# University of Nevada
# Agricultural Extension Division

CECIL W. CREEL, Director

# ANNUAL REPORT

—FOR—

WHITE PINE COUNTY

THOMAS R. KING, County Extension Agent

1923

Form No. 285
January 1, 1923

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS

U. S. Department of Agriculture
and State Agricultural Colleges
Cooperating

States Relations Service,
Office of Cooperative Extension Work,
Washington, D. C.

# ANNUAL REPORT OF COUNTY EXTENSION WORKERS

This report form is to be used by county extension agents, such as county agricultural agent, home demonstration agent, club agent, negro agent, etc., reporting on their respective lines of work.

*State* Nevada *County* White Pine

*Report of* Thos. R. King *County* Extension *Agent.*
(Name) (Title)

*From* December 1 1922 *to* December 1 —, *1923.*

If agent has not been employed entire year, indicate exact period. Agents resigning during the year should make out this report before quitting the service.

Approved:

Date _____ J. H. Gallagher
*State or District Supervisor.*

Date _____
*Extension Director.*

AC 0089/1/13

## SUGGESTIONS RELATIVE TO THE PREPARATION OF THE COUNTY EXTENSION AGENT'S ANNUAL REPORT.

The annual report should be a review, analysis, interpretation, and presentation to the people of the county, the State, and the Nation of the sum total of the extension activities in each county for the year and the results secured (including assistance rendered by subject-matter specialists). The making of such a report is of great value to the county extension agent and the county people in showing the progress made during the year as a basis for future plans. It is of vital concern also to the State and Nation as a measure of rural progress and a basis for intelligent legislation and financial support. This blank form covers simply the statistical phases of the report, and should be supplemented by a full report in narrative form.

### Narrative Summary.

The narrative report should be a statement in orderly fashion and arranged under appropriate subheadings, of the work done, methods used, and results secured under each project, as well as of the general work accomplished. Every statement should be clear-cut, concise, forceful, and, where possible, reinforced with ample data from the statistical summary. In the preparation of the part of the report relative to each project, the results reported in the statistical summary for the project should be analyzed, conclusions drawn, and recommendations made. The report may well be illustrated with photographs, maps, diagrams, blue prints, or copies of charts and other forms used in demonstration work. Full credit should be given to all cooperating agencies. The lines should be single-spaced, with double space between the paragraphs, and reasonably good margins left. The pages should be numbered in consecutive order.

The following outline is suggestive of how the narrative report may be clearly and systematically presented:

### SUGGESTIVE OUTLINE OF ANNUAL NARRATIVE REPORT.

I. Cover and title page.

II. Table of contents.

III. Status of county extension organization.
- (1) Form of organization—distinctive features.
- (2) Function of local people, committees, or project leaders in developing the program of work.
- (3) General policies, including relationships to other organizations.

IV. Program of work, goals established, methods employed and results achieved.
- (1) Factors considered and methods used in determining program of work.
- (2) Project activities and results.
  - (*a*) Soils.
  - (*b*) Farm crops
  - (*c*) Horticulture } (including diseases and insects).
  - (*d*) Forestry
  - (*e*) Animal husbandry
  - (*f*) Dairy husbandry } (including diseases and pests).
  - (*g*) Poultry husbandry
  - (*h*) Rural engineering.
  - (*i*) Rodents, predatory animals, and birds.
  - (*j*) Agricultural economics—including farm management, marketing, etc.
  - (*k*) Foods and nutrition.
  - (*l*) Clothing and millinery.
  - (*m*) Home health and sanitation.
  - (*n*) Household management and home furnishings.
  - (*o*) Community activities—other than those included under subject-matter headings.
  - (*p*) Miscellaneous.

V. Outlook and recommendations, including suggestive program of work for next year.

VI. Summary of activities and accomplishments, preferably of one or two typewritten pages only, placed at the beginning or end of the narrative report.



### Statistical Summary.

To supplement the narrative part of the report, and in order that comparable State and National summaries may be made, it is necessary to include a statistical summary of the work in each county. The following form has been prepared to insure uniformity of reporting. In addition to the questions asked under each subdivision of the report, space is provided to add further data if it is desired. The statistical summary will grow naturally out of the field and office records.

