

FURTHER FACTS CONCERNING LOSSES TO WILD ANIMAL LIFE THROUGH PEST CONTROL IN CALIFORNIA

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One of the reasons that more care has not been used in conducting pest control campaigns in the past may be that the officials were not informed as to the nature and extent of the losses incurred by wild life other than the pests they were trying to destroy. If this be true then there is need for recording as much as possible of the known losses to wild life through pest control. The accounts here presented, if they fail adequately to indicate the losses to animal life, at least show the nature of those losses in a great many kinds of circumstances.

For the person who may be of the opinion that organizations for the study of birds should have no interest in the killing of mammals it is well to point out that some of the factors which have already so upset our mammal fauna are being rapidly developed to "regulate" bird life. The accelerated development of pest control methods and a tolerance for practice of them could so change our native bird life within a few seasons that all previous activities for preservation of it would be nullified.

When permanent policies for treatment of wild birds and mammals which show relations to agriculture are adopted, they must be satisfactory for the welfare of a majority of citizens and they will result from studies of many phases of animal and human activity. In these inquiries one of the most important questions to be answered is whether animals other than those considered as pests are actually killed during the pest control campaigns. This involves determination of the kinds and numbers of the animals affected. Because only a small proportion of dead wild animals ever are found by people, a fact which is evident to all persons who have had field experience in natural history, negative evidence is of small value in arriving at sound conclusions as to the total number killed. The most dependable tests, then, for conclusions regarding this question are the positive findings of dead animals. Evidence of this sort given in the first of this series of reports (Condor, xxxiii, 1931, pp. 95-102) pertained to the results of placing poisons for squirrels in those areas where thallium has been the most important lethal agent in recent campaigns.

Some naturalists have inferred that thallium poisoning of wild life is much more extensive than poisoning due to other substances. Actually the losses to animals may be dependent upon the amount of baits distributed and the manner of placing them, and other substances are capable of causing tremendous losses also. As has been pointed out by me (Condor, xxxiii, 1931, p. 103) the animals now being killed in California incidental to rodent control, lose their lives directly and *indirectly* through the use of thallium. The chief reason for using thallium is that it makes better kills than other types of poison, but under certain circumstances strychnine, too, is effective. The opinions of officials upon this question are summarized in the following statement of one of them recently printed (State of California, Department of Agriculture, Special Publication No. 109, 1931, p. 7).

"With the development of thallium as a supplementary material to use at seasons and in areas where strychnine is ineffective, an adequate ground squirrel control program was possible for the first time. On certain areas treated repeatedly with strychnine preparations squirrels could only be held in check—not appreciably reduced. Consequently it was necessary to expose lethal materials in nearly the same amounts annually—a process which so far as could be foreseen, would be endless."

The successful (upon basis of large kill) use of squirrel poison, then, involves the use of both poisons, as well as others, but so distributed as more thoroughly to cover the ground than ever before. Strangely, this very circumstance, which makes

the losses to wild animals so extensive in squirrel killing, has been developed and dwelt upon to justify continuance of the campaigns.

In the reports here placed on record are observations which concern many parts of the state and many types of attempted pest control. Each paragraph summarizes the important facts obtained from a signed statement of the first-hand observations of one person. That the summaries do not reflect the feelings of the observers toward the practices of pest control is shown by comparison of the summaries with the known opinions of a majority of the persons. In other words many of these observers have written that they are strongly in favor of poisoning campaigns, but they have not allowed this circumstance to prejudice reports of their findings. I have faith in the truthfulness of every one of the observers here quoted. Special care has been used to discard any statement which showed any indication of an influence of rumor. Where available the following important items are included in each paragraph: Number and kinds of animals found dead; time and place of finding them; agencies distributing the poison or traps; miscellaneous comments on the type of poison used or general effects of the campaigns.

Summaries of reports of 285 observers on birds or animals other than squirrels and coyotes which were unquestionably killed during pest control campaigns:

On one of my field trips in 1927, I found eight dead skunks in a radius of one-half mile; also two or three pellets of poison. It has been my observation that skunks are by far the most liable of any of our fur bearing animals to take this poison. I have known of dogs being poisoned as long as one year after the poison was put out. At Ramsey, Mendocino County, in 1927, I shot a crow which was carrying a pellet and I was told by a rancher there that the nearest poison put out was three or four miles away. Crows are very numerous here throughout the year and if it is a fact that they carry the poison in any quantity the value of this means of pest control is questionable.

Skunk, coon, fox, dog; kept no record of date or number; between Deer Creek and Mill Creek in Tehama County; government poison.

Skunk, coon, gray fox, deer, dog; on Cone and Ward sheep range in Tehama County; state and county poisoners.

Five skunks, 3 gray foxes; 1927; in northern Tehama County.

Two skunks, 1 coon; about 1927; near Nevada City, Nevada County; two months after government poisoner had been there.

One skunk, 1 coon; March, 1928; Eldorado County; U. S. Biol. Surv. poison.

Five dogs; July 7 and 12, 1928, May 2 and July 10, 1929; Deep Creek and Boat Lake, Modoc County; U. S. Biol. Surv., strychnine.

Uncounted cottontail rabbits and quail, 4 dogs; November and December, 1927 and 1928; near Chico, Butte County; by state trapper and ranchers; strychnine in meat, fruit and grain.

One skunk; September, 1929; 1 coon; July, 1929; Dos Rios, Mendocino County; strychnine.

Skunks, gray foxes, gray squirrel, quail, dogs; in winter on G. Ward's sheep range. Many skunks and gray foxes; about 1925, within a radius of fifteen miles around Auckland, Tulare County; coyote poison.

Skunk, coon, bear; Glenn and Tehama counties.

Quail; Mariposa County; agriculture department.

Quail, coon, skunks; central and southern Humboldt County.

Great many skunks, coon, ring-tailed cats, gray foxes; 1918-1919 and other years; Singer Creek, Deer Creek, and Mill Creek, Tehama County, strychnine.

Approximately 20 to 25 pigeons, rabbits and small birds; late fall and winter, 1928 and 1929; near Fillmore and Piru, Ventura County; strychnine.

Varying number of rabbits and quail; each year for last twenty years in Black Mountain region; strychnine.

Twenty grouse, 35 or 40 quail, 3 foxes, 7 coons, 30 skunks; 1928; near Black Butte and Anthony Ridge, Mendocino County. I helped my brother. He was employed by state and county in poisoning predatory animals. Used strychnine in tallow baits,

also in liver, and poisoned barley. I can't see how any one could avoid poisoning furbearers and even stock. I have seen several cattle poisoned and a number of hogs.

About 10 skunks, 3 foxes, 2 deer; in summer and fall, 1928; Mt. Pinoche country, Mariposa County; tallow baits used in private poisoning campaign by Messrs. Best and O'Connor.

