

STATE OF NEVADA

BIENNIAL REPORT

OF THE

STATE DEPARTMENT OF
AGRICULTURE

For the Fiscal Years Ending
June 30, 1959—June 30, 1960



STATE PRINTING OFFICE  CARSON CITY, NEVADA

JACK MCCARTHY, STATE PRINTER

1960

In Memoriam



DR. EDWARD RECORDS

Date of birth
March 15, 1887

Date of death
May 13, 1960



During the closing period of this biennium, the Department of Agriculture suffered a severe loss in the sudden death of Dr. Edward Records, Executive Officer of the Department since February 18, 1918. His contributions to the livestock industry of the state and nation will remain of value in the years which lie ahead. Present efficient activities of the Department are based on a foundation laid by his untiring efforts to eradicate and control infectious disease problems thereby to benefit the livestock industry. His direction and counsel during the many years of service will be reflected in departmental activities in years to come.

LETTER OF TRANSMITTAL

To His Excellency, GRANT SAWYER, Governor of Nevada.

SIR: In accordance with the provisions of NRS 344.140 we herewith submit the thirteenth report of the State Department of Agriculture, same being the twenty-third report of the State Board of Stock Commissioners, for the period of July 1, 1958, to June 30, 1960.

During this period, several changes relating to Department personnel have occurred.

Mr. Richard Magee, Member of the Board since April, 1956, resigned in February of 1959, and Mr. Frank McCleary of Paradise Valley replaced Mr. Magee as Commissioner of Livestock for the unexpired period of appointment. Later Mr. McLeary was reappointed for a four-year period effective April 22, 1960.

Mr. Ralph Hall of Yerington was appointed Apiary Commissioner effective July 1, 1959, for a four-year period.

The 1959 session of the Legislature transferred to the Department the Weights and Measures, and Petroleum and Antifreeze activities formerly in the University Public Service Division, and the apiary laws formerly in the Apiary Commission. These activities were placed under the Division of Plant Industry for administration.

On June 29, 1960, the Department, with the exception of the Animal Disease Laboratory, moved to the new Department of Agriculture Building located at 350 Capitol Hill Avenue in Reno. The new quarters offers welcome relief from the extreme congestion that developed during recent years with the increased activities of the Department and necessary additions of personnel.

W. F. Fisher

Executive Officer.

PERSONNEL

Present Members of the State Board of Stock Commissioners—

	Appointment Expires
FRED H. DRESSLER, President, Livestock.....Gardnerville.....	April 22, 1961
DELL H. ROBISON, Vice President, General Farming.....	Logandale.....April 22, 1963
STANLEY C. ELLISON, Commissioner, Livestock.....	Elko.....April 22, 1961
CHARLES P. FREY, Commissioner, Dairying.....	Fallon.....April 22, 1962
RALPH HALL, Commissioner, Apiary.....	Yerington..... July 1, 1963
FRANK McCLEARY, Commissioner, Livestock.....	Paradise Valley.....April 22, 1964

Other Administrative Personnel—

EDWARD RECORDS ¹ , V.M.D., Secretary and Executive Officer.....	Reno
WILLIAM F. FISHER, D.V.M., Secretary and Executive Officer.....	Reno
ALICE HANSEN, Administrative Assistant.....	Reno
DORIS CERVERI, Senior Clerk-Stenographer.....	Reno
ELEANOR ELLIS, Senior Clerk-Stenographer.....	Reno
LINDA EVANS ² , Senior Clerk-Stenographer.....	Las Vegas
MILDRED GOODMAN, Senior Clerk-Stenographer.....	Reno
WINIFRED MOORE, Senior Clerk Stenographer.....	Reno
HELEN MOSSMAN ² , Senior Clerk Stenographer.....	Reno
BETTY PENNINGTON ² , Senior Clerk Stenographer.....	Las Vegas
COLLEEN ROSANDER, Senior Clerk Stenographer.....	Las Vegas
BONNIE VAN DYKE, Clerk Stenographer.....	Reno

Division of Animal Industry—

WILLIAM F. FISHER, D.V.M., Director.....	Reno
JOHN L. O'HARRA, D.V.M., Assistant Director.....	Reno
CHARLES R. ADAMS, D.V.M., Veterinarian.....	Reno
STANLEY F. ROUTSON, Supervisor, Bureau of Livestock Identification.....	Reno
VAL CAMPBELL ² , Supervising Brand Inspector.....	Reno
EDMUND GARAVENTA, District Brand Inspector.....	Fallon
THOMAS P. KANE, District Brand Inspector.....	Elko
ARSHAL A. LEE, District Brand Inspector.....	Las Vegas
SHIRLEY GEORGE ROBISON, District Brand Inspector.....	Ely
Fee brand inspectors—Approximately 150 cooperating throughout the state.	

Veterinary Inspectors Employed on Per Diem Basis—

JOHN ARDEN.....	Sparks
F. H. BAKER.....	Gardnerville
RICHARD J. BERGIN.....	Elko
ROBERT H. CLARK.....	Las Vegas
A. A. CUTHBERTSON.....	Elko
NICK KLAICH.....	Reno
JOHN S. LEWIS.....	Fallon
ROBT. G. LYNCH.....	Minden
FRANCIS N. NEVILLE.....	Winnemucca
M. H. PHILLIPSON.....	Las Vegas
PAUL S. SILVA.....	Reno
E. H. STODTMEISTER.....	Sparks
G. T. WOODWARD.....	Fallon

Division of Laboratories—

EDWARD RECORDS ¹ , V.M.D., Director.....	Reno
JOHN L. O'HARRA, D.V.M., Acting Director.....	Reno
AGNES HILDEN ² , Serologist-Bacteriologist.....	Reno
ALETA JEANNE BUTTERFIELD, Serologist-Bacteriologist.....	Reno
SHIRLEY AVANSINO, Senior Clerk Stenographer.....	Reno
ERNEST L. SANDRY, Maintenance Man.....	Reno

Division of Plant Industry—

LEE M. BURGE, Director.....	Reno
HARRY E. GALLAWAY, Assistant Director.....	Reno
RAYMOND REBUFFO, Assistant Director.....	Reno
JACK E. HAMPTON, Agricultural District Coordinator.....	Elko
PHILLIP MARTINELLI, Agricultural District Coordinator.....	Reno
DUDLEY F. ZOLLER, Agricultural District Coordinator.....	Las Vegas
HARLAN SPECHT, Chemist III.....	Reno
ROBERT C. BECHTEL, Survey and Systematic Entomologist.....	Reno
STANLEY JOHNS, Chemist II.....	Reno
FLOYD HILBIG, Agricultural Supervisor.....	Reno
JAMES L. TRIMBELL, Chemist I.....	Reno
P. A. FERRETTO, Weights and Measures Inspector.....	Reno
WALTER F. HEADRICK, Weights and Measures Inspector.....	Reno
ROBERT E. JOHNSON, Weights and Measures Inspector.....	Elko
KNUTE PENNINGTON, Weights and Measures Inspector.....	Las Vegas
C. W. STROUD, Weights and Measures Inspector.....	Reno
CAROL M. VARNEY, Seed Analyst.....	Reno
CHARLES WILEY, Per Diem Apiary Inspector.....	Reno
JAMES ANDERSON ⁴ , Senior Agricultural Inspector.....	Reno
ARTHUR M. FLORENCE ³ , Junior Agricultural Inspector.....	Las Vegas
HAROLD N. HANSON, JR. ² , Junior Agricultural Inspector.....	Las Vegas
ROBERT W. NICHOLS ² , Senior Agricultural Inspector.....	Las Vegas
ROBERT PAYNE ⁴ , Junior Agricultural Inspector.....	Reno

Federal-State Agricultural Products Inspectors

Employed on Per Diem Basis—

TIMOTHY LINSKOTT.....	Smith
ERIC SEBBAS.....	Lovelock

U. S. Department of Agriculture, Agricultural Research Service,
Plant Pest Control Project, Collaborator on Insect Pest Control—

JOHN DEL CURTO.....	Elko
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¹Deceased.²Resigned.³Retired.⁴Employed by Washoe County.⁵Employed by Clark County.

REPORT OF THE STATE DEPARTMENT OF AGRICULTURE

TAX LEVIES

At a regular meeting of the board held on February 10, 1959, the special tax for the Stock Inspection Fund was set at seven mills on the dollar for the tax year 1959-1960 in accordance with NRS 561.250. At a regular meeting held February 9, 1960, the tax rate was again set at seven mills on the dollar for the tax year 1960-1961.

ASSESSED VALUATION OF LIVESTOCK UNDER THE JURISDICTION OF THIS BOARD FOR THE FISCAL YEARS 1958-1959 AND 1959-1960 (Figures from the Report of the Nevada Tax Commission)

	1958-1959	1959-1960
Stock cattle.....	\$10,994,940	\$12,310,350
Bulls.....	996,600	1,054,600
Milch cows.....	555,570	621,760
Work horses and mules.....	108,150	93,660
Saddle horses.....	294,100	329,450
Stock horses and mules.....	88,150	96,170
Stallions.....	41,850	39,350
Jacks.....	500	200
Burros.....	2,390	2,470
Hogs (over 8 months).....	16,320	19,870
Pigs (under 8 months).....	19,205	17,795
Poultry.....	18,756	18,142
Totals.....	\$13,136,531	\$14,603,817

At a regular annual meeting of the State Apiary Commission held November 10, 1958, a tax levy of twenty-five cents per stand on all bees in the state was set for the tax year 1959-1960, as provided by NRS 561.250. The 1959 session of the Legislature abolished the activities of the commission and its activities were transferred to the State Department of Agriculture. At a regular meeting of the State Board of Stock Commissioners held on February 9, 1960, the special tax for the Apiary Inspection Fund was set at twenty-five cents per stand on all bees in the state for the tax year 1960-1961 in accordance with NRS 552.090.

**STANDS OF BEES AND ASSESSED VALUATION FOR THE
FISCAL YEARS 1958-1959 AND 1959-1960**

County	Year	Number	Bees, value per stand	Assessed valuation
Churchill.....	1959-1960	2,048	\$2.00	\$4,096
	1958-1959	1,574	2.17	3,408
Clark.....	1959-1960	363	2.00	726
	1958-1959	238	2.00	476
Douglas.....	1959-1960	815	2.00	1,630
	1958-1959	496	2.00	992
Elko.....	1959-1960	817	2.00	1,634
	1958-1959	835	2.00	1,670
Esmeralda.....	1959-1960	---	---	---
	1958-1959	55	2.00	110
Eureka.....	1959-1960	---	---	---
	1958-1959	---	---	---
Humboldt.....	1959-1960	709	2.00	1,418
	1958-1959	474	2.00	1,132
Lander.....	1959-1960	---	---	---
	1958-1959	4	2.00	8
Lincoln.....	1959-1960	---	---	---
	1958-1959	---	---	---
Lyon.....	1959-1960	2,134	2.00	4,268
	1958-1959	1,729	2.00	3,458
Mineral.....	1959-1960	79	2.00	158
	1958-1959	80	2.00	160
Nye.....	1959-1960	187	2.00	374
	1958-1959	97	2.00	194
Ormsby.....	1959-1960	33	2.00	66
	1958-1959	88	2.00	176
Pershing.....	1959-1960	1,083	2.00	2,166
	1958-1959	1,303	2.00	2,606
Storey.....	1959-1960	---	---	---
	1958-1959	---	---	---
Washoe.....	1959-1960	474	2.10	1,000
	1958-1959	427	2.08	890
White Pine.....	1959-1960	342	2.00	684
	1958-1959	205	2.00	410
Totals.....	1959-1960	9,084	\$2.00	\$18,220
	1958-1959	7,605	2.06	15,690

STATEMENT OF EXPENDITURES AND RECEIPTS—July 1, 1958, to June 30, 1960

Funds ¹	Salaries	Travel	Operation	Equipment	Totals	Receipts from sales, fees, tax, etc.	Balances June 30, 1960
Stock Inspection Fund ²	\$133,243.72	\$24,741.94	\$23,865.79	\$10,465.63	\$197,317.08	\$191,505.22	\$28,317.01
Stock Commission Laboratory Fund ³	47,054.01	3,465.88	7,833.83	914.43	55,508.21	2,707.55	2,707.55
Animal Disease Control Fund ⁴	17,788.00	3,229.97	2,141.34	2,193.09	25,586.21	123.69	123.69
State Quarantine Officer Division of Plant Industry ⁵	120,966.29	3,918.51	24,062.74	8,487.79	169,756.23	20,586.94	7,072.28
State Quarantine Officer County Reimbursements ⁶	50,774.58	3,918.51	4,150.29	23,320.33	96,578.55	1,150.29	1,150.29
Weights and Measures Fund ⁷	35,872.10	6,111.82	18,365.28	7,375.84	70,725.04	1,200.84	11,648.09
Noxious Weed Control Fund ⁸	5,984.12	3,841.56	29,901.56	4,383.00	48,611.32	3,742.84	3,742.84
Insect Pest Control Fund ⁹	2,102.29	283.38	5,774.53	4,383.00	13,963.21	20,349.23	21,921.42
Economic Poisons Fund ¹⁰	1,632.00	.....	6,109.07	1,946.69	9,541.43	5,889.80	1,585.03
Fertilizer Control Fund ¹¹.....	.....	.....	1,902.81	564.27	4,099.08	2,904.00	2,904.00
Antifreeze Control Fund ¹².....	.....	.....	.....	.....	3,247.44	4,219.72	4,219.72
Apiary Inspection Fund ¹³	2,207.78	701.59	338.07	4,906.08	4,906.08	15,993.29	15,993.29
Stock Commission Laboratory Capital Improvement ¹⁴.....	.....	.....	.....	.....	.....	.....	.....
Rural Rehabilitation Federal Aid ¹⁵.....	.....	.....	18,000.00	.....	18,000.00	54,365.55	36,365.55

¹As designated by the State Controller.