### Definitions of Terms Used in this Report.

1. A PROGRAM OF WORK is a definitely outlined plan for extension work.
2. A PROJECT is a definite, systematic, organized plan for carrying out some phase of the extension program of work, providing for what is to be done, how much, when, where, and by whom.
3. MISCELLANEOUS WORK includes work which has not yet become a regular part of the program of work—work other than project work.
4. A DEMONSTRATION is an example designed to show the practical application of an established fact. Demonstrations may be of methods or of results.

   Under *method* demonstrations include lecture demonstrations, practicums, etc., such as demonstrations of canning methods, home-mixing fertilizers, poultry culling, dress-form making, and the like, all involving short periods of time.

   Under *result* demonstrations include demonstrations in which a substantial period of time is involved, records of results kept, and comparisons made, as in a child-feeding demonstration, corn-culture demonstration, pasture-improvement demonstration, and the like.
5. A DEMONSTRATOR is an adult or junior who, under the direction of the extension service, undertakes to show in his community by example the practical application of an established fact, and who keeps records and reports on the same.
6. A COMMUNITY, for the purposes of this report, may be any one of the several units into which the county is divided for purposes of conducting organized extension work.
7. A PROJECT LEADER OR LOCAL LEADER is a person, selected because of his or her special interest and fitness, who functions in advancing some phase of the local program of extension work.
8. A STANDARD CLUB (*boys' and girls'*) is one in which certain State or National standards for club organization and procedure are met.
9. A COMMUNITY CLUB (*boys' and girls'*) is a club in which the classified clubs, such as corn, pig, canning, poultry, etc., are federated into one large community club.
10. AN OFFICE CALL is a visit or a telephone call by a farmer, or other person, seeking agricultural or home economics information, as a result of which some definite assistance or information is given.
11. A DEMONSTRATION MEETING is a meeting held to start, inspect, or further a demonstration.
12. A TRAINING MEETING is a meeting at which project leaders or local leaders are trained to carry on extension activities in their respective communities.
13. A FARM VISIT is a call at a farm by the agent at which some definite information is given or concrete plan of work outlined, or some valuable information obtained from the farmer regarding his work, or the better practice prevailing in his neighborhood.
14. A HOME VISIT is a call at a home by the agent at which some definite information is given or concrete plan of work outlined, or some valuable information obtained from the farm woman regarding her work, or the better practice prevailing in her neighborhood.
15. DAYS IN OFFICE should include time spent by the county agent in his office, at county agent conferences, and any other work directly related to office administration.
16. DAYS IN FIELD should include all days spent on official duty other than those spent in office.
17. LETTERS WRITTEN should include all single letters on official business.
18. A FARMERS' INSTITUTE is one of a series of meetings of one to two days' duration, arranged by a central State farmers' institute agency, at which agricultural and home economics problems are discussed, usually by outside speakers employed for the purpose.
19. AN EXTENSION OR MOVABLE SCHOOL is an itinerant school usually of two to six days' duration where practical but systematic instruction is given to persons not resident at the college. A SHORT COURSE differs from an extension school in that it is held at the college and usually for a longer period of time.

## GENERAL ACTIVITIES.

Report only *results* of extension activities that are supported by *records.*

1. List below the names, titles, and periods of service of all county extension agents whose work is included in this report. 1

| (Name.) | (Title.) | (Period of service.) |
|---|---|---|
| Thos. R. King | County Agent | 12-22 \|\| 12-1-23 |
| | | |
| | | |