Doves, meadowlarks; during last ten years; Alameda and Contra Costa counties; by rodent exterminators.

Skunks, gray foxes, coon, ring-tailed cats, birds (innumerable); in last three or four years; Tehama, Butte and Glenn counties.

Found four tame pigeons; killed, May 28, 1930; on own ranch; strychnine. Quail have always been plentiful until last two years, but seem to have disappeared. There has been practically no shooting in this locality and this section is ideal for quail with plenty of water and little farming. Mt. Ranch, Calaveras County.

I poisoned for four months and killed skunks, coon, civet cats, chipmunks, gray squirrels, rats, mice, jays, crows, one eagle, and quail. Found deer that looked like they had eaten those tallow baits and died from them. They shall never put another bait on my place as it only does harm. I have one thousand sheep and 2500 acres of land.

I have had two calves poisoned of my own. Have found three carcasses of fawns and one young buck, numerous owls, hawks and various birds. My neighbor has had two dogs poisoned, one of which recovered but the other died and died very painfully. The number of carcasses of birds found along the trails and by the water tanks shows, at least to me, that there was something besides the natural sicknesses which caused the death of the birds. Magpies were found dead. In San Luis Obispo County.

Skunks, coon, gray foxes, doves, quail (could safely say hundreds); Charles Mt., South Nealen, Goat Peak and many other places; government poisoning and ranchers; strychnine and cyanide.

Fifteen or 20 quail; in December, 1930; and ring-tailed cats, skunks, coon and gray foxes; in 1925; Sutter Buttes, Sutter County; poisoned barley put out for squirrels.

Doves, meadowlarks, sage hens, jays; in spring squirrel poisoning and fall coyote poisoning; near Canby, Modoc County; both farmers and state poisoners.

As many as 10 skunks at one station, foxes, coon, buzzards; northern Mendocino County; agencies responsible, U. S. Biol. Surv. and County Supervisors. The campaigns reduce the coyotes all right but should be conducted more carefully.

Three dogs; about October 20, 1930; Board Ridge and Poison Glade, Tehama County.

Approximately 17 skunks, coon, quail; December, 1926, November, 1927, September, 1928; Beegum district, Tehama County; U. S. Government poisoners.

Seven gray foxes, 10 wildcats, 4 dogs; within last four years. The present poisoners in the southwest part of Tehama County (1930) are not careful to post the poison notices as they should be and make most of the stations along the public roads where the stockmen and hunters are compelled to travel and there is nothing to indicate where the poison is placed. The poisoners say that the people can keep their dogs muzzled but muzzled dogs are about as useless as a prizefighter with his hands tied behind his back. The fear of poison prevents the men who have trained dogs for mountain lions from using their dogs for this purpose and the consequences are that lions are becoming more plentiful to menace deer and other stock. I believe that the lions and coyotes destroy more deer during the winter and spring months than the hunters during the open season. The present way of handling the poisoning method is the cause of many range owners prohibiting the use of poison on their ranges, while they are still in favor of the poisoning method for the destruction of coyotes. We are as anxious as any one can be to exterminate the coyotes but at the same time are satisfied that it can be done without antagonizing so many hundreds of people by neglect of precautionary measures.

Ten magpies; about December 1, 1929; near Eagleville, Modoc County.

Skunks, coon; southern Humboldt County; sheep men and government hunters.

Twelve skunks, 5 coons, 7 hogs, 7 dogs; winters 1926 to 1930; Buck Mountain and vicinity, Humboldt County; strychnine.

Three skunks, 2 gray foxes; 1925 and 1926; about three miles southeast of Manton, Tehama County.

At least 25 in all of quail, flickers, meadowlarks, white-crowned sparrows, towhees;

March, 1928; Middle Ranch on Catalina Island; the Wrigley Company; barley and strychnine (?).

Nine skunks and 6 coons (in one place), ring-tailed cats, wild cats, bear; during hunting season, 1928 and 1929; on Bair's Ranch, Redwood Creek, Humboldt County; ranch foreman distributed 3500 tallow baits in one week.

One skunk, 1 badger, dozens of magpies; winters of 1927 and 1928; Hot Spring Valley near Canby, Modoc County; poison in horse tallow and meat.

Very few skunks; during past year (1930); Little Van Duzen River, Humboldt County; government coyote hunters; all possible care is taken in distributing poison.

A few skunks; in northern Humboldt County; government poison, strychnine.

Quail, 50 skunks, 10 gray foxes; December, 1924; on Deer Creek near Vina, Tehama County; poison put out for squirrels and coyotes.

Grouse (as many as 9), bear, deer, wildcats, skunks (by the score), coon (by the score); in summers of 1928 and 1929; on Hooker ranch and Bair ranch, Humboldt County; government poisoner and rancher; strychnine; I have worked in the hills for years. I have also put out poison while at my work and know it killed the deer and other animals.

Skunks (hard to give exact number), 3 coons, 2 dogs, 3 hogs, 1 gray fox; summers of 1922 and 1923; Mendocino County; a lot of the poison was put along main traveled trails and not properly taken care of.

Perhaps a dozen cottontail rabbits; over a period of years; San Diego and San Benito counties; individual farmers; thallium and strychnine; I heartily endorse such campaigns.

Two dogs; in 1925; San Ardo country in Monterey County; the county in cooperation with the state.

About 10 or 12 doves and jays, 4 skunks, 4 or 5 dogs; 1927 and 1928; Los Gatos Creek, Fresno County; myself and County Agricultural Commissioner; strychnine; county squirrel poison and government coyote poison.

Quail, turkey buzzards, hawks, dogs, coon, skunks; fall and winter of 1928; on Redwood Creek; government poison, strychnine; the poison was laid along side of the trails where people had to travel, and deer were shot and loaded with poison for bait.

Three or 4 linnets, 2 or 3 sparrows, 4 or 5 dogs; in 1928 and 1929; Broderick, Yolo County and Tehama County; strychnine.

Perhaps 18 skunks and coon; fall of 1920; at Garberville, Humboldt County; 1925, at east end of Jackson Valley, Mendocino County; coyote destroyer; latter in traps.

About 15 skunks and gray foxes and a few coons; from 1924 to 1930, in Pope Valley, Napa County; poison scattered by both farmers and government trappers; strychnine. Foxes have decreased but skunks and wildcats seem to have increased, coons about the same. The deer have increased a great deal too, without the coyote.

Quite a few quail; summer of 1928; about ten miles west of Redlands, San Bernardino County; rancher put out poisoned wheat for squirrels and used very little judgment in so doing, and killed many quail.

Eagles, jays, foxes, skunks; over period of last ten years; Pine Valley, Rattlesnake Valley and Cuyamaca Grant; poisoning cattle dead on range and stock killed by mountain lions; strychnine.

About 20 skunks; 1924; two miles northeast of Santa Rosa, Sonoma County; private parties; strychnine for rabbits.