²A nonreverting fund derived from a special tax, not exceeding seven mills on the dollar, on all livestock excepting sheep and goats. Used for the general support of the Division of Animal Industry and its varied activities.

³An appropriation from the General Fund. Used by the Division of Laboratories for the general support of the diagnostic laboratory.

⁴An appropriation from the General Fund. Used by the Division of Animal Industry for the partial support of livestock disease control work.

⁵An appropriation from the General Fund. Used for the general support of the Division of Plant Industry and its work in quarantine enforcement, grading agricultural products, seed law enforcement, etc.

⁶A special fund set up for clearing county receipts only.

⁷An appropriation from the General Fund. Used by the Division of Plant Industry for the support of its work in weights and measures activities and in the enforcement of petroleum advertising.

⁸An appropriation from the General Fund. Used by the Division of Plant Industry for the control of noxious weeds.

⁹An appropriation from the General Fund. Used by the Division of Plant Industry for the control of major insect pests, such as Mormon crickets and grasshoppers.

¹⁰An appropriation from the General Fund. Used by the Division of Plant Industry for the control of economic poisons sold in Nevada.

¹¹A special fund derived from economic poisons fees. Used by the Division of Plant Industry for the control of fertilizer.

¹²A special fund derived from fertilizer registration and tonnage fees. Used by the Division of Plant Industry for the control of antifreeze sold in Nevada.

¹³A special fund derived from antifreeze registration fees. Used by the Division of Plant Industry for the control of antifreeze sold in Nevada.

¹⁴A nonreverting fund derived from a special tax of twenty-five cents per stand of bees. Used by the Division of Plant Industry for the support of apiary inspection.

¹⁵An appropriation from the General Fund. This is a special appropriation for laboratory facilities in new office building.

¹⁶A special fund derived from the trust funds of the defunct Nevada Rural Rehabilitation Corporation. This fund, plus repayment of present outstanding loans, is used by the Department to finance insured loans to Nevada farmers and ranchers.

RECOMMENDATIONS

1. That the Division of Laboratories be transferred to the Division of Animal Industry by legislative act and in lieu thereof the name, "Animal Disease Laboratories" be substituted and a supervisor of Animal Disease Laboratories be appointed replacing the director, Division of Laboratories.
2. That serious consideration be given to locating the Animal Disease Laboratory at the site of the present Agriculture Building, 350 Capitol Hill Avenue, Reno, Nevada.
3. That brand inspection activities be maintained on a uniform state-wide basis consistent with the wishes of a majority of all people involved. If Lyon and Mineral Counties do not petition the Board for full brand inspection, the law should be amended to require statewide uniformity in every respect with a provision allowing point of origin brand inspection if requested by a majority of stockmen within any county or brand inspection district of Nevada.

CONCLUSION

Continuing herein are the reports of the Division of Animal Industry, Division of Plant Industry and Division of Laboratories, as prepared by the Directors of each division.

We believe this report covers in sufficient detail the work carried on during the biennium.

Thanks is extended to all Department personnel, cooperating agencies, organizations, individuals and the general public who have extended their help toward achieving the past and present standards of the State Department of Agriculture.

Respectfully submitted,

FRED H. DRESSLER,
DELL H. ROBISON,
STANLEY C. ELLISON,
CHARLES P. FREY,
RALPH HALL,
FRANK McCLEARY,
Commissioners.

WILLIAM F. FISHER, *Executive Officer.*

DIVISION OF ANIMAL INDUSTRYW. F. FISHER, *Director*

The Division of Animal Industry administers the laws and regulations pertaining to the following activities:

The control and eradication of infectious, contagious and parasitic diseases of livestock and poultry.

The recording, re-recording and transfer of all livestock brands excepting those of sheep and goats.

The enforcement of the laws and regulations applying to the identification of livestock.

All matters pertaining to the handling of estray livestock.

Hide and carcass inspection.

Livestock killed on railroad rights-of-way.

Licensing and bonding of brokers, dealers, and commission merchants dealing in livestock and animal products.

Licensing and bonding of livestock auction markets.

Cooperation with Federal officials in administering the laws and regulations applying to the Packers and Stockyards Act of 1921.

Participation in cooperative programs with the U. S. Department of Agriculture, Agricultural Research Service, Animal Disease Eradication Division.

Division personnel extend their help and counsel to the livestock industry, the practicing veterinarians and all State and Federal agencies requesting assistance.

Duties assigned the Division have continued to increase during the biennium and several recommendations are respectfully submitted herein for the continuous improvement of Division activities and services to those involved.

ANIMAL DISEASES

Disease control and eradication must be considered essential to the prosperity of Nevada's livestock industry and in the protection of the public health of its citizens from the more than 100 different animal diseases and parasites that may be transmitted to man.

Education of livestock producers in the knowledge of disease control and eradication problems is an effective weapon used for maintaining a relatively disease-free state.

The transporting of livestock, both interstate and intrastate, presents problems of disease control which merit constant vigilance.

Stockmen have been cautioned to maintain proper immunization of their livestock in areas known to be contaminated with disease-producing organisms. Demands for service from the Division in the field of disease control and poisonous plant investigations have continued to increase. An estimate of the population in the United States by 1975 indicates 230 million people must be fed. The livestock industry in Nevada should be prepared to contribute its share toward this goal. By controlling and eradicating animal diseases and parasites through the application of available information and continually improving our knowledge, Nevada can contribute its share and meet the demands of our ever-increasing population.

At present, Nevada exports the majority of its livestock. We must continue to keep livestock free of disease to facilitate the movement within and from our state.

State ranking of cattle populations, as released by the U. S. Department of Agriculture, January 1, 1960, places Nevada in 38th place with an over-all cattle population of 609,000 head.

Following are a few animal diseases which we strive to control or eradicate:

Brucellosis (Bang's Disease)

This disease, primarily of cattle, has been controlled to the extent that not more than 1 percent of the cattle and not more than 5 percent of the herds within the state are known to be infected. This goal was achieved through the cooperation of the U. S. Department of Agriculture, the Nevada State Department of Agriculture, practicing veterinarians, and the livestock industry.

The immunization of replacement breeding calves, the milk ring testing of all dairy cattle, the blood testing of beef cattle, and the slaughter of reactor animals were the basic procedures followed in Brucellosis eradication.

Nevada, on April 15, 1959, achieved the enviable goal of being recognized as a Modified Certified Brucellosis State. This certification allows more freedom for movement of our cattle in interstate commerce as well as economic and health benefits derived from Brucellosis-free herds.

The cooperative program is continuing with an additional plan for testing market cattle at slaughtering establishments with the eventual goal being the complete eradication of Brucellosis from Nevada herds.

The following represents an outline of work connected with Brucellosis control during the biennium:

Total blood samples taken.....	125,931
Total reactors found.....	494
Total herds tested—milk ring tests.....	1,316
Suspect herds found on ring tests.....	10
Calves vaccinated.....	139,667

Following is a list of Brucellosis modified certification expiration dates in the 17 counties of Nevada:

County	Expiration Date
Churchill.....	July 1, 1963
Clark.....	June 27, 1963
Douglas.....	July 9, 1960
Elko.....	April 23, 1962
Esmeralda.....	January 24, 1961
Eureka.....	April 23, 1962
Humboldt.....	April 6, 1962
Lander.....	April 6, 1962
Lincoln.....	July 9, 1960
Lyon.....	February 6, 1961
Mineral.....	June 24, 1962
Nye.....	December 9, 1961
Ormsby.....	June 16, 1962
Pershing.....	February 6, 1961
Storey.....	June 24, 1962
Washoe.....	October 27, 1961
White Pine.....	July 29, 1961

Tuberculosis

During the biennium, the entire State of Nevada remained in a Modified Accredited Tuberculosis free status. This means that less than one-half of one percent of our cattle are known to be infected with this disease.

No confirmed cases of tuberculosis in native Nevada cattle have been found for many years; however, about twenty head of dairy cattle imported into the state have reacted to the tuberculin test. These animals were immediately slaughtered and remaining imports retested until all were considered free of the disease.

Meat inspectors in State and Federally inspected abattoirs remain on the alert for carcasses showing tuberculosis lesions and when found every effort is made to identify the origin of the animal. The remaining cattle in the herd of origin are quarantined and retested until found free of the disease.

The Department has had the full cooperation of the U. S. Department of Agriculture, Animal Disease Eradication Division, in tuberculosis eradication activities. If reactors are found, the owners in most cases are paid an indemnity by the State and Federal Governments following slaughter.

A brief summary of this cooperative program during the biennium is shown:

INTRADERMAL TUBERCULIN TESTS ON CATTLE

Animals tested for tuberculosis.....	14,304
Herds represented.....	886
Reactors found.....	13

Following is a list of tuberculosis reaccreditation expiration dates in the 17 counties of Nevada:

County	Expiration Date
Churchill.....	September 1, 1962
Clark.....	June 1, 1963
Douglas.....	August 1, 1961
Elko.....	September 1, 1962
Esmeralda.....	August 1, 1960
Eureka.....	August 1, 1961
Humboldt.....	August 1, 1960
Lander.....	August 1, 1960
Lincoln.....	August 1, 1961
Lyon.....	August 1, 1962
Mineral.....	July 1, 1962
Nye.....	December 1, 1960
Ormsby.....	August 1, 1961
Pershing.....	September 1, 1962
Storey.....	July 1, 1961
Washoe.....	October 1, 1961
White Pine.....	December 1, 1961

Vesicular Exanthema

This disease of swine became a severe problem throughout the United States in 1952. It was introduced into Nevada by a shipment of feeder swine to the Las Vegas area where one of the state's largest garbage feeding establishments is located. Several hundred hogs were involved. All infected and exposed swine were slaughtered.

Due to the fact that the disease resembles foot and mouth disease, we must remain constantly alert, taking every precaution to prevent its reintroduction into the state.

During the biennium, the Department received a Certificate of Appreciation from the U. S. Department of Agriculture for the part played by state employees in eradicating this disease from the entire United States.

We have continued to enforce Regulation No. 19, which provides for the cooking of all garbage prior to feeding to swine. This procedure is also of value in controlling other diseases of swine and is another of the cooperative programs with the U. S. Department of Agriculture, Animal Disease Eradication Division.

Cattle Scabies

This ecto parasitic disease of cattle has not been found within the state for several years; however, it has been diagnosed in several neighboring states and we are extremely alert to the possibility of its reappearance in Nevada. The disease can be eradicated by using the proper dip bath solution on infested and exposed animals with appropriate control measures.

Hog Cholera

One outbreak of hog cholera occurred in the state on one premise during the biennium. This is in definite contrast to the report of several years ago when the disease appeared on 71 ranches in six different counties. Proper cooking of garbage before being fed to swine, vaccination against the disease and prohibiting the use of live virus for immunization have been beneficial in controlling the disease.

We are looking forward to a program which will eradicate hog cholera from the entire United States.

Anthrax

One questionable outbreak occurred during the biennium. This disease was first diagnosed in Nevada in 1914 when over 400 animals died. Since that time several severe outbreaks have occurred. The districts where the disease has appeared are mapped out and the stockmen in these districts are alerted each year and advised to properly immunize their livestock against the disease.

Rabies

No positive cases of rabies have been diagnosed in Nevada in many years; however, the disease remains a problem in many states.

In 1916, a diagnosis was made on 312 animals in Nevada and over \$80,000 was expended by the State and Federal Governments in bringing the disease under control. We are obligated to remain alert to the reappearance of this disease. Its reintroduction and dissemination in Nevada could well be a calamity, as the disease is a menace to human life and could cause extensive loss of livestock. Vaccines are available should the necessity arise for their use.

Anaplasmosis

This disease remains a costly and troublesome problem within Nevada. A survey made by the University of Nevada veterinary staff, in cooperation with the State and Federal Departments, disclosed the disease was widely spread in our northern, eastern and western

counties with little or none in the southern part of our state. The survey also indicated that some of our deer population were infected and were carriers of the disease.