| | | |
|---|---|---|
| 2. Total number of communities in county recognized for extension work | 3 | 2 |
| 3. Number of communities in which the extension program has been cooperatively worked out by extension agents and people concerned | 3 | 3 |
| 4. Number of voluntary county, community, or local leaders actively engaged in forwarding the extension program (a) Adult work | 10 | 4 |
| (b) Junior work | | |
| 5. What is the name of the county organization (if any) promoting extension work | Farm Bureau | 5 |
| 6. Number of adult clubs, if any, organized for promoting extension work | 3 | 6 |
| 7. Membership in county extension organizations, including adult clubs, if any, organized for promoting extension work | 50 | 7 |
| 8. Total number of farm visits made on extension work | 499 | 8 |
| 9. Number of different farms visited | 220 | 9 |
| 10. Total number of home visits made on extension work | | 10 |
| 11. Number of different homes visited | | 11 |
| 12. Number of office calls* relating to extension work | 222 | 12 |
| 13. Number of days agent spent in office | 168½ | 13 |
| 14. Number of days spent in field | 143 | 14 |
| 15. Number of individual letters written | 1089 | 15 |
| 16. Number of different circular letters prepared and sent out | 5 | 16 |
| 17. Total number of copies of such circular letters | 1130 | 17 |
| 18. Number of extension articles written by agent and published in local papers | 30 | 18 |
| 19. Number of community buildings established | | 19 |
| 20. Number of rest rooms provided for use of rural people | | 20 |
| 21. Number of fairs at which extension exhibits were made | 2 | 21 |
| 22. Training meetings* held for local leaders (a) Number | | 22 |
| (b) Attendance | | |
| 23. Demonstration meetings held (a) Number | 14 | 23 |
| (b) Attendance | 116 | |
| 24. Farmers' institutes* held (a) Number | 1 | 24 |
| (b) Attendance | 43 | |
| 25. Extension schools* and short courses held (a) Number | | 25 |
| (b) Attendance | | |

*See definition on page 3.



| | | |
|---|---|---|
| 26. Junior club encampments and rallies held (a) Number | | 26 |
| (b) Attendance by club members | | |
| (c) Total attendance | | |
| 27. Other extension meetings attended and not previously reported (a) Number | 30 | 27 |
| (b) Attendance | 650 | |
| 28. Number of meetings at which were shown (a) Lantern slides | | 28 |
| (b) Motion pictures | | |
| 29. Number of boys' and girls' clubs | | 29 |
| 30. Number of above clubs which are standard* clubs | | 30 |
| 31. Number of above clubs which are community* clubs | | 31 |
| 32. Number of members enrolled, all clubs (a) Boys | | 32 |
| (b) Girls | | |
| 33. Number of members completing† (a) Boys | | 33 |
| (b) Girls | | |
| 34. Number of demonstration teams trained (a) Boys | | 34 |
| (b) Girls | | |
| 35. Number of members continuing in club work | | 35 |
| (a) One year (1) Boys | | |
| (2) Girls | | |
| (b) Two years (1) Boys | | |
| (2) Girls | | |
| (c) Three years (1) Boys | | |
| (2) Girls | | |
| (d) Four years (1) Boys | | |
| (2) Girls | | |
| 36. Number entering college this year as result of club work | | 36 |
| 37. Number of junior judging teams trained | | 37 |

[Use space below to include other important data.]

*See definition on page 3.

† If the club project involves more than one year's work, "members completing" should include those who have satisfactorily finished the work outlined for the current year.

## PROGRAM SUMMARY.

List below information on each project of the program of work for the year. (If an assistant agent has been employed during the year, include his or her time with that of the agent.)

| Title of project. | Number of communities participating. | Voluntary leaders. | | Days specialists helped. | Days agent worked (office and field). | Number of method* demonstrations. | Number of result* demonstrations. | Meetings at demonstrations. | | Other meetings in relation to projects. | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Number assisting. | Days assistance rendered. | | | | | Number. | Attendance. | Number. | Attendance. |
| (Illustrative entry.) | | | | | | | | | | | |
| *Poultry* | 6 | 7 | 15 | 2 | 14 | 3 | 6 | 8 | 134 | 3 | 74 |
| Engineering | 3 | 1 | 3 | | 101 | 10 | 21 | 6 | 57 | 3 | 19 |
| Livestock | 3 | 4 | 30 | 6 | 26 | 5 | 10 | 1 | 10 | 9 | 187 |
| Crops- | 3 | 5 | 10 | 6 | 36 | 10 | 21 | 7 | 49 | 2 | 49 |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| Miscellaneous† | | | | | 148½ | | | | | 16 | 395 |
| Days' leave | | | | | 35 | | | | | | |
| TOTAL | 3 | 10 | 43 | 12 | 346½ | 25 | 52 | 14 | 116 | 30 | 650 |

* See definition on page 3. † Miscellaneous includes emergency and other work which can not be anticipated in advance.



## SOILS.

Report only *results* of extension activities that are supported by *records*.