Four skunks 8 coon; December 10, 1929; Trinity County; strychnine.

Occasional dogs pick up bait; Truckee district and around Nevada County; regular bait with strychnine. Private parties in Nevada County, scattering poisoned grain, as barley, for squirrels, often do not take the pains necessary to put the grains where the squirrels will get them, but scatter them broadcast, and rabbits, gray squirrels and occasional birds pick the grain.

Larks, 2 quail, 3 brush rabbits; over a period of three months; near Santa Ana, Orange County; strychnine and arsenic. Most ranchers around here use grain (barley, oats, wheat) soaked in strychnine or arsenic. Before the poison is put out rabbits and quail are plentiful. Ten days after, very few are seen. They scatter the poisoned grain over the ground mostly for squirrels and rabbits.

One hunting dog belonging to a man in Vallejo; on Chappel Creek near Monticello on Putah Creek; poison put out by private land owner. Dog died within five

minutes. The signs were posted on a road, but we were back on the ridge about four miles. It was not posted there. All ground should have been posted.

Seven doves; spring months eight or nine years ago; sixteen miles north of Los Angeles, on Ventura Boulevard; ranchers; wheat grains, unknown poison.

Three skunks, 1 coon, and 3 or 4 other animals; about June 28, 1930; on Burnt ranch; not sure who distributed poison, think U. S. Biol. Surv. Saw a few dead ring-tailed cats that I believe were killed by squirrel poison.

One-half dozen or more roadrunners; June 1 to October; Palo Verde Valley.

Quite a few jays; October 16, 1930; Alameda County; strychnine put out by county.

Several skunks, 3 coon, several gray foxes, hawks, magpies, crows, robins, at different times in winter of 1929, Tehama County; think strychnine. Campaigns of great value but could be bettered with less harm to the fur animals and others if properly handled.

Quail, doves, skunks (not counted); July and August, 1923 to 1925; foothills in Fresno and other counties; poisoned barley put out mostly by stock ranchers along foothills.

Numerous magpies, vicinity of Fruto, Glenn County; 3 skunks, vicinity of Paskenta, Tehama County; late fall of 1927; probably U. S. Biol. Surv.

Fourteen skunks, 3 coon, 1 ring-tailed cat, 3 dogs; 1927 and 1928; in Bald Hills, Humboldt County, vicinity of Coyote Rock, Pine Creek, and divide between Klamath and Bluff Creek; U. S. Biol. Surv. If the actual value of fur lost due to poisoning could be realized other methods would be used, eliminating this waste.

Three or 4 skunks, 1 gray fox; 1925; Squaw Valley, Fresno County; county and state. Campaigns very effective if properly handled.

Very few skunks, crows, hawks; around the Harris vicinity, Humboldt County. The only objection I have is the fear it gives me of poisoning my valuable stock dog. There is a great increase in deer and quail due to this campaign.

About 200 skunks, coons, dogs; between November 1, 1929, and February 1, 1930; Shasta and Tehama counties; government men and sheep men; strychnine.

Approximately 150 quail; at different times during the year, 1929; in the gardens of Sausalito, Marin County; several kinds of snail poison. Private parties put the poison out to kill snails and slugs. The matter was brought to my notice and I went to the dealers and had them warn the purchasers to cover the poison so quail could not get at it. We had notices put in local papers to that effect and when poison is put out now, it is screened so that quail can not get at it. I have had no complaint this year as yet, and there are more quail than ever. All poisoning should be stopped as it is usually done by inexperienced persons, who are not able to get the animals intended, but get valuable ones.

Many skunks, coons, hogs, 6 dogs; 1927, 1928 and 1929; Nashmead and Iron Mountain district, Mendocino County; government poison.

Hundreds of gray foxes, wildcats, bears; July, 1920, to October, 1927; in Hazel Creek district, Shasta County.

Four or 5 skunks, 4 or 5 coon; Mad River ridge, Humboldt County; strychnine.

Between 25 and 75 skunks, 1 coon, 4 dogs (own); spring 1927 or 1928 and fall of 1929; around Caution, Trinity County; U. S. Biol. Surv.; strychnine. As to killing of skunks, I believe that good riddance.

Total of about 20 doves, gray foxes, cats, skunks; 1917 and subsequently; Tehama and Glenn counties; strychnine. I believe the work should be kept up.

Lots of yellow-billed magpies, California jays, gray fox, fisher, skunks (15 and 20 in close proximity to poison station); October, 1929; in western part of Tehama County on Log Spring ridge. I have seen poison baits more than a mile from the poison station, carried by birds.

Many skunks, gray foxes, 13 hogs; Cottonwood district, Tulare County; government poison.

Quite a number in all of skunks, coons, gray foxes, dogs; 2 or 3 years ago (1930); Payne Creek, Tehama County; government poison; coyote poisoning is a detriment.

Three gray foxes, 1921 or 1922; Three Rivers, Tulare County.

Four or 5 foxes; November 20, 1929; Oregon City, Butte County.

Two skunks, 1 large hawk; about July, 1928; Mad River drainage in Humboldt County. The skunks were found within twelve feet of part of a deer carcass, the flesh of which had been slashed and poison, probably strychnine, inserted. Authority re-

sponsible, Biological Survey. This matter was taken up at the time with the Biological Survey by the Forest Service with the apparent result that this form of poisoning stopped in the locality described. I myself, in 1925 I believe, distributed 350 pork baits and took up those remaining two days later. The only dead animals found, other than coyotes, were mice and rats.

Magpies, jays, dogs, 2 hogs, 4 coon, 7 skunks; near Grimes, Colusa County; U. S. Biol. Surv.

One coon; about 1927; three miles below Markleeville, Alpine County; on the Carson.

Quail, cottontail rabbits, fox, coon, skunk; in last three years; near Plymouth, Amador County; U. S. Biol. Surv.; poison and traps.

Have reliable information that strychnine poisoning conducted in Antelope Valley, Los Angeles County, killed 20 to 25 rabbits, 30 blackbirds, and 3 doves, in April, 1929. Both strychnine and thallium used. Poisoning is good.

Many quail; 1920 to 1925. Ettersburg, Humboldt County; poisoned wheat put out by private individual. I picked up the poisoned ones and used them for trap bait for coon. They were killed by the dozens and laid all over the lower apple orchard (about 12 acres).

Many quail, 1 coon, 6 or 8 skunks; Shasta County; poisoned barley put out by farmers' organization.

Skunks; Honeydew, Humboldt County; strychnine. I think it is the best thing for the game that ever came in.

About 6 or 7 skunks and coon; in 1927; Cone range, Tehama County; poison put out by state and county.

Magpies, buzzards, porcupines, wildcats, skunks; whenever poison is put out; Lassen County; strychnine in fats put out by government trappers. Did not count them as was glad to see them dead.