No vaccine for immunization against the disease has been developed; however, much research work is being done toward this goal. Thorough cleaning and disinfecting of all instruments used in dehorning, castrating, marking and vaccinating are recommended procedures for helping to control the disease. Treatment is of some value in selected cases.

Leptospirosis

Leptospirosis, a disease characterized by symptoms of abortions and jaundice in cattle, has continued to increase during the biennium. The disease has appeared in 37 different herds within the state. A blood test is available for detection of this disease. Control is possible through vaccination and proper husbandry.

Molybdenum Poisoning in Cattle

Continued investigation into this problem has disclosed additional areas where molybdenum concentration in the forage constitutes a definite toxic factor in feeding of cattle. Research work in the development of injectable copper glycinate conducted during the last biennium has well withstood the challenge and has proved to be of practical value in these areas. Thousands of doses of this copper preparation are now being used annually allowing cattle to graze these toxic areas and utilize the feed grown there with little or no harmful effects to the animal. This type of prophylactic treatment has enabled the industry to produce beef economically in the molybdenum areas that previously were of questionable value for grazing cattle.

Rhinotracheitis

Rhinotracheitis (Red Nose) appeared in two feed lots during the past year. A suitable vaccine is available for control.

General Diseases

Many other diseases of livestock were brought to the attention of the Department during the biennium. Some are common; others are relatively new in the state. We mention only a few:

White Muscle Disease, Blackleg, Swine Erysipelas, Malignant Catarrhal Fever, Actinobacillosis, Actinomycosis, Bacillary Hemoglobinuria (Red Water), Epithelioma of the Eye (Cancer Eye), Encephalitis, Foot Rot, Pulmonary Emphysema (Asthma), Enzootic Abortion, Mucosal Disease, Parasitic diseases, plant poisonings, and miscellaneous diseases of poultry and small animals.

MISCELLANEOUS FIELD INVESTIGATIONS AND FINDINGS

Anaplasmosis.....	1
Bacillary hemoglobinuria.....	1
Blackleg.....	2
Bloat.....	2
Coccidiosis.....	1
Equine Encephalomyelitis.....	1
Forage poisoning.....	1
Hardware disease.....	1
Hemorrhagic septicemia.....	1
Impaction causing rupture of cecum.....	1
Infectious bovine rhinotracheitis.....	2
Malignant catarrhal fever.....	2
Mucosal disease.....	1
Necrotic stomatitis.....	1
Oxalate poisoning.....	1
Pneumonia.....	1
Post-parturient toxemia or septicemia with secondary pneumonia.....	1
Purpura hemorrhagica.....	1
Rhinitis.....	1
Swine erysipelas.....	1
Tetanus.....	1
Tetanus and post-operative septicemia.....	1
Ulcerative dermatosis.....	1
Undiagnosed.....	1
Water hemlock poisoning.....	1
Total.....	29
Autopsies	
Cattle.....	14
Total.....	14

INTERSTATE MOVEMENTS OF LIVESTOCK, DOGS, AND CATS

July 1, 1958 to June 30, 1960

Shipments out of Nevada, including only movements covered by official health certificates and not including animals feeding in transit:

Cattle.....	74,649
Hogs.....	4,169
Horses and mules.....	115
Dogs and cats.....	397

Quarantine Regulations

Regulations governing the quarantine and movement of livestock have remained static during the biennium. Those pertaining thereto remain in accord with current Federal regulations.

Regulation No. 39, governing the entry of cattle, horses, mules, asses, swine, dogs, poultry, domesticated birds and certain biologic products into Nevada, remained unchanged during the biennium.

An executive ruling provided for certain restrictions and quarantines on dairy animals entering the state from designated bovine tuberculosis problem states.

Thought is being given to a revision of Regulation 39, which would add certain restrictions relating to rabies in dogs and other animals and with other minor changes.

Regulation No. 43, governing the maintenance of Nevada as a Modified Certified Brucellosis State was promulgated during the biennium and is in accord with the cooperative Federal agency.

**Regulation No. 43 Governing the Maintenance of Nevada
as a Modified Certified Brucellosis State**

The State Board of Stock Commissioners, in order to maintain the State of Nevada as a Modified Certified Brucellosis State, hereby outlines the procedures which shall be followed. These procedures equal or exceed the current uniform methods and rules for bovine brucellosis eradication as outlined in the plan for recertification of counties or areas, as accepted by the U. S. Department of Agriculture, Agricultural Research Service, Animal Disease Eradication Division.

1. All commercial dairy herds are to be screened at least semi-annually by the milk ring test. All herds showing a suspicious reaction to the milk ring test shall pass required blood tests. All eligible dairy animals in herds not milk ring tested must be tested by the official blood test once every three years.
2. At least 80 percent of all breeding calves retained in each herd are to be officially brucellosis vaccinated, providing this procedure is feasible in the area. This service shall be available to the owner without expense so long as funds for this purpose are available; the owner to provide for handling of the cattle.
3. Purebred beef herds:

Option No. 1, cull and dry test—

During the recertification period at least 15 percent of the eligible breeding cattle in all purebred beef herds be blood tested. Samples to be taken from cull and slaughter animals at ranches or slaughtering establishments. If less than 15 percent of the eligible purebred beef type breeding cattle have been so tested, sufficient additional eligible breeding animals must be tested within the herds to bring the total to at least 20 percent of the eligible cattle over three years of age in all purebred beef herds.

Option No. 2—

If no eligible breeding cattle have been tested as outlined in Option No. 1, then a minimum of 20 percent of the eligible cattle must be tested in each herd.

4. Range and semi-range beef type cattle:

All eligible dry and cull beef type breeding cattle may be back tagged at the ranch for testing at slaughter if slaughtered within fourteen days of movement from the ranch. Back tagging may be on optional basis in lieu of or in conjunction with required blood testing by other means. Identification of eligible cattle by brand inspection certificates or other means may be substituted for back tagging when animals are slaughtered within the State of Nevada at approved slaughtering establishments providing the owner, slaughterer, or party delivering the cattle shall inform personnel responsible for obtaining blood samples as to identity of cattle before slaughter.

5. Back tag for herd identification at all livestock auction yards all breeding cattle over three years of age regardless of destination.

If, during the recertification period, at least 15 percent of dry cull beef type breeding cattle have not been blood tested on an area basis, then sufficient additional eligible beef type cattle shall be tested on a basis as specified in current uniform methods and rules.

Back tags are to be placed approximately three inches behind the shoulder and three inches below the backbone.

Reactor herds shall be handled in keeping with recommendations of current uniform methods and rules.

Back tags and adhesive to be furnished without charge.

Tags to be placed on the animal by owner at the ranch level and at sales yards by approved brand inspectors.

This regulation is issued under the authority vested in the State Board of Stock Commissioners by NRS 561.400. Any person violating or disregarding any provision of this regulation will be guilty of a misdemeanor as provided in NRS 561.650. This regulation shall be effective May 1, 1960.

STATE BOARD OF STOCK COMMISSIONERS

By EDWARD RECORDS, *Executive Officer*.

Livestock Brand Recording

The Division is charged with the responsibility of the recording, re-recording and transfer of all livestock brands with the exception of those of sheep and goats.

A new brand book is compiled every five years and supplements are added every six months.

The charge for recording a new brand is \$10.00; re-recording, \$5.00, and transfer fee, \$5.00. A new official brand book will be issued in 1961.

Livestock brands are recognized as personal property of the individual or group making the registration.

Livestock branded with a recorded brand are recognized, prima facie, as the property of the owner of the brand, unless a legal instrument conveying title has been issued.

The recording of each brand entails considerable research and it is time consuming to eliminate conflicting and duplicate brands.

Total brands of legal record, June 30, 1958.....	3,974
New brands recorded, July 1, 1958, to June 30, 1960.....	296
Brands abandoned, July 1, 1958, to June 30, 1960.....	5
Total brands of legal record, June 30, 1960.....	4,265
Brand transfers recorded, July 1, 1958 to June 30, 1960.....	233

NEVADA BRANDS

In the State of Nevada there are 134 active brands that have been in continuous use for 75 years or longer.

C is the oldest brand of legal record in the state. It was originally owned by Mark Stebbins of Genoa. The established beginning of use of this iron was in 1854. In 1857, John S. Child of Genoa purchased



Oldest recorded brand in State.

the iron and the Carson Valley Ranch from Mark Stebbins. Just when the brand was lost cannot be pin-pointed, but it was some time prior to 1921.

The six oldest still active brands in the state are as follows:



First recorded by Jas. Dow and Samuel M. Gray (Stillwater) in 1868. Now owned by Paul J. Williams (Fallon).



First recorded by W. B. Caldwell (Belmont) in 1869. Now owned by Loren O'Donnell (East Ely).



First recorded by John Garat (Whiterock) in 1872. Now owned by Petan Company (Tuscarora).



First recorded by Peter Burkett (Elko) in 1872. Now owned by Petan Company (Tuscarora).



First recorded by S. G. Hillyer & Sons (Winnemucca) in 1872. Now owned by Chas. K. Hillyer (Winnemucca).



First recorded by L. Parres & Co. (Elko) in 1872. Now owned by H. Moffat Company (Reno).

District Brand Inspections

The state is divided into five areas with a district brand inspector in charge of all activities relating to brand inspections and allied duties connected with this program.

A supervisor of livestock identification maintains his office in the Department of Agriculture building in Reno and is charged with the responsibility of coordinating the activities in the entire state. He also serves as a district brand inspector in the Reno area.

Scattered throughout the state is an average of 150 fee brand inspectors who collect ten cents per head for each brand inspection which they retain without further remuneration from the Department.

Brand inspection is statewide; however, stockmen of Lyon and Mineral counties elected by petition to eliminate brand inspections on consignment for slaughter or transfer of ownership within their counties. This presents a problem relating to uniform brand inspection on a statewide basis.

The Nevada State Cattle Association and the Nevada State Farm Bureau have consistently endorsed improved brand inspection activities.

Petitions are now being circulated in Lyon and Mineral counties for the purpose of returning the two counties to a uniform statewide brand inspection setup.

During the biennium the Division has entered into cooperative agreements on livestock brand and theft work with several neighboring

states. This joint understanding should be very effective and of great value to our livestock industry.

Two southern Nevada counties have gone beyond the regular requirements for brand inspection and with the approval of the Department are now operating as point of origin brand inspection counties.



Brand inspection under ideal conditions.

BRAND INSPECTIONS—July 1, 1958, to June 30, 1960

County	Cattle	Horses and Mules	Hogs
Churchill.....	119,409	1,720	---
Clark.....	8,828	949	---
Douglas.....	6,405	34	---
Elko.....	172,163	4,396	2
Esmeralda and Southern Nye.....	508	28	---
Eureka.....	13,636	255	---
Humboldt.....	74,230	1,211	---
Lander.....	19,913	406	---
Lincoln.....	15,221	556	---
Lyon and Mineral.....	17,525	1,198	---
Northern Nye.....	10,093	729	3
Ormsby.....	10,093	78	---
Pershing.....	70,185	424	---
Washoe and Storey.....	43,889	1,156	---
White Pine.....	24,075	368	---
Total.....	606,173	13,508	5
Grand total.....			619,686

Estray Livestock

During the biennium, laws governing the handling of estrays have been approved which should allow for better enforcement of this act.

The return of estray livestock to rightful owners has paid a dividend to the industry.

Following is some information relating to estray records:

July 1, 1958, to June 30, 1960

Cattle—		
Taken up as estrays.....	135	
Returned to owners.....	122	
Sold.....	13	
Horses—		
Taken up as estrays.....	19	
Returned to owners.....	17	
Sold.....	2	

Estimated value of animals returned to their owners is \$25,190.

Hide and Carcass Inspection

This act was amended during the biennium to allow for a streamlined program. The new legislation provides for the assistance of other law enforcement officials of each county when the need arises.

The slaughter and sale of stolen calves and cattle remains a problem worthy of attention. The Department, through its district brand inspectors and law enforcement officials, is constantly reminded of a situation which must still be faced.

Livestock Killed on Railroad Rights-of-Way

During the biennium a working agreement between the railroads and the Department has been approved for better identification of livestock killed on rights-of-way.

When possible, a district brand inspector is contacted for the purpose of identifying the dead animal and making an estimate of the breed, age, and weight. Pending is an opinion from the Attorney General in regard to animals killed on railroad rights-of-way and not identified. It is believed these animals should be classed as estray livestock.

The following information is of interest in this connection:

STOCK KILLED ON RAILROAD RIGHTS-OF-WAY

	Cattle	Horses and mules	Sheep	Total
Nevada Northern—				
Brands or owners reported.....	1	0	0	1
Brands or owners not reported.....	0	0	0	0
Southern Pacific—				
Brands or owners reported	68	4	0	72
Brands or owners not reported.....	83	2	3	88
Union Pacific—				
Brands or owners reported	0	0	0	0
Brands or owners not reported.....	5	0	0	5
Western Pacific—				
Brands or owners reported	106	2	0	108
Brands or owners not reported.....	65	1	24	90
Totals.....	328	9	27	364

Livestock Auction Markets

Four licensed livestock auction markets operated during the biennium. All are posted under the Packers and Stockyards Act of 1921. State legislation relating to bonding requirements under the Packers and Stockyards Act allows substitution in certain circumstances in lieu of state bonds as specified by statute.