38. Number of result demonstrations started or under way ---- 38
39. Number of such demonstrations completed or carried through the year ---- 39
40. Number of acres involved in these completed demonstrations ---- 40
41. Total* number of farms influenced by extension work to change practices relative to soil management (include demonstrators) ---- 41
42. Acres involved in preceding question ---- 42
43. Number of farms following advice in the use of commercial fertilizer ---- 43
44. Acres involved in preceding question ---- 44
45. Number of farms home-mixing fertilizers according to advice ---- 45
46. Tons of fertilizer so mixed ---- 46
47. Number of farms taking better care of farm manures ---- 47
48. Number of farms using lime or limestone according to advice ---- 48
49. Tons of lime or limestone so used ---- 49
50. Number of farms plowing under cover or other green manure crops for soil improvement according to advice ---- 50
51. Acres of cover and green manure crops so plowed under ---- 51

[Use space below to include other important data relating to soils.]

* This question includes the farms listed under questions 43, 45, 47, 48, and 50, but does not necessarily equal the total of these questions since not all soil practices that might be included in question 41 are listed and since one farm might adopt two or more new practices. This is also true of similar questions throughout this report.

## CEREALS.

Report only *results* of extension activities that are supported by *records*.

| Item. | (a) Corn. | (b) Wheat. | (c) Oats. | (d) Rye. | (e) Barley. | (f) Other.* Fulcrum | |
|---|---|---|---|---|---|---|---|
| 52. Number of adult result demonstrations started or under way | | 4 | | | | 1 | 52 |
| 53. Number of such adult demonstrations completed or carried through the year | | 4 | | | | 1 | 53 |
| 54. Acres involved in these completed demonstrations | | 80 | | | | 1/20 | 54 |
| 55. Increased yield per acre on demonstrations due to better practices | | 30% | | | | failure | 55 |
| 56. Number of boys' and girls' clubs | | | | | | | 56 |
| 57. Number of members enrolled — (a) Boys | | | | | | | 57 |
| 57. Number of members enrolled — (b) Girls | | | | | | | 57 |
| 58. Number of members completing — (a) Boys | | | | | | | 58 |
| 58. Number of members completing — (b) Girls | | | | | | | 58 |
| 59. Number of acres grown by club members completing | | | | | | | 59 |
| 60. Total yield of cereals grown by club members | | | | | | | 60 |
| 61. Total value of cereals grown by club members | $ | $ | $ | $ | $ | $ | 61 |
| 62. Total cost of cereals grown by club members | $ | $ | $ | $ | $ | $ | 62 |
| 63. Total† number of farms influenced by adult or junior extension work to adopt better practices relative to the growing of cereals (include demonstrators) | | 10 | | | | | 63 |
| 64. Acres of cereals involved in question 63 | | 150 | | | | | 64 |
| 65. Number of farms planting selected or improved seed | | 4 | | | | | 65 |
| 66. Number of farms growing selected or improved seed for sale | | 1 | | | | | 66 |
| 67. Number of farms testing seed for germination | | | | | | | 67 |
| 68. Number of farms treating seed grain for smut | | 4 | | | | | 68 |

[Use space below to include other important data relating to cereals.]

* Indicate crop by name. † See footnote on page 7.



## LEGUMES AND FORAGE CROPS.

Report only *results* of extension activities that are supported by *records*.

| Item. | (a) Alfalfa. | (b) Soy beans. | (c) Sweet clover. | (d) Crimson clover. | (e) Clover (red, alsike, white). | (f) Cowpeas. | |
|---|---|---|---|---|---|---|---|
| 69. Number of adult result demonstrations started or under way | 3 | | | | 1 | | 69 |
| 70. Number of such adult demonstrations completed or carried through the year | 3 | | | | 1 | | 70 |
| 71. Acres involved in these completed demonstrations | 75 | | | | 2 | | 71 |
| 72. Increased yield* per acre on demonstrations due to better practices | undetermined | | | | | | 72 |
| 73. Number of boys' and girls' clubs | | | | | | | 73 |
| 74. Number of members enrolled — (a) Boys | | | | | | | 74 |
| 74. Number of members enrolled — (b) Girls | | | | | | | 74 |
| 75. Number of members completing — (a) Boys | | | | | | | 75 |
| 75. Number of members completing — (b) Girls | | | | | | | 75 |
| 76. Number of acres grown by club members completing | | | | | | | 76 |
| 77. Total yield* of crops grown by club members | | | | | | | 77 |
| 78. Total value of crops grown by club members | $ | $ | $ | $ | $ | $ | 78 |
| 79. Total cost of crops grown by club members | $ | $ | $ | $ | $ | $ | 79 |
| 80. Total† number of farms influenced by adult or junior extension work to adopt better practices relative to these crops (include demonstrators) | 3 | | | | 1 | | 80 |
| 81. Acres involved in question 80 | 75 | | | | 2 | | 81 |
| 82. Number of farms planting selected or improved seed | 2 | | | | | | 82 |
| 83. Number of farms growing selected or improved seed for sale | | | | | | | 83 |
| 84. Number of farms inoculating for these crops | 3 | | | | | | 84 |