Two stock dogs; spring of 1926; Round Valley, Mendocino County; I wouldn't have taken \$1000 for them. Campaigns very good but not extensive enough.

Quail, sage hens (not counted); fall and winter of 1928-29, 1929-30; low hills and flats near and around my place in Modoc County.

Skunks, 5 at one station, 3 more one-half mile away; near Blocksburg, Humboldt County; poison put out by a ranch foreman.

Several skunks; in 1924 and 1925, in Mendocino County; 2 skunks, 1 coon, 3 gray foxes; in 1927; in Sonoma County; coyote poison. Skunks were seen in Hull's Valley, Mendocino County, that had been poisoned by eating poisoned squirrels.

Four skunks, 7 coon, 3 bear, 2 fisher, fox, ring-tailed cat (found in one place); in January, 1929; on Sheet Iron Mountain, Shasta County; U. S. Biol. Surv., government baits.

Hawks, buzzards, skunks; several in Mendocino and Lake counties, stockmen and county trapper.

Eighty-three skunks, 5 gray foxes, 2 bears, 1 wildcat; November and December, 1926, January and February, 1927; Tehama and Shasta counties; U. S. Biol. Surv.

Eleven skunks, 3 coons, 4 foxes, 1 hog (own, near Nashmead, Mendocino County); November, 1928; about nine miles east of Santa Rosa, Sonoma County; poison in tallow pills. I have seen a few dead skunks that had eaten dead squirrels, but not many.

Skunks, coons; near Ettersburg, Humboldt County.

Twenty valley quail; May 14, 1930; at H. Dickerson ranch, 4½ miles south of Fort Bidwell, Modoc County. I opened crops of several birds and all were full of poisoned oats. This poison was put out for squirrels. Badger, 2, October 14, 1930, at Lake Annie. One at 8-mile near where trapper had poison. Skunk, 1, about October 1, 1930, at Lake Annie. This skunk was claimed and scalped by a government trapper. One, about September 18, 1930, at Tamarack Flat in traps of government trapper. Nineteen, at North Flat about two miles north of Bidwell. I believe pest control should be carried on but also think those doing it should use judgment with both poison and traps. I have tried at all times to keep posted on conditions connected with game conservation and these reports are the result of my investigation. There is no question about the squirrel poisoning campaigns. They are valuable but judgment should be used in putting out poison. I believe in predatory animal control but believe care should be used with the poison and traps. Deer will eat the tallow baits used by the government trappers. I have proved this with unpoisoned baits.

Nine skunks, 3 coon, 1 dog (own); about 1924 or 1925; on J. S. Potter ranch in Mendocino and Trinity counties.

Several turkeys killed in 1929 by poisoned barley put out to eradicate squirrels.

Three skunks, 1 gray fox; November, 1928, to February, 1929; near Red Bluff, Tehama County; strychnine put out by government men.

Five skunks, 3 foxes; 1928; in summer; Canadian Valley, Calaveras County; in traps of government trapper hired by county supervisors. Campaigns do more harm than good.

Thirty-four skunks, 6 coon; 1928 and 1929; Bend, Tehama County; poisoned tallow.

Numerous magpies, a few buzzards, 2 skunks; last two years; around Clements, San Joaquin County, and Ione, Amador County; predatory animal trappers.

About 10 magpies and crows; April, 1925; Bridgehouse, Sacramento County; distributed own poison.

Twenty crows, 50 buzzards, 4 coons, 50 skunks; between 1926 and 1930; Honeydew and coast country, all classed as the Mattole district, Humboldt County; government trappers and a lot of farmers and ranchers.

Doves (just one here and there); Perris Valley, Riverside County; poisoned grain.

Nine skunks, 5 coons, 2 ring-tailed cats, 3 deer; summer and fall of 1926 and 1927, in Del Norte County.

Nine skunks; 1927; on Sacramento River, Tehama County; poisoned meat.

Skunks, deer, coon, foxes; on Cone and Ward sheep range, Tehama County; government poisoners.

Quail, fox, skunk (a number of each); several years ago; ten to fifteen miles south of Trinity Center, Trinity County.

Doves and cottontail rabbits (not many); about August, 1930; close to corrals of ranch near Friant, Fresno County; strychnine distributed by county and myself; what few were killed did not matter.

Robins, doves, quail; 12 or 15 years ago; ranch above Volcano, Amador County.

Cats and dogs were killed from eating dead squirrels. We put out the poisoned grain for squirrels as directed by our supervisor.

Six or 7 skunks; September and October, 1926; one-half to one mile south of Clio, Plumas County; thought to be strychnine put out by sheepmen or herders.

Doves, quail, rabbits, tree squirrels; some every year for several years; near Mist, Madera County.

Large numbers of quail, as many as 6 doves in one day, quite a few foxes and skunks, wildcats; July and August, 1930; near Mist, Madera County.

Jays, skunks; in one trip in Humboldt County, I saw 8 coyotes and 5 skunks, killed by poison in three days in October, 1929, between Pilot Creek and Mad River, Humboldt County; strychnine. I think it is impossible to poison without killing other animals than coyotes but believe there are enough coyotes killed to more than offset the difference.

A few skunks and coon; December, 1926, and January, 1927; on ranch near Kneeland, Humboldt County; poison put out by owner, issued by government. Too much poison used.

Hawks, owls, buzzards, skunks, coons, wildcats, rabbits, house cats, dogs, over a period of fifty years; Gordon Valley, Napa County; mostly strychnine; U. S. Government and counties.

Pheasants, skunks, opossums; western Stanislaus and southern Mariposa counties; poisoned barley and carbon bisulphide put out by farmers and county officials. I think they should be carried on to their greatest extent.

One skunk; 1928; near You Bet; government poison put out by government trapper and sheepman.

Between 12 and 15 skunks, a great many stock dogs, house cats, hogs; from beginning of poisoning to fall of 1930; Iron Peak or between Nashmead and Laytonville, Mendocino County; poison on grain and beef and tallow pills. Ground squirrels make best baits to trap skunks; I have not been able to catch any skunk within a quarter of a mile of where poison has been put out, and for years after.

Two skunks; 1928 and 1929; on Cone and Ward winter range along Lassen trail, Tehama County.

Fifteen skunks, 2 bears, 8 coons, 6 bobcats; summer of 1930; Indian Field's ridge and Diamond Prairies. I think the loss could be avoided with proper care—not dis-

tributing poison with salmon or pieces of meat scattered all along the trails. I had a very good varmint dog poisoned about two years ago.

Nine skunks, 3 civet cats, 4 wildcats; winter, 1929; near Millville, Shasta County. This poison was put out by sheepmen. The poison was put out and never looked at.

Two or 3 skunks; near Fourth Crossing, Calaveras County; U. S. Biol. Surv.

Several skunks; when government first started campaign in Humboldt County.