In regard to health requirements, the auction yards operate under Federal/State approval allowing entry of livestock from any point of origin in the United States into the yards, at which point the animals are classified for feeding, breeding or slaughter purposes, and

all required tests or vaccinations for diseases are made and certificates issued for interstate or intrastate movements. State and Federal regulations govern the operation of an approved salesyard with a veterinarian approved by the Nevada State Department of Agriculture in charge of animal disease inspection activities.



Penning facilities at a Nevada auction yard.

Brand inspectors are stationed at all yards for the purpose of determining ownership of all animals sold through the yards.

Federal-State Approved Slaughtering Establishments

All Federal slaughtering establishments and several state slaughtering establishments have been Federal/State approved for the slaughter of animals reacting to the tests for brucellosis, tuberculosis, and paratuberculosis. Cooperative Federal regulations specify this procedure must be followed when operating under a joint program of disease eradication.

Designated Approved Quarantined Feed Lots

Under regulations promulgated by the Department in cooperation with the Animal Disease Eradication Division of the U. S. Department of Agriculture, certain feed lots may receive approval for the entry of cattle direct into the yards from any point in the United States.

It is assumed the animals entering these yards are destined for slaughter at the end of a feeding period; however, by permission from the Department, animals can be removed for other purposes providing all required tests, vaccinations and certificates are at owners' expense.

Licensing and Bonding of Brokers, Dealers and Commission Merchants in Agricultural Products

This state law as amended during the 1960 Legislative session requires buyers of livestock to be either licensed and bonded under the Packers and Stockyards Act, or under provisions of state statute providing for same; and under certain circumstances they must be bonded, licensed, or registered under both. Cash buyers are required to register with the Department, also. Whether the operator buys in either interstate or intrastate commerce or in both determines the procedure in connection with licensing, bonding, or registration.

District Brand and Agricultural inspectors cooperating with Packers and Stockyards' officials, hope to carry out the intent of the law by enforcing the statutes and regulations applying thereto.

The greatest difficulty encountered thus far in enforcement applies to the owners of livestock who will sell their animals without first confirming the buyer is properly licensed and bonded.

MEETINGS AND CONFERENCES ATTENDED

- July 14-15, 1958—National Livestock Brand Conference, Salt Lake City, Utah.
- August 15-21, 1958—American Veterinary Medical Association, Philadelphia, Pennsylvania.
- November 4-7, 1958—U. S. Livestock Sanitary Association, Miami Beach, Florida.
- January 20-23, 1959—Intermountain Veterinary Medical Association and Western Regional Conference of Veterinary Laboratory Diagnosticians, Salt Lake City, Utah.
- July 13-14, 1959—National Livestock Brand Conference, Bismarck, North Dakota.
- August 23-27, 1959—American Veterinary Medical Association, Kansas City, Missouri.
- August 15-20, 1959—Symposium on Latest Methods Used in Diagnosing Tuberculosis in Livestock and Poultry, Manhattan, Kansas.
- September 10, 1959—Western States Association of State Departments of Agriculture, Salt Lake City, Utah.
- December 15-18, 1959—U. S. Livestock Sanitary Association, San Francisco, California.
- January 20-23, 1960—Intermountain Veterinary Medical Association, Salt Lake City, Utah.
- January 27, 1960—National Livestock Brand Conference, Dallas, Texas.
- February 28, 1960—Joint State Meeting of State Brand Inspectors, Spokane, Washington.

In addition to the above out-of-state meetings and conferences, Animal Industry personnel attended Nevada meetings of the following groups: Nevada State Veterinary Association, Nevada State Cattle Association, Nevada State Farm Bureau, County Farm Bureaus, and other cattle associations.

ACKNOWLEDGMENTS

The Division sincerely expresses its indebtedness and appreciation to former Governor Charles H. Russell and our present Governor Grant Sawyer for their never failing interest and support of Department activities; to Members of our State Legislature; the State Board of Stock Commissioners; the U. S. Department of Agriculture, Animal Disease Eradication Division, all of its employees and especially Dr. E. E. Maas, Veterinarian in Charge of Cooperative Animal Disease Eradication Programs; the University of Nevada Agricultural Extension Department; the Nevada State Cattle Association; the Nevada State Farm Bureau; Department employees; regulatory and practicing veterinarians; law enforcement and public health officials; County Extension agents; and all others individually and collectively. All have rendered splendid cooperation, assistance and advice pertaining to the Department's numerous activities.

DIVISION OF LABORATORIES

JOHN L. O'HARRA, D.V.M.

Acting Director

The workload at the laboratory during this biennium has maintained its volume with a moderate shift in the type of work in demand.

Brucellosis testing was most active in the Elko branch laboratory. This laboratory conducted 58,739 brucellosis agglutination tests.

The Winnemucca laboratory conducted 22,351 similar tests, with the Reno laboratory dropping to 16,457 brucellosis agglutination tests.

The late entry into the accelerated brucellosis program of the northeastern portion of the state accounts for the bulk of the work in that area.

The modified certified brucellosis status of Nevada, which was reached during this biennium, definitely tapered off the brucellosis testing program during the last few months.

The branch laboratory at Elko is operating on a modest basis. The Winnemucca laboratory was closed due to lack of need for same.

The balance of the total, 125,931, brucellosis tests listed under the report of the Division of Animal Industry was conducted in the field by veterinarians and technicians who were qualified at this laboratory.

Increased interest in the anaplasmosis complement-fixation test has resulted in approximately a three-fold increase in this work. These tests were conducted by Dr. Kenneth L. Kuttler of the Department of Veterinary Science, Agricultural Experiment Station, University of Nevada, cooperating with this Department, the Nevada State Fish and Game Department and the Agricultural Research Service. The anaplasmosis work was based on a university research project with a concurrent survey of wildlife in cooperation with the Fish and Game Department and routine diagnostic procedures with the State Department of Agriculture.

Although the total brucellosis testing for the biennium was somewhat lower than the previous biennial report, the laboratory procedures, other than brucellosis testing, increased approximately $2\frac{1}{2}$ times in volume.

LABORATORY EXAMINATIONS

Anaplasmosis complement-fixation tests.....	1,287
Anaplasmosis microscopic examinations.....	44
Anthrax examinations, all negative.....	23
Bacillary hemoglobinuria.....	3
Blackleg.....	3
Blood examinations.....	174
Brucellosis agglutination tests.....	97,547
Brucellosis ring tests.....	1,289
Enteritis.....	26
Enterotoxemia.....	4
External parasite examinations.....	44
Internal parasite examinations.....	775
Leptospirosis agglutination tests.....	3,341
Leptospirosis examinations, microscopic.....	4
Malignant catarrhal fever.....	2
Malignant edema.....	2
Mastitis milk examinations.....	185
Microbial sensitivity tests.....	98
Miscellaneous examinations.....	448
Neoplasms.....	7
Pneumonia.....	5
Rabies examinations, all negative.....	51
Swine erysipelas.....	7
Transaminase determinations.....	9
Urine examinations.....	23
Total.....	105,401
Autopsies.....	259

At the close of this biennium, we feel that it is time to consider a survey of the physical facilities and the working conditions under which this laboratory is operating. The laboratory is feeling the demands created by the increased population of the state, the increased work load from a public health standpoint and the changing needs of the livestock industry. We have entered into an era where the diagnostic laboratory serves the general herd health of our livestock on a preventive medicine type of diagnostic service rather than the individual animal diagnoses of the past.

Our state has a greater number of veterinarians serving the population in the protection of the livestock industry and in the protection of the public health of our citizens from the zoonoses. This profession has found it necessary to impose on the laboratories of our neighboring states for adequate services.

The rapid changes in transportation methods involve routine movements of great numbers of livestock from areas within and without our state. Rapidly moving livestock transmit and spread disease at an ever-increasing rate. Many extensive movements are made in a manner more rapid than the incubation period of the disease itself, thereby unknowingly submitting the susceptible animals of our state to all of the conditions of our neighboring states and even of foreign countries. The facilities of the laboratory must be kept adequate to cope with these problems in a proper manner.

DIVISION OF PLANT INDUSTRY

LEE M. BURGE, *Director*

Food and Fiber Supplies of America

The nation's food and fiber supplies have become a major concern to many authorities in the field of nutrition and production. It is reliably estimated that by the year 2000 the United States of America will need food and clothing for nearly 370 million citizens.

In order for producers, processors, and marketing organizations to be in a strong position to meet this need, they must be concerned not so much with today's surplus supplies as with future production potentials. Present day production and the conservation of today's abundant fertility must be evaluated in order to develop a long range program of economical production on the same total land unit. For example, today only 25 million more acres are being utilized than in 1910, yet twice as much meat and other foods are produced.

Through intelligent use of mechanics, fertilizers, pesticides and improved crop varieties, the American people in the next 40 to 50 years will be supplied with 50 percent more food and fiber than is presently required.

The Department of Agriculture has a basic responsibility in the long range planning for the production and orderly marketing of future farm production needs.

Nevada producers are similar to producers in other areas in respect to the cost price squeeze. A sound study of present and long range marketing procedures is necessary to insure an adequate food supply for future needs.

ADMINISTRATION

The Division of Plant Industry has, during the past two years, been assigned several new responsibilities.

Effective July 1, 1959, by legislative action, responsibility for the Bureau of Weights and Measures and its many activities, was transferred from the University of Nevada to the Department of Agriculture and made a part of the Division of Plant Industry.

Housing was an urgent problem when the Bureau of Weights and Measures became a part of the Division. The lease on the old Weights and Measures building was cancelled effective July 1, 1959, the same date the Department was to assume responsibility for this activity. An arrangement was made, however, between the new lessee, the owner, and the Department providing for a one-year extension on our use of the Fifth and Sierra Streets building. With subsequent combined efforts, and the cooperation of the Department of Buildings and Grounds, Director of the Budget, State Planning Board and the Attorney General's office, construction of a new home on a long lease for the entire Department of Agriculture was effected. On June 29, 1960, the Department moved to its new headquarters at 350 Capitol Hill Avenue, Reno.

Organization

The over-all structure, previously planned for the Division, has been completed with district offices now established at Elko, Las Vegas, and Reno. A field headquarters under the direction of the Agricultural District Coordinator at Elko has been established at Winnemucca to more adequately service the seed producing and specialty crop areas in Humboldt, Lander and Pershing counties.

Division needs for new personnel are in the fields of plant disease survey and weights and measures inspection. It had previously been recommended that a plant pathologist and laboratory were essential to the proper functioning of the Division. As the plant disease problem

becomes more complex, adequate information upon which sound quarantine procedures and control practices are based, is a much needed tool for the protection of our crop production.

The rapid increase in economic and population expansion has resulted in a ballooning growth in numbers of measuring and weighing devices. This is particularly true with gasoline pump installations and retail store scales.

Prepackaged food items now make up 90 percent of all sales in the larger retail markets. Preliminary spot checks have indicated a need to expand inspection activities for net weight in this field.

LEGISLATION

Legislation in 1959 affecting Division activities included amendments to the noxious seed list, and egg labeling requirements, as well as an amendment broadening the plant pest section. Other new legislation provided for the inspection and licensing of all nurseries and for the incorporation of the apiary inspection laws, in addition to laws pertaining to the Weights and Measures enterprise.

Legislative amendments during the 1960 session included the following:

- a. Regulation of repairs to and sealing of scales.
- b. Providing for a disease history of bees entering the state for pollination purposes.
- c. Clarifying exemptions under the buyers and dealers act, pertaining to agricultural produce and livestock.
- d. Providing for bonding and licensing of farm labor contractors.
- e. Amended NRS 548.120 providing that the Department have an ex officio member on the State Soil Conservation Committee.

Proposed Legislation

The Legislative Commission, by Senate resolution, was directed during the 1959 session to develop a study and report as soon as feasible on strengthening the agricultural laws and/or departmental organization.

Many hours have been spent by Division personnel in consultation with the Legislative Counsel in studying the need for clarifying certain sections of laws and generally bringing the departmental structure up to date.

There are no specific recommendations for legislation at this writing other than those already discussed with the Legislative Counsel.

QUARANTINES

Protection of the agricultural interests requires an adequate but sensible quarantine procedure based on biological values.

The Division is well prepared to proceed against any foreseeable development of insect or weed pests.

A constant survey and detection procedure to guard against the introduction of all pests, including plant diseases detrimental to agriculture and the general welfare, is the goal of the Division.

Quarantines in Effect

There have been no new quarantines promulgated under authority of the Department or by proclamation of the Governor.

The following quarantines remain in effect as of this date:

European corn borer, tomato russet mite, cotton boll weevil, Colorado Potato beetle, and Khapra beetle.