[Use space below to include other important data relating to legumes and forage crops.]

Acres inoculated 16

* Indicate whether yield is bushels of seed or tons of cured forage. †See footnote on page 7.

## LEGUMES AND FORAGE CROPS—Continued.

Report only *results* of extension activities that are supported by *records*.

| Item. | (g) Velvet beans. | (h) Beans. | (i) Peanuts. | (j) Lespedeza. | (k) Pastures. | (l) Other.* | |
|---|---|---|---|---|---|---|---|
| 69. Number of adult result demonstrations started or under way | | | | | | | 69 |
| 70. Number of such adult demonstrations completed or carried through the year | | | | | | | 70 |
| 71. Acres involved in these completed demonstrations | | | | | | | 71 |
| 72. Increased yield † per acre on demonstrations due to better practices | | | | | | | 72 |
| 73. Number of boys' and girls' clubs | | | | | | | 73 |
| 74. Number of members enrolled (a) Boys | | | | | | | 74 |
| 74. Number of members enrolled (b) Girls | | | | | | | 74 |
| 75. Number of members completing (a) Boys | | | | | | | 75 |
| 75. Number of members completing (b) Girls | | | | | | | 75 |
| 76. Number of acres grown by club members completing | | | | | | | 76 |
| 77. Total yield † of crops grown by club members | | | | | | | 77 |
| 78. Total value of crops grown by club members | $ | $ | $ | $ | $ | $ | 78 |
| 79. Total cost of crops grown by club members | $ | $ | $ | $ | $ | $ | 79 |
| 80. Total ‡ number of farms influenced by adult or junior extension work to adopt better practices relative to these crops (include demonstrators) | | | | | | | 80 |
| 81. Acres involved in question 80 | | | | | | | 81 |
| 82. Number of farms planting selected or improved seed | | | | | | | 82 |
| 83. Number of farms growing selected or improved seed for sale | | | | | | | 83 |
| 84. Number of farmers inoculating for these crops | | | | | | | 84 |
| [Use space below to include other important data relating to legumes and forage crops.] | | | | | | | |

* Indicate crop by name. † Indicate whether yield is bushels of seed or tons of cured forage. ‡ See footnote on page 7.



## POTATOES, COTTON, TOBACCO, AND OTHER SPECIAL CROPS.

Report only *results* of extension activities that are supported by *records*.

| Item. | (a) Irish potatoes. | (b) Sweet potatoes. | (c) Cotton. | (d) Tobacco. | (e) Other.* | |
|---|---|---|---|---|---|---|
| 85. Number of adult result demonstrations started or under way | 1 | | | | | 85 |
| 86. Number of such adult demonstrations completed or carried through the year | 1 | | | | | 86 |
| 87. Acres involved in these completed demonstrations | 1/10 | | | | | 87 |
| 88. Increased yield† per acre on demonstrations due to better practices | 7 bu. | bu. | lbs. | lbs. | | 88 |
| 89. Number of boys' and girls' clubs | | | | | | 89 |
| 90. Number of members enrolled (a) Boys | | | | | | 90 |
| 90. Number of members enrolled (b) Girls | | | | | | 90 |
| 91. Number of members completing work (a) Boys | | | | | | 91 |
| 91. Number of members completing work (b) Girls | | | | | | 91 |
| 92. Number of acres grown by club members completing | | | | | | 92 |
| 93. Total yield of crops grown by club members | bu. | bu. | lbs. | lbs. | | 93 |
| 94. Total value of crops grown by club members | $ | $ | $ | $ | $ | 94 |
| 95. Total cost of crops grown by club members | $ | $ | $ | $ | $ | 95 |
| 96. Total‡ number of farms influenced by adult or junior extension work to adopt better practices relative to the growing of these crops (include demonstrators) | 20 | | | | | 96 |
| 97. Acres of these crops involved in question 96 | 100 | | | | | 97 |
| 98. Number of farms planting improved or certified seed | 5 | | | | | 98 |
| 99. Number of farms growing improved or certified seed for sale | 1 | | | | | 99 |
| 100. Number of farms treating seed for disease | 5 | | | | | 100 |
| 101. Number of farms spraying or dusting for diseases and insects | | | | | | 101 |
| 102. Number of storage houses constructed this year | | | | | | 102 |
| 103. Total capacity of these storage houses | | | | | | 103 |
| 104. Number of crop improvement associations organized during past year at suggestion of extension service | | | | | | 104 |
| 105. Membership in above associations | | | | | | 105 |
| [Use space below to include other important data relating to potatoes, cotton, tobacco, and other special crops.] | | | | | | |