Doves, larks, magpies, jays, and rabbits; found on own ranch in San Benito County; killed by state and county squirrel control. I believe that squirrel control campaigns are the proper thing.

Four skunks; October, 1924; near Bear River, Placer County; government trapper.

Doves, larks, eagles, hawks; quite a few during the past ten years; west of Alturas, Modoc County; grain and capsules.

Doves, badger, 4 coons, 3 dogs; fall and winter, 1929 and 1930; Belfast, Willow Creek district, Honey Lake, Lassen County; strychnine put out by government trappers. Baits placed for coyotes are carried off by such birds as magpies, ravens and crows. They conceal the baits in the bark of trees and other places. Because of these birds I have lost good hounds, poisoned one-half mile from any placed baits.

About 20 doves; June 15, 1929; Reliz Cañon, Monterey County. We poison squirrels on our own account with strychnine on barley.

Nine skunks, 1 bear; fall of 1925; Gravey Valley, Lake County; U. S. Biol. Surv., strychnine.

Skunks, not over 6 or 8; T. 27 N. R. 8 W.; private and government poisoners. Last winter I and my son-in-law picked up 13 coyotes, 1 eagle, 3 skunks and nothing else on our two ranges. We did our own poisoning, with the government mixture.

Quail, skunks, foxes, coons (about 100 in all); 1928; near Smartville, Yuba County; U. S. Biol. Surv.

Two to 5 skunks and gray foxes per year; 1920 to 1928; 8 to 15 miles north and northwest of Auburn, Placer County; county authorities and sometimes farmers.

Not many quail, many of each of flickers, magpies, foxes, bears, skunks, and coons; September 25, 1927 to April, 1928, and November, 1928 to February 1, 1929; all parts of Tehama County; government trapper. Campaigns are fine if handled right. I worked two winters on the poison work and made a study of it. The most birds are poisoned by the poisoned meat, not the baits.

Six skunks, 2 foxes, 1 badger, 1 dog (own, lost in 1930); February 1, 1928; Summit Level and near Sheep Ranch, Calaveras County; government poison.

Doves, jackrabbits (not counted); Bear Valley, San Benito County; poison put out by ranchers.

Eight skunks and civet cats; fall of 1925; South Fork Mountain; Trinity County.

Quail, skunks; 1928 to 1930; Waldo district in Yuba County.

Skunks, badger, mink; find these animals around every station where poison is used providing they inhabit the country. Have found very few mink as poison must be put out near streams or they don't get it, but the other two animals I have found in numbers. The skunk has been nearly put out of our country (Modoc County) by poison. As for bird life I believe poison has done very little damage here, the crow being the only bird it seems to kill and sometimes a sage hen. Last year there were several head of cattle killed by eating poisoned baits in this valley and many valuable sheep dogs. I believe the poisoning campaigns are wrong.

Eight skunks; August and September, 1928; near Putah Creek, Lake County.

Robins, jays, 3 coons, 5 skunks; summer and fall, 1929; in Mad River section, Humboldt County. (Part may have been in traps.)

Skunks, coon, foxes; Dunlap, Squaw Valley and Kings River district, Fresno County; state and county men and private individuals. On one occasion I saw as many as fourteen skunks killed at one bait set by a rancher for coyotes. I lost two valuable dogs by poison.

About 15 skunks, about 10 coons; in February; between Garberville and Alderpoint, Humboldt County; state poisoner.

Skunks; near Bridgeville, Humboldt County. In February the men I work for sent for the state poisoner. He came and put out five stations and ten baits. He asked me if I would look after them for him. The first time I went around I found 12 skunks, the next time 8, and the next time 5; also a few dead quail near there. I took the

rest of the poison up and buried it and when the man came back I told him how it got the skunks and he said, "Yes, we always get a few." No coyote tracks were seen from December 4 to the following June 17 when I left.

Three skunks; about December, 1929; Upper Mad River, Trinity County.

Five or 6 skunks, hawks, crows; different dates extending over four years; on own ranch in Mattole, Humboldt County.

Few birds and cottontail rabbits; July; after poisoning squirrels near Mount Poso, Kern County; poisoned barley put out by county and property owners.

Quail, doves, chickens; found dead after poisoning for squirrels with poisoned wheat on own ranch near Maricopa, Kern County. Campaigns are valuable to destroy squirrels but destructive to fur bearing animals and doves.

About 12 skunks; in last two years; Humboldt County. Think poison put out mostly by sheepmen. Poison should be abolished. I have personally lost two fine dogs that absolutely would not bother sheep.

Very few skunks, coons; Sherwood Valley, Mendocino County; government hunters.

Very few skunks, coons; since campaigns started; Sherwood Valley; government hunters. I own and lease about 10,000 acres and they trap and poison on it.

Larks and small birds (not over 6); about three years ago; near Corona, Riverside County; private parties put out poisoned barley. I never saw more than one-half dozen fur-bearers killed by eating poisoned squirrels; wildcats mostly. Am very much in favor of the campaigns for killing squirrels.

Very few jays, skunks; vicinity of Low Gap, Humboldt County; government trappers and myself put out strychnine and poisoned barley.

Buzzards, skunks (not many); at different times in Humboldt County.

Magpies, crows, skunks, foxes, dogs; at Whitmore, Millville and Bella Vista, Shasta County; sheepmen, cattlemen and farmers put out Bernet's sure death capsules and strychnine.

Several each of skunks, blackbirds, sage hens, doves, dogs (own); at various times during the year; in Big Valley and Modoc National Forest, Lassen County; strychnine.

I trap every season in Lassen County (Willow Creek Valley) and in my travels I have seen sheep dogs, porcupine, house cats, and skunks that were unquestionably killed by poison put out for coyotes by these state trappers, but to my knowledge I never saw a dead coyote.

Approximately 100 skunks, 25 hogs, dogs; in last three years; vicinity Round Valley, Mendocino County; U. S. coyote poison. I own 1080 acres of range land and keep all kinds of livestock. I am very much opposed to the present coyote campaign due to the destruction of animals other than predatory animals.

Quite a few quail, doves, meadowlarks; in the spring; around Merced River country killed by poisoned barley.

About 15 mudhens and ducks; November, 1929; near Fresno Sewer Farm and Hunting Preserve.

Sixteen skunks, 43 foxes; January and February, 1930; seven miles north of Oroville, Butte County.

Raven, skunk; own ranch, Mendocino County; state hunter and myself. Poison is sure to get skunks if it is used at all. Campaigns are good.

A dozen or so skunks, 3 or 4 coons; about four or five years ago; Bear River ridge country, Humboldt County; one man hired by state and one hired by rancher; mostly strychnine.

Skunks, foxes, badgers, song birds (about 50); November and December, 1922-23; Red Rock, Siskiyou County; U. S. Biol. Surv.; strychnine.

Quail, doves, foxes, skunks (quite a few); last three or four years; in coast range mountains and foothills, Tehama County; coyote poisoners.