WEEDS

The Walker River Weed Control District, under authority of the noxious weed statute, with approval of the Department, has developed a regulation providing for inspection of all hay and whole feeds entering the district for feeding purposes. Point of origin or terminal inspection is required to determine freedom from designated noxious weed seed.

Any whole feed material found contaminated with seeds of any of the designated weeds is subject to disposal by means approved by the state quarantine officer.

APIARY INSPECTION SERVICE

By legislative action in 1959, the Nevada Apiary Commission, which has been the regulating authority since 1921, was dissolved.

The Apiary Commission believed that the beekeeping industry could be best served by uniting apiary inspection with the Nevada State Department of Agriculture. Effective July 1, 1959, this activity was transferred to the Department and an apiary representative appointed to the State Board of Stock Commissioners. Administration of the apiary laws was delegated to the Division of Plant Industry, which permits personnel of the Department to work as field bee inspectors throughout the state.

Field inspection of bees for diseases during the biennium has been intensified on apiaries having a disease history and on small apiaries owned by hobbyists. Inspections were made of 7,710 colonies of bees during the biennium. It was found that American foulbrood disease has decreased to less than 1 percent, which is very gratifying to both inspector and beekeeper. Excellent cooperation between beekeeper and inspector aided in preventing any serious spread of this dreaded disease. Inspectors found 68 colonies diseased with American foulbrood, and treated all of them by burning in accordance with the requirements of the state law, as drugs for disease treatment are not recommended.

The apiary law was revised by the 1959 Legislature and a new section added permitting the entry of out-of-state bees for seed pollination service. Nevada has not allowed bees on comb to enter the state since 1921 in order to prevent the further introduction of disease.

The increase in alfalfa and clover seed production, however, required large numbers of bee colonies.

In 1958, 900 hives were located in seed producing fields for pollination, and in 1959 this number increased to 1,500. With new plantings in the fall of 1959 and the spring of 1960, a potential need of nearly 4,000 hives was estimated for pollination services during the 1960 crop year.

Under the new amendment, seed growers, who cannot secure the required number of bees for pollination from Nevada beekeepers, may request bees from other states. Procedures have been established so that out-of-state beekeepers may apply for a permit of entry to move bees into Nevada for pollination.



Inspection for bee diseases. (Note strong colony strength used for pollination of seed crops.)

The following requirements must be met before hives of bees are permitted entrance into Nevada:

1. A valid contract for pollination between beekeeper and seed grower must be filed with the Department.
2. Affidavit from the owner that no drugs have been fed for the treatment of American foulbrood disease within six months prior to application.
3. American foulbrood disease must not have exceeded 1 percent in the applicant's bees over a period of two years preceding the application.

4. All bees intended for permit shall be inspected within 30 days of shipment and found not to exceed 1 percent American foulbrood disease.
5. Permits are issued to qualifying beekeepers for bees to enter Nevada for a period not to exceed six months.

Entry permits were granted to six California beekeepers in June 1960, covering 4,000 hives of bees for pollination service. Eleven seed growers in Humboldt County and two in Nye County used honey bees at the rate of two colonies per acre.

The Division makes such inspections as are deemed necessary to determine that nonresident bees meet the strength and disease requirements of the law. At the expiration of the six months' permit, the Department certifies the bees back to point of origin.

Pollination of legume seed crops is a comparatively new phase of beekeeping to Nevada beekeepers, but we are assured they will meet the challenge and expand their operations to furnish bees for hire in seed fields. Through excellent cooperation between pest control operators, growers and beekeepers, insecticide kill in seed fields is kept to a minimum and bees will remain strong for pollination and honey production.

Honey crops in Nevada have been very poor during the biennium. Drought conditions during 1959 prevailed throughout the state and honey production from alfalfa and white sweet clover averaged 30 pounds per colony. With an extremely low supply of water for irrigated crops, prospects for a good honey crop in 1960 appear poor.

SUMMARY OF INSPECTIONS MADE FOR THE PERIOD

July 1, 1958 to June 30, 1960

County	No. of colonies inspected	No. apiaries found diseased with AFB	No. colonies found diseased with AFB	No. AFB colonies burned	No. of EFB colonies found
Churchill.....	575	5	22	22	---
Clark	948	5	7	7	---
Douglas.....	792	4	7	7	---
Elko	247	1	1	1	3
Esmeralda.....	---	---	---	---	---
Humboldt.....	*2,403	1	2	2	8
Lander.....	---	---	---	---	---
Lyon.....	1,139	4	9	9	---
Mineral.....	---	---	---	---	---
Nye.....	723	2	5	5	---
Ormsby.....	---	---	---	---	---
Pershing.....	75	---	---	---	---
Storey.....	---	---	---	---	---
Washoe.....	488	2	3	3	---
White Pine.....	320	3	12	12	---
Totals.....	7,710	27	68	68	11

*Migratory bees on six months' pollination permit.

Registration of all bees and their location is required on or before May 1 of each year, except for migratory bees from other states. They must be registered upon arrival in Nevada.

Section 552.155 states: "Every person who is the owner or in possession of an apiary located within the state shall, on or before May 1 of each year, register with the Department the number of colonies therein and the location thereof."

Number of beekeepers—	
May 1, 1959.....	110
May 1, 1960.....	148
Registered apiaries—	
May 1, 1959.....	313
May 1, 1960.....	320

REGISTERED BEE COLONIES BY COUNTY

County	RESIDENT		NONRESIDENT (Pollination Service)	
	1959	1960	1959	1960
Churchill.....	2,210	2,062	-----	-----
Clark.....	411	497	-----	-----
Douglas.....	803	575	-----	-----
Elko.....	829	306	-----	-----
Esmeralda.....	No beekeepers	-----	-----	-----
Humboldt.....	12	5	1,500	3,855
Lander.....	No beekeepers	-----	-----	-----
Lyon.....	2,184	2,018	-----	-----
Mineral.....	79	-----	-----	-----
Nye.....	373	393	50	260
Ormsby.....	43	92	-----	-----
Pershing.....	407	305	-----	-----
Storey.....	No beekeepers	-----	-----	-----
Washoe.....	494	1,083	-----	-----
White Pine.....	342	304	-----	-----
Totals.....	8,187	7,640	1,550	4,115

ENTOMOLOGY

The Nevada Department of Agriculture is responsible for regulatory activities and other functions relating to insect pest detection and surveys; control and eradication programs; cooperative reporting of insect conditions, and insect identification.

Insect Pest Detection and Survey

Pest detection surveys increased in number and intensity during the biennium. As in former years they were conducted for the boll weevil, Colorado potato beetle, European corn borer, Japanese beetle, khapra beetle, pink bollworm and tomato russet mite. Also a special survey was made for the golden nematode, *Heterodera rostochiensis* Wollenweber, a pest which is considered potentially more dangerous than any of the insects or diseases now affecting Nevada potatoes. Pink bollworm surveys consisted of regular blossom inspection and green boll inspection, and in addition the use of Argon ultra-violet light traps. The latter method greatly increased the probability for its detection. Results of all of the above surveys were negative.

Although not the object of special detection surveys, twenty-six species of insects of existing or potential economic importance were discovered in the state for the first time. They included an earwig, *Euborellia cincticollis* (Gerst.), and a fleahopper, *Spanogonicus albofasciatus* (Reuter), which are known to damage melons; two sawflies, *Neodiprion edulicolis* Ross and *Zadiprion rohweri* (Middleton), which feed on piñon pine; the western grape leaf skeletonizer, *Harrisina brillians* B. & McD., a pest of grapes; the brown wheat mite, *Petrobia latens* (Müller), which feeds primarily on monocotyledonous plants, but also damages other hosts; three species of deer flies; and seven species of mosquitoes.

One species of deer fly, *Silvius pollinosus* Williston, is and has been very abundant and annoying to man and livestock in southeastern

Clark County. The mosquito, *Psorophora confinnis* (Lynch Arribalzaga), found near Moapa, Clark County, will become an extremely severe pest if high population levels are reached.

Several insects known to be present in the state were found in areas in which they previously were absent. Two of these, the elm leaf beetle and the smaller European elm bark beetle, are serious pests of elm. The former species has spread as far south as Hawthorne, Mineral County, and the latter species now occurs in Reno, Washoe County, where it has killed numerous elm trees.

General surveys were intensified during the biennium resulting in additional information relative to injurious and beneficial insects in the state. Generally, these surveys indicated that the most important groups of crop and forest insect pests were aphids, bark beetles, cutworms, leafhoppers and spider mites. Pea aphid populations were unusually high and injury was severe to alfalfa with numerous plants in several fields in the northern areas of the state being killed in 1959.

Lygus bug problems on cotton and seed crops continued to increase. Population levels were high and in certain areas the insecticides in current use failed to give adequate control.

Requests for more information concerning honey bees and native insect pollinators of seed crops increased. In the Orovado and Kings River Valley areas of Humboldt County artificial bee beds were constructed as nesting sites for the alkali bee, *Nomia melanderi* Cockerell, an efficient pollinator of alfalfa. The nesting sites are to be increased in these areas and additional beds are planned in other alfalfa seed producing areas of the state.

Mormon Cricket Program

The Department policy of doing the necessary preventative control work each year that will hold Mormon cricket populations in check rather than allow extensive build-ups requiring large expenditures of funds to bring them under control, was continued during the biennium.

The Mormon cricket population in 1959-1960 was probably at its lowest point in the last thirty years. This can be attributed to the preventative programs of 1955-1958, which eliminated the potential build-up in many areas of the state.

Surveys conducted in 1958 indicated that 10,000 acres would probably require treatment in 1959. These anticipated economic populations did not develop, and no control work was done during the year. Adult surveys conducted during 1959 indicated potential trouble spots in five counties in the state; however, these infestations did not build up to economic numbers in 1960 partly due to the dry spring weather of this year. Adult surveys conducted during 1960 indicate potential economic populations on 29,300 acres. Of special interest is the expected build-up in the Van Duzier and Jarbidge area of Elko County. These two areas are expected to have 16,500 infested acres, the first build-up in about twenty years.

Other Mormon cricket areas having a history of previous infestations and build-ups will be watched closely in 1961 in order that an extensive program can again eliminate this threat should economic populations develop.

Grasshopper Program

In the control of grasshoppers, as with Mormon crickets, it has been the policy of the Department to conduct annual surveys in order to determine threatening infestations with special emphasis being placed on those lands having public responsibilities. The work here is also conducted in cooperation with the Plant Pest Control Division of the U. S. Department of Agriculture, the Bureau of Land Management, U. S. Department of Interior, and private individuals.

Work on privately owned land has been confined to seasonal surveys to determine potential economic infestations in order that the owners may be advised of the situation in sufficient time and to allow the Department to assist with recommendations and control as to chemicals, time and method of application, rates of application and general supervision.

Adult surveys conducted during the fall of 1958 did not disclose threatening economic populations of grasshoppers for 1959, but surveys conducted during 1959 showed a slight build-up in both rangeland and farmland grasshoppers; however, as in 1958 no severe economic populations developed.

During the first part of 1960 infestations were again restricted to small isolated spots throughout the state. Adult surveys conducted during the early summer of 1960 showed a further build-up of grasshoppers in many of the farming areas of the state, and we can expect that in 1961 some active control programs will be required in order to bring these threatening infestations under control without severe losses to our agricultural areas.

Grape Leaf Skeletonizer Program

The discovery of the western grape leaf skeletonizer in Las Vegas, Clark County, was followed by delimiting surveys which made known the area of infestation. Information received from these surveys indicated that this pest was restricted to one area of the city. As a result its eradication was considered feasible and will be undertaken by the Division.

Biological Control

The three introduced parasitic wasp species, *Aphelinus semiflavus* Howard, *Praon palitans* Muesebeck and *Trioxys utilis* Muesebeck, of the spotted alfalfa aphid continued to spread and suppress their host.

The fly parasite, *Erynnia nitida* R.D., of the elm leaf beetle has not been recovered since its release. An imported pea aphid parasite, *Aphidius smithi* Sharma and Rao, was released in Churchill and Washoe Counties in 1960. Releases of other species of insects, which destroy noxious insects and weeds, will be made when possible.

Cooperative Economic Insect Report

Under a cooperative agreement with the U. S. Department of Agriculture, Agricultural Research Service, Plant Pest Control Division, the Department serves as a clearinghouse for insect conditions in Nevada. This information is compiled on a weekly and annual basis from reports received from Federal, State and County agencies, Extension Service, pest control operators, and other groups and individuals,

and is published in the U. S. Department of Agriculture's weekly Cooperative Economic Insect Report. This report is sent to adjoining states and to cooperating agencies and personnel in this state. In return Nevada receives reports from these agencies.

Systematic Entomology

The Division of Plant Industry is responsible for the identification of insects collected during detection and general surveys and received from other agencies and the general public. This responsibility is of singular importance because any and all information such as distribution, life cycle and control of an insect is based on correct identification.

