacted in California giving authority as early as 1909 to local health agencies to enforce ground squirrel clean-up.

All these developments had taken place in stride. In some states the newly created Agricultural Extension Service aided in educational activities. In North Dakota a statewide campaign was undertaken during 1916. This action was followed in California in 1917 when vertebrate pest control was strengthened materially with the enactment of a State law prescribing rodent control as a specific function of the established agricultural regulatory set-up. This was of a character and type not found anywhere else in the United States at that time. The county boards of supervisors could delegate rodent control work to the county horticultural commissioners operating under the guidance of the State Horticultural Commissioner. These two agencies later became the county and state Departments of Agriculture as we now know them.

We speak about these formative years starting in 1913 with some assurance because of personal experience and association with these developments, having understudied several leading Biological Survey field specialists in pest animal control in California, Nevada, and Utah and as a student in the Department of Zoology, University of California at Berkeley. It was truly gratifying to the speaker to have this dual background at the outset of our efforts to perfect a fairly consistent systematic and non-controversial series of programs dealing with the suppression of

destructive and disease-harboring rodents, with, marauding and disease-bearing predators, and in time including non-beneficial, crop-destroying bird species.

Certain fundamental guiding precepts were manifest from the beginning in 1917 and others initiated in due course. If subsequent experience indicated desirable modifications, some were made. In the main these precepts, based mainly on knowledge gained in the field, could be stated as follows: (1) Do everything possible to prevent any losses to domestic birds and animals and beneficial wildlife; (2) Utilize specific or selective methods against the pest animal involved and determine effectiveness of poisoning operations through prebaiting with untreated materials; (3) Refuse to recommend any baits treated with phosphorous or cyanide; (4) As new hazardous forms' of lethal materials become available, establish safeguards by law to prevent these getting into the hands of unauthorized persons, thereby to avoid Injury or misuse; (5) Establish restrictions to prevent the Introduction of any vertebrate species into the State which might prove to become an agricultural pest or a menace to its native wildlife (1933); (6) Engage in full cooperation with other agencies interested in pest animal suppression including the adoption of formal cooperative agreements or memoranda of understanding; (7) Avoid duplication in field control work; (8) Maintain every possible adherence to good conservation principles in keeping with established legal responsibilities; (9) Be certain that farm organizations and agricultural industry groups were aware of our objectives;

(10) Confer or correspond with those desirous of fomenting controversy in a frank and open manner.

To elaborate a little on some of the foregoing points: The record is clear that in California at least every effort has been made to safeguard against the misuse of poisons. It would be foolhardy to deny that regardless of precautions, an occasional accident or transgression might occur when so many individuals are involved.

In an effort to establish and maintain smoother field operations and management, an agreement was reached with State public health officials for them to handle urban rodent problems (primarily rat control) but in rural areas the effort should be handled by the agricultural regulatory officers, and with the further agreement that there should be consultation between the agencies where plague areas were involved.

In earlier years, before plague in humans was found to yield to sulfa and vaccine treatment, the agreement provided that plague area rodent control operations to reduce the hazard to humans from sylvatic plague should receive primary attention even in forested and desert regions.

Right from the start in predator control work, field management was allocated by formal agreement to the U. S. Biological Survey in administering—as though it was part of its own program—the State's participation and the agreement projects with county boards of supervisors and local wool growers associations.

However, one understanding of major importance to our State, to wit, that the U. S. Biological Survey and its successor, Fish and Wildlife Service, would materially assist on problems requiring particular research attention, never was fully achieved. It was asserted that other areas needed more serious and critical attention. The result was that research assistance was sought increasingly from the College of Agriculture, University of California.

Our pest animal control officials are good conservationists and as such measure up better than the average. Because of the nature of their duties and responsibilities, the law and necessity of their obligations sometimes seem to upset their truly inherent conservationist principles and policies. In our experience there has never been a problem arise but what judicious discussion by reasonable people has led to acceptable solution.

Frequently this interest by people of good will has initiated the need for further research and, if the experience is a good teacher, this factor is still the most essential.

Truly, hundreds of dollars have been spent where thousands of dollars were needed. The field is large enough so that more of the better equipped educational and research institutions can and should embrace it. All efforts in this direction will yield the best results if there is adequate correlation.

This conference can well point the way to better accomplishment in necessary research projects. Further, it can be the

instrument to bring scattered knowledge in methodology to a focal point to the benefit of all. If it does these two things, it has more than justified its creation. Those who have the foresight to call this group together are to be commended for their needed action and the excellence of the conference program, and we can hope for future beneficial developments. If it should lead to the formation of an International Society then a dividend accrues that is also an insurance for sound vertebrate pest control procedures and even better conservation.

Remember that "What is Past is Prologue" and the prologue usually leads to the main performance.

My congratulations to all gathered here today and best wishes toward foreseeable success from this most important beginning.

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