Not a great many doves, foxes, skunks, 1 porcupine; 1924 to 1926; twenty to forty miles above Sonora, Tuolumne County; hoof and mouth disease hunters; strychnine.

Several skunks, foxes; 1928 and 1929; Brown Valley, Yuba County; strychnine.

Seven dogs (own); Springville, Tulare County.

About 20 skunks, about 20 coons; December, 1929; southern Trinity County; coyote poison.

Coons (no count kept), skunks (5 in one small gully); February, 1928; near Kekawaka, Humboldt County; state trappers, tallow bait.

Numbers of small birds, buzzards, rats; about 1916; near Springville, Tulare County; Forest Service and land owners, barley and strychnine.

One quail, 2 doves; about June, 1926; on own farm in Hat Creek Valley, Shasta County; poisoned barley and wheat.

Skunks, coons, wildcats (dozen or so); in last five years; mountains thirty-five miles southeast of Eureka, Humboldt County; ranchers and government trappers, strychnine.

About 4 dozen quail; in fall, 1926; on Mt. Diablo and foothills, Contra Costa County; poisoned barley.

During the fall of 1927, poisoning was first brought to my attention. A sheepman had moved into this vicinity (Delpiedra, Fresno County) and that spring and summer he had the government poisoners out. In September of that year I was deer hunting a couple of miles from Delpiedra and near a spring I counted 17 dead animals. This included fox, coon and skunk and I remember distinctly only two coyotes. A number of other times I have run across dead fox, coon and skunk. Have never kept track of the number but am certain they were poisoned.

Skunk, coon; several at Kneeland, Humboldt County.

Crows, magpies, skunks, coon, badger, dogs (many); many times; many places.

Three birds, 1 dog; June, 1929; North Fork, Mariposa County; poisoned wheat put out by myself.

One skunk, 2 coons; July 5 or 6, 1930; Humboldt County; poison more harmful than good.

Quail (3 at one time, 4 at another time), coon, fox, skunk; 1927 and 1928; Shasta County; poisoned barley.

Report of the work with poison for the Bureau of Biological Survey in Glenn and Tehama counties in 1924 from January 23 to May 12. These are the numbers I found during the campaign: 6 coyotes, 2 wildcats, 11 gray fox, 9 skunks, 4 ring-tailed cats, 2 coons, 2 fishers, 3 dogs. This is a copy of my record of my work done in the campaign. I lived on Log Spring Ridge in the coast mountains of Tehama County since 1919, and the coyote poison campaign has reduced the fur bearers to nothing along the poison line and for one mile or more on each side. Before 1924 I would see a fisher track often but now never see one. Lost 2 dogs in 1930, because poisoner left poison after season was over.

Foxes, wildcats, skunks; mostly in Breckenridge Game Refuge.

Gray squirrels, dogs, coon, skunks; winter of 1928; Sugar Pine Mountain.

Quite a number each of quail and rabbits; past two years (1930); Pacheco Pass, along highway.

Doves, quail (not counted); Shasta and Tehama counties.

Quail, skunks, coon; 1926 or 1927; on South Fork, Cottonwood Creek, Tehama County.

About 20 or 25 skunks, foxes, coons, cats; December 20, 1929; around Clear Lake, Lake County; poison put out to kill squirrels and coyotes.

Several skunks, 1 coyote, 2 foxes, 2 buzzards, 1 dog (own); about 1927; Sonoma County. That winter I was trapping fur bearing animals and there wasn't anything to be taken so the poison must have worked pretty close.

One skunk, 1 coyote, 1 badger, 7 gray foxes; about October 20, 1929; between Taft and Santa Maria.

Four skunks, 1 female and 4 young coons; killed by eating squirrels poisoned by self on own farm, in Tehama County.

Five to 7 skunks; in 1927; on Milpitas Ranch in southern Monterey County; poison put out by land and cattle company.

Two skunks, 3 civet cats; December, 1929, and January, 1930; Little Buck Mountain, near Garberville, Humboldt County.

One pheasant, 12 quail, 10 skunks, 1 fox, 10 hogs, 2 dogs; 1928; on sheep ranges of Butte County; sheepmen and Wool Growers Association put out strychnine.

Twenty-five song birds and jays; May and June, 1930; Descanso, San Diego County; poisoned barley put out by private parties.

Doves, wild pigeons, cottontails; find some every year; near Glennville, Kern County; myself and neighbors poisoning squirrels, mostly with strychnine on barley.

Jays, hawks, skunks (very few); at different dates over a three-year period in Mendocino County; U. S. Biol. Surv.

Skunks; Paicines, San Benito County; U. S. Biol. Surv., strychnine.

Skunks, wildcats, coons (quite a few); spring of 1927; near Weaverville, Redwood Creek, Trinity County; government poisoners.

Birds (several kinds), skunks, coons, dogs; during summer, 1925, and November, 1929; Mendocino coast, Humboldt and Trinity counties; mostly sheepmen putting out strychnine.

About 6 quail; around 1926; Clarksburg, Yolo County; wheat soaked in strychnine to kill field mice in orchard; suggested by Farm Advisor.

Three skunks, 1 gray fox, 1 brown bear; November, 1927; head of Hay Gulch, Trinity County; U. S. Biol. Surv. cooperating with sheepmen; I firmly believe that these poison campaigns do much more harm than good. My belief is based on nine years' observation in northern Trinity County. Here the fur bearers are becoming more scarce each year while the coyotes seem to be as plentiful as when poison operations first began.

Seven quail, 5 skunks; in 1929; Humboldt County; strychnine poisoned wheat put out by farmers.

Four skunks, 2 foxes, 1 opossum, 5 rabbits; during July and August, 1928; on ranch near Bonny Doone, Santa Cruz County; poison put out privately.

About 6 quail, about 3 rabbits, 2 dogs, 1 cat; found dead in last several years; Contra Costa, Santa Clara, and Monterey counties; campaigns very valuable, if properly conducted and care taken to prevent game birds and animals being destroyed.

Kit foxes, skunks, coons, dogs; scattered in different localities.

Five skunks, 1 coon; 1928; in ranges above Ukiah, Mendocino County.

Ducks, pheasants, quail; April, 1929; around Goose Lake and Tule Lake, Modoc County; poison was put out for gophers.

Eighty-three skunks counted, summer poisoned in Capell Valley, Napa County (before 1928). At same time found but two scalped coyotes (both of which were pups) at poison stations.

Skunks, coons, wildcats (a few dozen); at all times of year; Chaparral Mountain and head of Redwood Creek and Mad River country; poison in tallow and deer meat.

Hawks, crows; in Blocksburg section, Humboldt County; coyote poison put out by government hunters. It is the only means to get rid of the coyotes and in so doing thousands of deer are saved.