To increase the efficiency of insect identification the Division inaugurated an improved identification service which is based upon a form to be completed by the sender. When completed this form contains essential information concerning the species in question and is submitted with the insect when it is forwarded for identification. The information on the form facilitates identification of the insect, adds valuable data to that already on file and results in a more rapid reply to the sender. The improved identification service is in part responsible for a tripling of the insect identifications made this biennium over the previous one.

The permanent insect collection, which was begun near the end of the previous biennium, has increased rapidly. It consists of pinned specimens housed in units in insect cases developed by the California Academy of Sciences, specimens in alcohol-vial files and specimens on glass slides. The insect collection is of major importance for use in insect identification, and is used extensively in conjunction with literature and other aids for this purpose.

FARM PRODUCE DEALER

The 1959 session of the Nevada State Legislature enacted legislation requiring the bonding and licensing of all persons buying agricultural produce from the producer. This law was reviewed by the 1960 Legislature and amended to remove ambiguous statements, conflicting exemptions and to clarify various sections (also to remove loopholes in the original act). The law now requires licensing and furnishing of a \$5,000 surety bond by all persons who buy agricultural produce on a deferred payment basis with the following exceptions:

(1) Non-profit organizations, such as the Nevada Fair of Mineral Industries; 4-H clubs; Nevada Jr. Livestock Show; Nevada State Livestock Show; Nevada Hereford Association.

(2) Any farmer or rancher whose farm or ranch is located in the State of Nevada who buys or receives produce or livestock from another farmer or rancher not for immediate resale (immediate resale means the sale of farm products or livestock made within 60 days of the purchase thereof).

(3) Any retail merchant having a fixed and established place of business in this state and who conducts a retail business exclusively. In addition to the bonding and licensing requirements in connection with deferred payment for produce, all cash buyers must register with the Department and pay a \$20 registration fee.

A cash buyer is defined as any person other than a commission merchant or dealer or broker who purchases or offers to purchase any farm products or livestock for the purpose of processing or resale and who pays for such farm products or livestock in lawful money of the United States, or by certified check at the time of purchase, or delivery thereof. By administrative authority the Division of Plant Industry administers this law as it relates to all farm produce other than livestock and livestock products.

NURSERY LICENSING AND INSPECTION

The nursery licensing act passed by the 1959 session of the Nevada Legislature, being Sec. 555.235-555.250 NRS inclusive, became effective July 1, 1959. During the first year of operation of this act, 118 establishments were licensed to sell nursery stock in accordance with the provisions of the licensing requirements. In June 1960, hearings were held on proposed regulations governing the labeling of nursery stock, health, care and condition of the stock, as well as standards of cleanliness, and mandatory and permissive grade size classifications. After review of the testimony at the hearings, regulations were adopted to become effective October 1, 1960. Enforcement of this nursery act and the regulations adopted thereunder will make high quality nursery stock available to the consuming public.

In addition, and most important, will be the enforcement of the standards of cleanliness regulation, which will do much to relieve the potential threat of introduction of serious pests into the State of Nevada.

During the year all establishments selling nursery stock were inspected one or more times. As manpower was available, all incoming shipments of nursery stock were inspected upon delivery. A number of lots of nursery stock were rejected and shipped back to point of origin due to infestations of crown gall, scale, and other insect pests and plant diseases, as well as primary noxious weeds.

PEST CONTROL OPERATORS

It is the responsibility of the Division to examine and license individuals qualified to perform pest control work for hire.

Proper storage facilities and equipment used by pest control operators are inspected regularly. The general work of these operators is also periodically checked for proper use and application of chemicals.

As increasing numbers of pesticides are introduced and greater restrictions for their use are formulated, there is an urgent need for more knowledge and skill in the application of them to comply with the strict tolerances for economic poisons on food crops. The misuse of many toxic or dangerous materials could cause injury to humans, crops, or livestock.

Pest control operations are carried out on farms, rangeland, home gardens, residences and varied types of business establishments. Pesticide applications vary from spraying six rose bushes in a home garden using a ground sprayer, to spraying several thousand acres of farm crops by airplane.

During the biennium there were 38 licensed commercial pest control operators in the state who made applications to 29,547 homes and gardens; 15,531 on commercial business establishments and 1,497 applications on 81,993 acres of agricultural crops and rangeland.

LICENSED SPRAY OPERATORS, 1960

AAA Pest Control 1116 Fremont St. Las Vegas, Nevada	Sam Nakanishi Box 470 Las Vegas, Nevada
A & B Pest Control Co. Box 2581 Las Vegas, Nevada	Phillips Landscape Tree Service 1045 Peckham Lane Reno, Nevada
Ace Exterminating Co. 1701 Linn Lane N. Las Vegas, Nevada	Pied Piper Pest Control 1221 Skyline Blvd. Reno, Nevada
Agricultural Aviation Institute Div. of Turbo Dynamics Corp. c/o Marty Kronberg Minden, Nevada	Geo. A. Probasco Co. Attn. James M. Buchanan 640 N. Sierra Street Reno, Nevada
Agair, Inc. Box 335 Dos Palos, California	Reeder Flying Service Municipal Airport Twin Falls, Idaho
C. A. D., Inc. Box 1186 Reno, Nevada	Al Russell Pest Control Co. 721 Evans Avenue Reno, Nevada
Cal-Nev. Tree Service 224 N. Arlington Reno, Nevada	Schopper's Nursery 530 E. 2nd Street Reno, Nevada
Chipman Chemical Co., Inc. Box 679 Palo Alto, California	Eric Sebbas Lovelock, Nevada
Christensen Aerial Application Service Box 86 Pahrump, Nevada	Henry Seeman Minden, Nevada
Concrete Construction Corp. 2129 Industrial Road Las Vegas, Nevada	Silver State Disposal Service, Inc. 1300 N. "A" Street Las Vegas, Nevada
Devey Products & Service Company 3711 Beverly Blvd. Los Angeles 4, California	James B. Stover 2120 Ogden Street Las Vegas, Nevada
Edelsen's Landscape Gardening 2501 Holcomb Reno, Nevada	Superior Sanitary Service Box 1885 Las Vegas, Nevada
Farm Service Co. (Howard Dale) Box 993 Yerington, Nevada	Ted's Flying Service Star Rt. Box 5 Winnemucca, Nevada
Leon W. Gardiner 3632 Jackson Ogden, Utah	Wachel Pest Control 4214 E. Holt Blvd. Pomona, California
Morgan Pest Control Box 228 Las Vegas, Nevada	J. Warren Whitehead Box 17 Fallon, Nevada
	A. G. Williams 2818 Fremont St. Las Vegas, Nevada

STANDARDIZATION AND GRADING

The Division activities in the field of standardization and grading of agricultural produce may be divided into two fields: shipping point inspection and market enforcement.

Shipping Point Inspection

Under agreement with the U. S. Department of Agriculture, the Division makes shipping point inspection of agricultural produce and issues a Federal-State shipping point certificate, certifying as to the grade and condition of the agricultural produce. Normally the Division makes inspection on three commodities: hay, potatoes, and onions;

however, during the period covered by this report, the Division was not called upon to make any hay inspections. This activity has been confined only to onions and potatoes.

With the development of melon production in southern Nevada, shipping point inspection will probably be required in southern Nevada during 1961.

SHIPPING POINT INSPECTION

	Tons		Total
	1958-59	1959-60	
Onions.....	8,926	11,426	20,352
Potatoes.....	3,698	4,211	7,909
Totals.....	12,624	15,637	28,261



Shipping point inspection of onions moving interstate for processing.

Market Enforcement

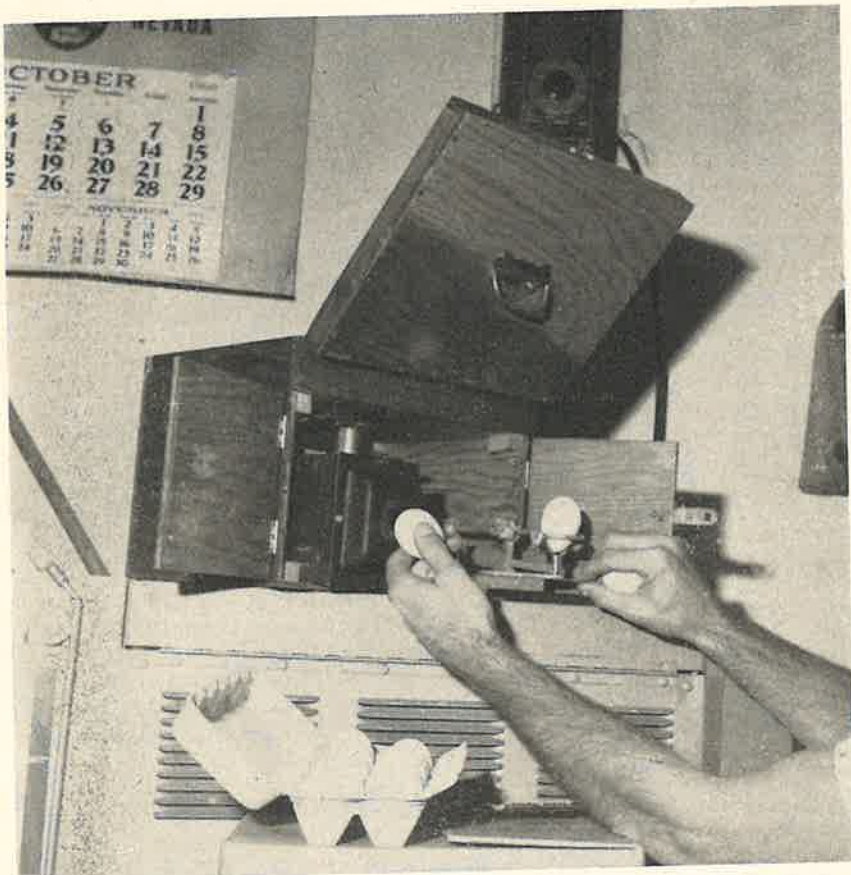
Fresh Fruit and Vegetables—This work is confined to the area encompassing Clark County in southern Nevada, where county inspectors working under the supervision of the Division, enforced county and city ordinances on minimum quality of agricultural produce that may be offered for sale. The program, developed in Clark County, has

made higher quality perishable agricultural produce available to the consumer.

Shell Eggs

Enforcement of the shell egg grades and labeling requirements serves a two-fold purpose to industry and the consuming public.

First, the egg industry is served by an educational program inaugu-



Shell egg grade inspection at the retail level for quality weight and labeling.

rated by the Division to assist producers, wholesalers and retailers on the care, grading and weighing of eggs, and in proper labeling of egg containers.

Secondly, the consuming public is protected by the periodic inspection of eggs offered for sale to insure compliance with quality, weight and labeling requirements.

The results of this educational and enforcement program have greatly improved the quality of eggs purchased by the ultimate consumer.

During the biennium, 235,740 dozens of eggs were inspected and

51,570 dozens rejected for noncompliance. Of the total rejected, 50 percent was for labeling violations and 25 percent each for quality and weight violations. Noncomplying lots of eggs were regraded, reweighed or properly labeled.

One court action resulted in a plea of guilty, and payment of a fine by a violator who continually sold short weight eggs.



The laboratory analysis of seed requires the technical knowledge of a trained seed analyst.

AGRICULTURAL SEED

Regulation No. 3 under date of January 25, 1960, revised the list of primary and secondary noxious weed seeds. Morning-glory was removed from the classification of a primary noxious weed seed and designated as a secondary noxious weed. Regulatory-wise this requires that agricultural seed, which contains morning-glory, *Convolvus arvensis*, must be labeled to show the number of morning-glory seed in each pound of the seed.

Official samples, drawn by departmental personnel, submitted to

the state seed laboratory for analysis for the purpose of checking the accuracy of the information on the label, increased materially during the biennium. A total of 455 official samples was drawn.

Seed Laboratory

In addition to the 455 official samples submitted to the laboratory, the seed laboratory processed 81 samples submitted by seed houses and private individuals. Many of the samples submitted required both germination and purity tests. About 829 separate purity or germination tests were completed during the biennium by the laboratory.

Seed Certification

Interest in the production of certified seed is increasing very rapidly in those areas of the state that are being developed through the utilization of ground water. Generally speaking these areas are somewhat isolated from the other producing valleys and are a natural for seed production, in that they are free from serious insect pests, plant diseases and noxious weeds.

One of the handicaps in the development of new agricultural lands is the isolation and long distance to market. This makes the production of seed crops an important segment of our Nevada economy as it will enable farmers to produce a cash crop that can be moved to market with a minimum transportation problem.

During the winter of 1958-1959 many seed fields were lost due to weather conditions and predators, primarily rabbits, which killed out or reduced stands to the point where it was necessary to replant. One of the land requirements in connection with the production of certified seed is a planned rotation that requires a definite period of time during which no plant of the crop seed to be produced can exist on a given piece of land.