Seven foxes and gray squirrels; 1928; Franklin Hill, Plumas County; U. S. Biol. Surv.

Skunks, ring-tailed cats (never kept track of number); 1922 or 1923; Sutter Buttes, Sutter County; coyote poison.

Four skunks, 2 foxes, dogs (own); Dog Creek Mountain and Toll House region, Shasta County; government poisoner.

Many quail, doves, foxes, coons, skunks, 3 bears; in a number of localities; strychnine.

Three skunks, 1 coon, 1 fox; October, 1927; on Big Salmon Creek near Albion, Mendocino County.

Few magpies, skunks; 1924 to 1929; Flournoy district, Tehama County; government poison.

Seventeen bears killed in August, 1930, by poison in the Fort Baker country. Poisoner took three old horses and killed them at different places in the bottom of a cañon where he knew that the bears stayed, and filled them up with strychnine. A few days later the seventeen bears were found dead a short distance from the horses and from what I have seen the number of cubs that died from losing their mother will bring the number a lot higher. Three skunks, April, 1930; within two miles near Bridgeville, Humboldt County.

Found about a score of California quail, pheasants, and meadowlarks in March, April and May of last few years in Santa Clara and San Benito counties; poisoned grain around squirrel holes almost everywhere. Could be avoided by eliminating use of poisoned grain as, apparently, rodents leave a lot of it untouched; at least that is my observation. I have seen a number (5) of dead golden eagles (apparently not shot) and this may be the result of eating squirrels sick from poisoned grain. Opinion of campaigns: a waste of money and cause an economic loss; by destroying Nature's balance will in time exterminate many useful species.

Tried poisoning on my own ranch in Calaveras County, and it was effective, but at the same time I lost a very valuable cattle dog, undoubtedly from killing one of these poisoned squirrels, which fact nullified the good done by killing the squirrels. Since that time, I have used gas with just as good results and without any danger to the domestic animals.

Song birds, skunks, badgers, foxes, coons, dogs; several hundred over a period of ten years; Modoc County, 1924-25; Madera County, 1926; Imperial County, 1927; usually U. S. Biol. Surv., sometimes stockmen; various kinds of poisoned baits. Squirrels must be destroyed; badger, fox, skunk and coyotes are the natural enemies of squirrels.

Skunks, over 30 in winter 1926-27, over 20 in winter 1927-28; north of Red Bluff, Tehama County. I think the poison kills more fur bearing animals than coyotes.

I went to kill some mountain lions on Coal Fork, Tehama County, three years ago. We had just pitched camp when our lead hound staggered into camp and was soon dead. Next morning we found we were in a poison station. There was a part of a horse lying on a rock and small pieces of meat all around it. There were 3 foxes, 1 coon, and 5 skunks dead there. Three days later we came back and found the meat had been dragged a short distance down the gulch by a bear which was close by, dead. Have found 3 dead fisher in one day, poisoned.

Doves, quail, cattle dogs; summer of 1928 and 1929; on Breckenridge, Piute and Greenhorn mountains; government trapper.

Very few skunks; Round Valley, Mendocino County; U. S. Biol. Surv.; mostly strychnine.

Eagles, hawks, skunks (2 or 3 of each); during last two or three years; near Willits, Mendocino County; private trappers and U. S. Biol. Surv.; strychnine.

Two skunks; 1928; Upper Mattole, Humboldt County; government coyote poisoner.

Fifteen skunks, 7 foxes, 1 badger, 1 coon; at different times in the summer; near Plymouth, Amador County; poison put out by ranchers, traps by government trapper.

Four quail, 1 dove, 1 fox; about October 20, 1928, at Table Mountain, Fresno County.

Quail, fox, skunk; during last ten years; in Madera County; more squirrels now than there were fifteen years ago before they started poisoning.

Quite a few rabbits; 1928; Monta Vista Ranch, San Diego County; poison put out by rancher, secured through Farm Bureau. In cultivated districts these campaigns are of definite value.

About 12 valley quail, 3 foxes, 1 coon, gray squirrels; winter of 1928-29; in Kimshew district and Durham district, Butte County; meat and grain.

Valley quail, mountain quail, skunk, bear, fox, deer, 1 dog (own); about 75 in all in past six or eight years; in Tehama County.

Quail, cottontail rabbits, skunks, coon, fox; summer of 1929; in different parts of Amador County; U. S. Biol. Surv.; think strychnine.

Two chickens; summer, 1930; Benicia Arsenal; U. S. Government; poisoned grain.

Thirty skunks, 5 wildcats, 18 marten, 7 fox, 2 fisher; September, October, and November, 1928 and 1929; Shot Gun, Mears, Flume and Clear creeks, Shasta County; sheepmen and government trappers.

Fifteen skunks; Salmon Falls, Eldorado County.

Seven skunks, 1 cat, 3 dogs; 1923; Honey Lake Valley, Lassen County; government trapper.

Skunks, badgers, wildcats, dogs; 14 in 1923; Johnstonville, Lassen County, government trapper. Campaigns good if poison is not used.

Seven skunks; May, 1930; Willow Creek, Humboldt County; government trapper.

Very few magpies and crows; Modoc County; poison used by county for poisoning squirrels.

Fourteen skunks (poisoned), 4 hawks (in traps), 6 buzzards (in traps); 1926 to 1928; in Long Valley, Mendocino County; strychnine put out by Farm Bureau.

Five dogs; 1929-30; Santa Cruz and Tehama counties, Sierra Valley; land owners.

Three doves, 1929, along roadway near Ruth, Trinity County; 4 skunks, near poisoned bait two and one-half miles from Hoaglin, Trinity County; 2 dogs, one died three-fourths of a mile from home. The second dog died in front of my house. I found the bait about 300 yards away.

One dog; spring, 1930; on own ranch at Janesville, Lassen County.

Approximately 6 skunks; near Garberville, Humboldt County; federal and state trapper, strychnine and traps. Without the federal and state trapper, raising of sheep would be practically impossible in this section. Five coyotes have been trapped and poisoned in the last six months in this vicinity.

One crow, 1 skunk, 2 dogs; about four or five years ago; in Humboldt County; government man; strychnine in tallow pills.

Seven or 8 skunks; January and February, 1929; in own pasture in Pope Valley, Napa County; strychnine placed by owner of land. I placed the poison in horse meat to kill sheep-killing dogs. Campaigns are very good. We have many more deer since the coyotes and bobcats are being caught.

I worked for the Government as hunter and trapper for two years, and I found if not careful with distributing poison baits, skunks and coons would pick them up.

Scores of mourning doves (accidental), band-tailed pigeons (purposely); 1897 to 1904; vicinity of Los Angeles and Santa Monica; private parties—farmers. My feelings are all antagonistic to the extermination campaigns of recent years.

Four skunks at one place, 2 foxes, brush rabbits; June, 1916; Estrom Valley, Tulare County; barley put out by Forest Service.

Skunks, coons, wildcats (not more than 12); during last four or five years; Mendocino County; state poisoner and sheepmen, coyote poison.

Skunks, coons, civet cats (never kept count); Mendocino and Humboldt counties; government poisoners.

Larks, doves, blackbirds, smaller birds; 1930; in Center and Providence school districts in Big Valley, Lassen County; myself and other farmers, strychnine.

Four chicken hawks, 3 eagles, 1 quail, 15 cottontails and jackrabbits, 32 skunks; December, 1929, and January, 1930; about two miles west of Hildreth, Madera County; caught in traps by myself to protect domestic stock. Squirrel poisoning has been effective and I approve of the campaigns.

Quail; poison put out for squirrels.

Seven skunks; August, 1928; Diamond Mountain, Lassen County; 2 coons; September, 1930; Skeene Creek; sheepmen with no authority put out strychnine.

At least 50 skunks; several years ago at beginning of coyote poisoning in Elk Ridge district of Humboldt County; tallow baits with strychnine.

Seven martens, 7 red foxes, 1 dog; in fall, 1926; Hope Valley and Grass Lake, Alpine County; strychnine. I have sheep and have been running them on the open range for several years and haven't had a single one killed in the flock by coyotes.

Quite a few doves; different times in San Luis Obispo and Madera counties; mostly by farmers; poisoned wheat.

One buzzard, several jack rabbits; on home ranch, Calaveras County; strychnine put out by owner.

Eight or 10 skunks, wildcats; summer, 1929; sheep range in Humboldt County; men hired by sheepmen to poison coyotes.

About 25 skunks, 2 coons; within the last three years; northern Mendocino and Humboldt counties; U. S. Biol. Surv.

Many skunks, coons, hogs, bear, dogs; between 1925 and 1929; Humboldt County; government poisoners, strychnine. Three different government poisoners worked this ranch at different times. During that time two coyotes were found that had been poisoned, but we found many skunks and coons.

Three skunks; November 28; Willow Creek, Humboldt (?) County.

Three skunks, 1 bear, 1 dog; about May, 1928; Bald hills east of Redwood Creek, Humboldt County; sheepmen.

Following is result of squirrel poisoning in country around Lookout, Modoc County. Strychnine was put out by five men on horseback on area approximately four square miles. Each man was given about forty pounds of the treated grain and instructed to scatter small quantities whenever he saw squirrel holes. The men were given saddle horses and a definite area to patrol. In this manner we were able to cover practically every foot of the section. List shows number of dead animals found in 1920 and 1921, respectively: ground squirrels, 500, 375; jack rabbits, 8, 9; Steller jay, 7, 6; robin, 10, 5; crow, 5, 3; turkey vulture, 1, 0.

Ten skunks, 20 quail, 5 hogs, 50 gray squirrels; at different dates; Clover Creek region, Shasta County; poisoned barley put out by squirrel poisoners.

Few crows, blackbirds; Lassen County; squirrel poison.

Possibly as many as 75 quail, 25 doves, 10 skunks, 4 coons; winter of 1928-29; Payne Creek and Plum Creek sections for fur and Sacramento Valley for birds, Tehama County. Farm Bureau poisoning squirrels and state or county after coyotes; grain killed the birds, I opened many. Whenever we must reduce the undesirable species at the expense of our valuable game and fur, the campaign has, in my opinion, lost its value. I am strictly against coyote control by means of poison.

One skunk; about September 15, 1930; on this farm which is fourteen miles north-east of Marysville. Poison put out by county agricultural commissioner in cooperation with a federal agent, trying to kill crows and magpies, which were then destroying almond crop. Had no effect on birds.

About 28 skunks, coons; April 17, 1927; Black Spring, Humboldt County; coyote poison put out by government men.

About 6 each of doves, quail; summer, 1929; near Lewiston, Trinity County; farmers poisoning ground squirrels with poisoned barley.

Six skunks; 1929; in Covelo district, Mendocino County; government coyote poison.

Six skunks, 4 coons, 7 ring-tailed cats, 2 fisher; January 1, 1930; Tom Head Mountain, Tehama County; U. S. Biol. Surv. poisoners.

One skunk, 1 coon; Hayfork, Trinity County.

Quail. About eight or nine years ago I put in one summer killing squirrels and most every day I would come across lots of quail and other birds, dead from eating poisoned barley that the ranchers put out for the squirrels.

Skunks, foxes; about 1924 or 1925; in Fresno County; ranchers and county poisoning coyotes.

Chinese pheasants, marten; 1927-28; Tule Lake and Buck Butte. Campaigns valuable to the sheepmen mostly.

Grouse, quail, bear, 20 skunks, 20 coons, 2 coyotes; 1929-30; Humboldt County. I was patrolman for the United States Forest Service and my beat was in both Del Norte and Humboldt counties. I think these men were careful in placing their baits. All and any poison is dangerous in the mountains and should be done away with.

About the middle of April, 1930, in southern Fresno County, I ran into a patch of ground of about one-quarter acre where poisoned grain had been put out for squirrels. The owner of the land was with me. There were 2 or 3 dead cottontails and a dead jack rabbit lying near; also a number of meadowlarks and Brewer Blackbirds, and another bird, a towhee, if I remember rightly. I asked the farmer if he often found dead birds around the poisoned grain and he said nearly always. As the grain was scattered on the open ground I suggested that he put it only at the entrance to or in the holes and thus probably reduce the mortality of other bird and animal life but he thought it would be less effective on the ground squirrels. Poisoned grain for squirrels was put out on the Barton ranch on 10-mile Creek near the juncture of the South and Middle forks of Kings River, September, 1931. Several dead deer were found shortly afterwards, within half a mile of the place and as their tracks were numerous around the poisoned grain it is assumed that they were killed by it.

Skunks, coons, ring-tailed cats; 1920, 1924, 1927; Mendocino, Trinity, and Humboldt counties; U. S. Biol. Surv.

The facts given in this report bear out but do not materially modify my own general opinions and conclusions as already expressed (see Condor, xxxiv, 1932, p. 111) regarding the problem of the relation of pest control to wild life. Those opinions were formed from studies and experiences of my own and entirely independent from those of other persons, some of which are summarized in the present paper.

Material presented here concerns only a small phase of the whole problem of pest control. Readers are cautioned not to base conclusions on these facts alone.

The summaries of statements are reports of observations, not, generally, expressions of opinion.

Nearly all the reported species are ones that would be conspicuous; other animals killed may have been inconspicuous and thus not seen or not recognized as to species. In either case they would not be mentioned.

Circumstances under which most of the poisoned animals are found are such that there is small likelihood of the observers mistaking the cause for death.

This paper does not deal with the question of responsibility for the present wild life conditions in California.

Museum of Vertebrate Zoology, Berkeley, California, February 12, 1932.