During the period of 1956-1960 we have had a thirty-fold increase in the acreage entered under the certification program. It is anticipated that within the next two years, depending upon the general agricultural economy of the country, our certified seed production acreage will increase to 8,000 acres.

The following table shows the acreages by crop registered under the certification program during the period 1956-1960.

CERTIFIED SEED ACREAGES

Crop	1956	1957	1958	1959	1960
Alfalfa.....	---	420	1,018	797	2,949
Clover.....	50	93	40	394	960
Grain.....	22	114	---	26	10
Grass.....	20	90	87	22	---
Potatoes.....	40	3	---	---	10
Totals.....	132	720	1,144	1,239	3,929

NOXIOUS WEEDS

Weeds in general cause a great adverse economic impact on our society. Their presence necessitates monetary expenditure for control measures and vigilance to prevent spread onto infested lands. These pests compete with crops and forage plants for soil nutrition and moisture. In time, some weeds can completely infest land areas and render such areas unproductive and useless. They require costly

removal and control operations because of their encroachment into irrigation systems and onto highway, railroad and utility companies rights-of-way. Some weeds are poisonous to livestock; others produce allergies in humans and still others cause fire hazards.

The State Quarantine Officer has the responsibility of designating noxious weeds, making surveys with respect to noxious weed infestations, carrying out experimental control work, and assisting with control programs.

Noxious weed Regulation No. 6, issued February 5, 1960, revised the list of weeds designated as noxious.

The highly advertised Sorghum Almum forage grass was observed with keen interest during the biennium by Division personnel. The general public was warned that this grass has as its parentage the noxious weed, Johnson grass, and its planting would require eradication by the Department. In spite of these warnings, some people planted Sorghum Almum with disastrous results.

In northern Nevada over 98 percent was winter killed, and the surviving plants, which were ordered eradicated, exhibited underground root rhizomes typical of Johnson grass.

This is an example of people being duped by misleading publicity. It is strongly urged that ranchers check with the Department, or their county agents to find out about highly publicized new forage grasses before making blind purchases.

A noxious weed chemical control program was carried out with the following cooperating agencies during the last two-year period:

Bureau of Land Management; Division of Highways; railroads; schools and weed districts; and the counties of Humboldt, Pershing, Elko, Lyon, Churchill, Clark, and Washoe, as well as the cities of Winnemucca, Sparks, Reno, Fallon, Las Vegas, Henderson, and Boulder City. Some cooperative control work was carried out on private lands where certain noxious weeds are under eradication programs on a county-wide basis.

A total of 228,480 gallons of chemical spray solution was applied to 3,571 acres of noxious weeds by state and county weed control crews. During the biennium, participating agencies, and the state, expended \$60,344.20 for control operations, exclusive of supervision and equipment.

Cooperative control programs were conducted on the following weeds:

Halogeton, puncture vine, yellow star thistle, Klamath weed, Syrian rue, white top, leafy spurge, camel's-thorn, Canada thistle, Russian knapweed, Johnson grass and white horse nettle.

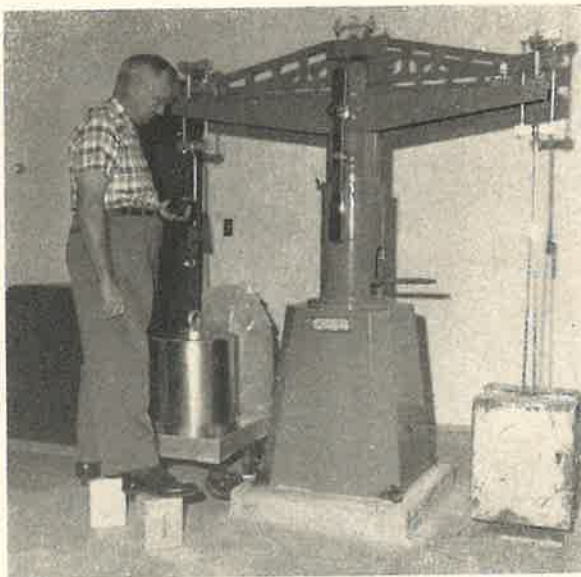
Basic chemicals and amounts used in cooperative control operations during the biennium were:

Chemical	Pounds
Amino triazol.....	1,781
Dalapon.....	418
Televar.....	499
Atrazine.....	40
Simazine.....	290
	Gallons
2,4-D.....	974
Benzoic acids.....	216
Dinitro General.....	125
Weed oils.....	30,557
Spreaders.....	14

New herbicides were evaluated on several test plots in order to find better and more economical weed control chemicals under Nevada conditions.

Atrazine, Simazine and Benzabor show good promise as soil sterilants. The invert formulation of 2,4-D shows some promise in controlling woody noxious weed species; however, more evaluation work must be conducted before recommendations for usage may be made.

The potential threat of more and new noxious weed problems is ever increasing due to new land going into production and new people bringing with them seed and farm equipment. The Department must step up its detection and survey work to keep ahead of new problems as they arise.



Calibrating 1,000-pound weight using the new Russell Balance. This balance is sensitive to five grains at a 1,000-pound test load; 1,000-pound field weights are calibrated to within 50 grains of accuracy.

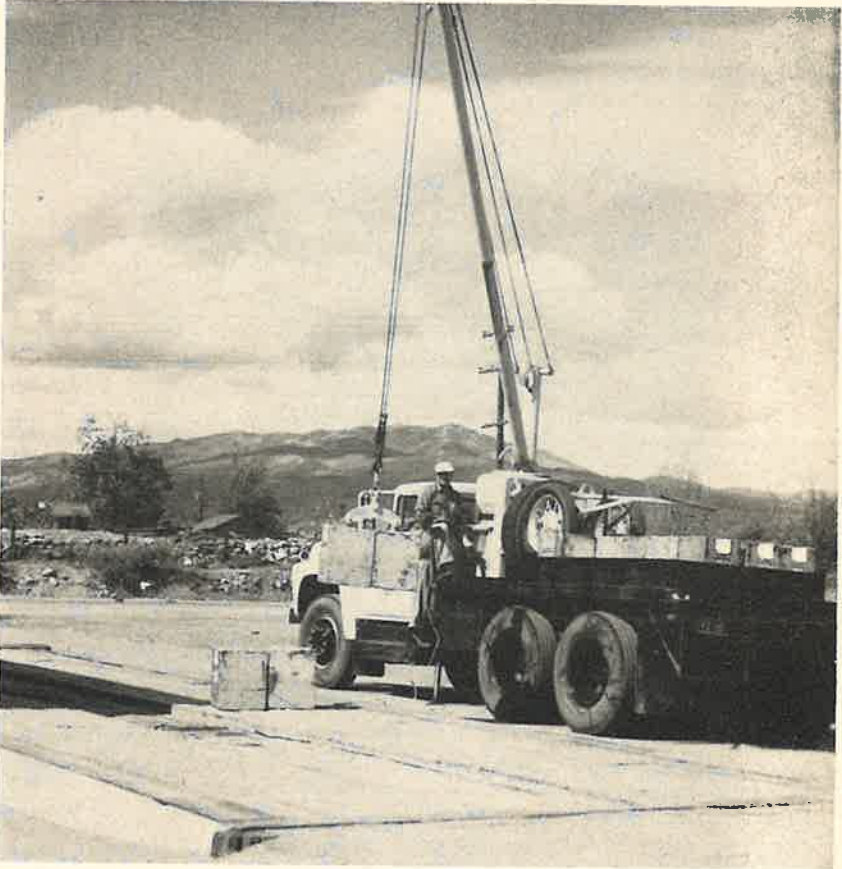
WEIGHTS AND MEASURES

The Legislature transferred Weights and Measures and related law enforcement responsibilities to the Department of Agriculture, effective July 1, 1959. Laws administered by the Division include Weights and Measures, Public Weighmasters, Petroleum Products Inspection, Petroleum Advertising and Antifreeze inspection and labeling.

Weights and Measures activity is an important part of the Division because it governs the daily economic sales or purchases of nearly every person in the state. Almost every item bought or sold is by a unit of weight, measure or count. It is estimated that over \$500,000,000 worth of retail sales in the State of Nevada are dependent upon weight, measure, or count; therefore, it is imperative that all weighing

and measuring devices used in commerce be tested for accuracy and that prepackaged commodities sold are checked for compliance with net quantity statements marked thereon.

The State Sealer is obligated by law to test annually all commercially used weighing and measuring devices for accuracy. This work is performed by Weights and Measures personnel stationed at the three district offices located in Las Vegas, Elko, and Reno. Washoe and



Clark County Agriculture Department personnel assist with weights and measures and related activities as needed.

All Weights and Measures equipment used by field personnel is checked annually against state master standards which, in turn, have been tested for accuracy by the National Bureau of Standards. This insures the use of accurate equipment in checking the scales, weights and measures used in commerce.

Scales

Many kinds of weighing devices and weights are tested for accuracy. These devices vary from drugstore prescription balances to 100,000 pound capacity motor truck scales; also prepackage, computing, spring,

livestock, overhead track, hopper, and platform scales. The work is performed in the following avenues of commerce:

Drugstores, bakeries, creameries, groceries, hardware stores, meat markets, candy shops, laundromats, airports, freight depots, feed mills, storage companies, gravel and cement plants, manufacturing plants, construction companies, mines, farms, livestock auction yards, and slaughterhouses.



The inspection of liquid petroleum gas meters requires the use of special equipment and technical training.

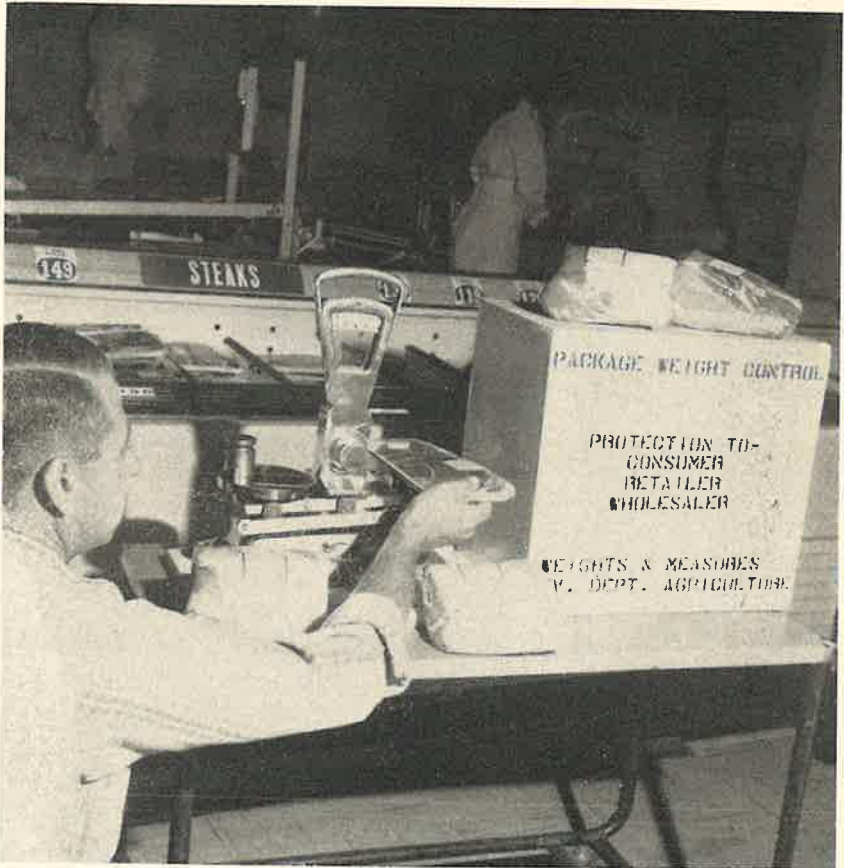
On page 44 is a photo of the new truck scale testing unit with a gross weight of 40,000 pounds, of which 20,000 pounds is composed of twenty 1,000-pound removable weights. The truck is equipped with a hydraulic boom arm for the moving of the weights.

Metering Devices

Meters used to indicate units of volume measurements of petroleum products are not only tested for accuracy, but all devices are checked

for proper installation compliances and to prevent any fraudulent practices. Air elimination systems are tested for proper functioning to insure that air is not registered through meters as gallons of product. Delivery hoses on gas station pumps and delivery trucks are checked for the presence of anti-drain valves to prevent the drainage of hoses after the systems have been turned off.

Gasoline, stove oil, propane and diesel oil delivery truck meters are



A special over-under balance is used in package weight inspection.

checked in this operation, as well as bulk plant and retail station meters.

Capacity Measures

This field of endeavor covers the checking of any container whose capacity is used as a unit of measure. Items checked are:

Gravel truck beds for cubical yardage contents; motor oil dispensers as quarts, pints; milk holding tanks on farms and milk container filling machines at creameries.

Prepackaged Commodities

Over 90 percent of all commodities sold today are in the prepackaged form and such packages are required to be labeled as to their contents by a statement of correct net weight, measure, or numerical count. The average supermarket alone stocks over 4,000 separate prepackaged items; therefore, there is a definite need to determine if packages contain the declared net quantities claimed on their labels.

The prepackage inspection program during the first year of operation has been on a survey basis to determine what the problems are in the field of prepacked materials with respect to short weight, measure, or count. This study will enable the Department to determine the enforcement program necessary to adequately cope with the problem.

To date, shortages found in interstate shipments of goods have been referred to the state in which the items originated for corrective action. Local shortage problems have been dealt with by educational programs, and in some cases, legal action when necessary.

Following is a summary of all types of weighing and measuring devices checked for accuracy and other regulation compliance during the 1959-1960 fiscal year:

Scales	Total tested	Sealed correct	Adjusted and sealed	Out of order†
Spring.....	701	538	120	43
Computing.....	960	698	190	72
Track and hopper.....	63	40	16	7
Small capacity.....	552	416	102	34
400-lb. and under platform.....	256	168	59	29
400-lb. and over livestock.....	401	294	53	54
Motor truck.....	75	45	22	8
Balances.....	81	65	15	1
Weights				
Apothecary-Troy.....	304	300	1	3
Avoirdupois.....	1,095	1,053	9	33
Meters				
*Gasoline pumps.....	3,180	1,950	402	828
Rack.....	162	55	74	33
Truck.....	448	233	137	78
Liquid petroleum.....	200	163	32	5
Tank truck.....	26	8	17	1
Five-gallon.....	28	19	8	1
Milk tanks.....	64	18	22	24
Miscellaneous.....	20	19	1	—
Grand total.....	8,616	6,082	1,280	1,254

*80 percent of the 828 out-of-order gasoline pumps were for noncompliance for anti-drain valves. This was the first year that the requirement was enforced.

†Over 90 percent of the total out-of-order devices have been repaired or replaced, with the balance pending correction at time of this report.

Out of order devices are required to be repaired within specified time limits. Non-compliance with repair notices results in the "sealing closed" of such equipment to prevent its use. In some instances, unreparable or non-complying equipment is condemned and confiscated.

Considerable time and mileage were expended in travel by personnel due to the distances that must be covered in work performance. Weights and Measures inspectors traveled 74,592 miles during the 1959-1960 fiscal year. Of this total, 17,348 miles were chargeable to the testing of livestock scales.

AVERAGE INSPECTOR TIME EXPENDED ON WEIGHTS AND MEASURES FUNCTIONS

	Percent
Gasoline pumps.....	16
Truck and rack meters.....	11
Liquid gas meters.....	5
Farm milk tanks.....	5
Liquid and dry measures.....	2
Motor truck scales.....	2
Large-capacity scales.....	3
Small-capacity scales.....	10
Livestock scales.....	11
Calibrations.....	1
Package quantity checking.....	4
Petroleum advertisement.....	4
Petroleum and antifreeze enforcement.....	2
Equipment maintenance.....	2
Miscellaneous.....	4
Travel.....	18

Public Weighmasters

There are forty officially licensed and bonded persons in the state who operate as public weighmasters. Weighmasters certify to the accurate weight of any given commodity and issue official certificates for their services.

Persons certified as public weighmasters must file a \$1,000 faithful performance bond with the Department, pay a \$25 licensing fee and must operate an accurate scale.

Petroleum Advertising

The enforcement of new legislation governing the use of price signs to advertise petroleum products placed a tremendous burden upon administrative and supervisory personnel who carried out the bulk of the enforcement work. Over one man-year was expended on this function. A part of this law has been challenged as to its constitutionality and its validity will soon be determined by the Nevada Supreme Court.

CHEMISTRY LABORATORY

Legislative action in 1959 added this new function to the Division. The first year of operation was devoted mainly to recruiting chemists and the setting up of a new laboratory.

The primary functions of the chemical analytical laboratory are to analyze economic poisons and fertilizers offered for sale to determine if these materials contain the actual quantities of ingredients claimed by their labels. Other functions are to check the poisonous properties of weeds which are toxic to livestock; the stomach contents of livestock suspected of dying from such weeds; forage crops for possible chemical spray residues and pesticide spray solutions used by commercial pest control operators for proper material dosage concentrations.

Economic Poisons

any product for sale

Under Nevada law pesticides are classed as economic poisons. These materials are defined as any substance or mixture of substances intended for preventing, destroying, repelling or mitigating any insects, rodents, fungi, weeds or other forms of plant life or animal life or viruses, except viruses on or in living man or other animals,

which the director shall declare to be a pest. All pesticides must be registered before they may be sold in Nevada. Registration is for the calendar year and must be renewed annually. The label statement of ingredient, directions for use, cautions, or warning, and antidote are reviewed and approved before a registration is issued.

The number of brands registered for sale in the state has continued to increase each year. The registration requirements of the law became fully effective July 1, 1956. A comparison of the number of brands registered each year shows a steady increase.

Year	Number of companies	Number of brands registered
1956	71	692
1957	109	802
1958	188	1,062
1959	211	1,340
*1960	231	1,442

Official samples are taken of economic poisons offered for sale, which are chemically analyzed to determine if the materials contain the amounts of ingredients claimed by the labels. Pesticides found deficient are ordered off sale.

Commercial Fertilizers

Commercial fertilizers and agricultural minerals must be registered before they may be sold, and registration is for the fiscal year. Samples of fertilizers offered for sale are analyzed to determine compliance with label ingredient claims. Fertilizers found in violation are ordered off sale. Manufacturers of fertilizers found to be short of the guaranteed claims must pay a penalty to the injured party of three times the value of the deficiency found. Under this provision one rancher received a penalty payment of \$1,109.45 due to the finding of a 5 percent deficiency of phosphorus on a large quantity of fertilizer purchased.

The number of brands of commercial fertilizers and agricultural minerals registered has remained fairly constant over the past four years with about 55 companies registering 70 brands and 200 grades of fertilizers. The consumption of fertilizers has continued to increase at a rather constant rate and with the increased consumption there has also been an increase in the percentage content of primary plant foods, nitrogen, phosphorus and potash.

COMMERCIAL FERTILIZERS SOLD IN STATE, 1954-1959

Year	Commercial fertilizer	Agricultural minerals*
1954	2,309	4,669
1955	2,156	1,306
1956	3,531	2,122
1957	4,313	15,945
1958	4,410	1,352
1959	5,354	202

*The consumption of agricultural minerals, primarily gypsum, has been variable each year depending on land reclamation and soil building programs.

Antifreeze Registration

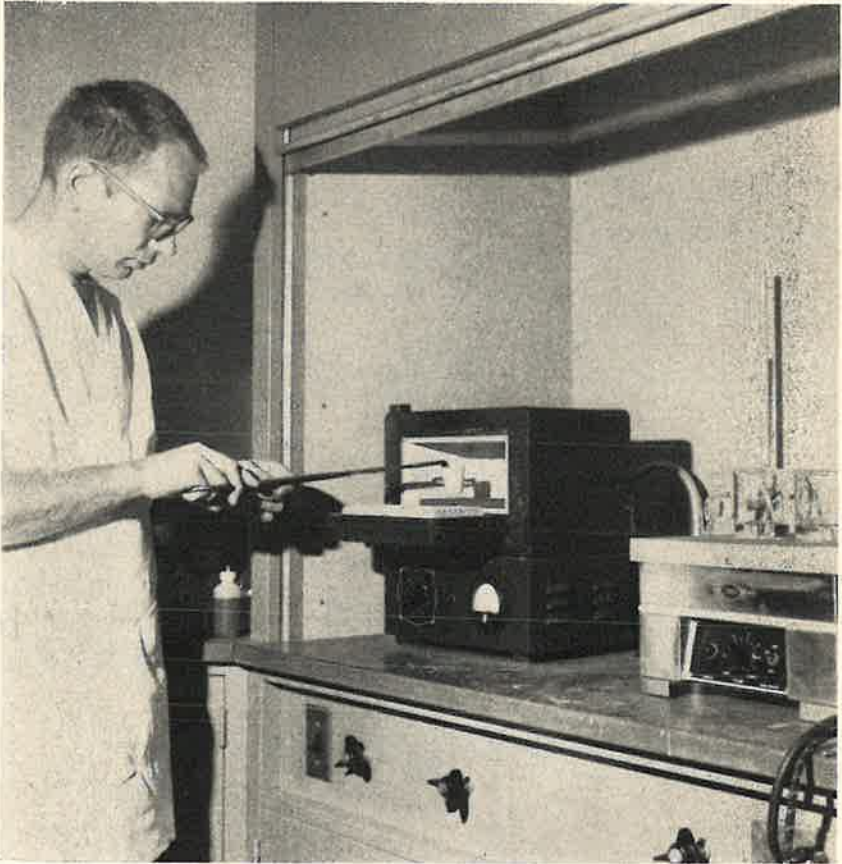
Antifreeze brands must be registered with the Department and each brand must pass specification test requirements before it can be sold

in this state. This testing is to insure the product's satisfactory performance as a freezing inhibitor and freedom from materials that would cause detrimental effects to engines and cooling systems.

Three thousand thirty-five gallons were ordered off sale for non-registration. Eventually these products were registered, tested and released for sale.

Petroleum Products Inspection

The law governing the sale of petroleum products for use in internal combustion engines prohibits the sale of products that: (1) Do not



A fume hood and muffle furnace are important tools used in chemical analysis.

conform to state specifications; (2) could be injurious to engines, or perform unsatisfactorily; (3) which are mislabeled.

Petroleum product samples are picked up at random by inspectors in the area and submitted to the petroleum laboratory for analysis.

Following is a summary of analysis findings for the 1959-1960 fiscal year:

	Samples tested	Passed	Deficient	Disposition
Antifreeze.....	76	76		
Gasoline.....	268	266	*2	Corrected
Motor oil.....	199	176	†23	Off sales warnings corrections
Diesel oil.....	9	9		
Octane rating.....	47	46	†1	Corrected
Economic poisons.....	57	54	3	Off sale
Fertilizers.....	18	16	2	1 off sale 1 penalty payment

*1 water contamination; 1 fuel oil contamination.

†SAE grade mislabeled.

‡Misadvertising.

MEETINGS AND CONFERENCES ATTENDED

- July 27-30, 1958—Meeting of Executive Committee of National Association of State Departments of Agriculture, Rapid City, South Dakota.
- September 29-October 3, 1958—Meeting of National Association of State Departments of Agriculture, Madison, Wisconsin.
- October 29-31, 1958—Agricultural Standardization and Nursery meeting, Klamath Falls, Oregon.
- November 18, 1958—Meeting of Central California Agricultural Inspectors' Association, Stockton, California.
- December 10-11, 1958—Meeting of California State Association of County Agricultural Commissioners, Sacramento, California.
- January 21, 1959—Meeting called by Agricultural Research Service, U.S.D.A. and National Association of State Departments of Agriculture to discuss pink bollworm program, Memphis, Tennessee.
- April 7-9, 1959—Western Seed Officials Association meeting, Las Cruces, New Mexico.
- May 25, 1959—Meeting of Board of Governors of Agricultural Hall of Fame, Kansas City, Kansas.
- June 1-5, 1959—Annual meetings of Western Plant Board and Western Area Standardization Conference, Phoenix, Arizona.
- June 8-12, 1959—Meeting of National Bureau of Standards, Washington, D. C.
- June 22-26, 1959—Pacific Coast Entomological Society meeting, Sacramento, California.
- July 22-24, 1959—Meeting of Executive Committee of National Association of State Departments of Agriculture, Laramie, Wyoming.
- September 10-11, 1959—Meeting of Western Association of State Departments of Agriculture, Salt Lake City, Utah.
- October 18-23, 1959—Meeting of National Association of State Departments of Agriculture, Nashville, Tennessee.
- November 3-5, 1959—Agricultural Standardization and Nursery Meeting, Klamath Falls, Oregon.
- December 9-10, 1959—Meeting of State Association of County Agricultural Commissioners, Sacramento, California.

- January 11-12, 1960—Apiary Inspectors of America Conference, Phoenix, Arizona.
- January 13-15, 1960—National Beekeepers Federation meeting, Phoenix, Arizona.
- February 22-26, 1960—Joint meeting of Weed Society of America and the Western Weed Control Conference, Denver, Colorado.
- March 17-18, 1960—Cooperative Insect Detection Workshop, Riverside, California.
- June 20-25, 1960—Annual meeting of Association of Official Seed Analysts, Springfield, Illinois.

In addition to the above out-of-state meetings attended, the annual meetings of the Western Plant Board and Western Area Standardization Conference were held in Reno, June 6-10, 1960, and were attended by Division personnel.

ACKNOWLEDGMENTS

The Division is indebted to the sincere cooperation offered by the many local, State and National political subdivisions who have aided us in our many activities.

Personnel of the University of Nevada, State farm organizations, corporations, individuals and our related agencies in neighboring states have been of much assistance in our many efforts to serve the basic Nevada industry, agriculture.