*Indicate crop by name. †Report yield of cotton in pounds of seed cotton. ‡See footnote on page 7.

## HORTICULTURE.

Report only *results* of extension activities that are supported by *records*.

| Item. | (a) Tree fruits. | (b) Bush and small fruits. | (c) Grapes. | (d) Market gardening, truck, and canning crops. | (e) Vegetable gardens. | (f) Flowers, shrubs, and home grounds. | |
|---|---|---|---|---|---|---|---|
| 106. Number of adult result demonstrations started or under way | 12 | | | | | | 106 |
| 107. Number of such adult demonstrations completed or carried through the year | 12 | | | | | | 107 |
| 108. Acres involved in these completed demonstrations | 31 | | | | | | 108 |
| 109. Increased yield per acre on demonstrations due to better practices | ? bu. | qts. | lbs. | bu. | bu. | | 109 |
| 110. Number of boys' and girls' clubs | | | | | | | 110 |
| 111. Number members enrolled (a) Boys | | | | | | | 111 |
| 111. Number members enrolled (b) Girls | | | | | | | 111 |
| 112. Number of members completing (a) Boys | | | | | | | 112 |
| 112. Number of members completing (b) Girls | | | | | | | 112 |
| 113. Number of acres grown by club members completing | | | | | | | 113 |
| 114. Total yield of crops grown by club members | bu. | qts. | lbs. | bu. | bu. | | 114 |
| 115. Total value of crops grown by club members | $ | $ | $ | $ | $ | $ | 115 |
| 116. Total cost of crops grown by club members | $ | $ | $ | $ | $ | $ | 116 |
| 117. Total* number of farms or homes influenced by adult or junior extension work to change practices relative to these crops (include demonstrators) | 12 | | | | | | 117 |
| 118. Acres involved in question 117 | 31 | | | | | | 118 |
| 119. Number of farms planting selected or improved stock or seed | 1 | | | | | | 119 |
| 120. Number of farms pruning | 12 | | | | | | 120 |
| 121. Number of farms thinning | | | | | | | 121 |
| 122. Number of farms spraying or otherwise treating for diseases and insect pests | 12 | | | | | | 122 |
| 123. Number of farms following other improved cultural practices | | | | | | | 123 |

[Use space below to include other important data relating to horticulture.]

* See footnote on page 7.



[Use space below to include other important data relating to horticulture.]

## FORESTRY.

Report only the *results* of extension activities that are supported by *records*.

124. Number of adult demonstrations started or under way ---- 124
125. Number of adult demonstrations completed or carried through the year ---- 125
126. Number of acres included in these completed demonstrations ---- 126
127. Number of boys' and girls' clubs ---- 127
128. Number of members enrolled (a) Boys ---- 128
128. Number of members enrolled (b) Girls ---- 128
129. Number of members completing (a) Boys ---- 129
129. Number of members completing (b) Girls ---- 129
130. Number of acres handled by club members ---- 130
131. Total* number of farms influenced by adult or junior extension work to adopt better practices relative to forestry (include demonstrators) ---- 131
132. Acres involved in question 131 ---- 132
133. Number of forest or wood-lot plantings made ---- 133
134. Acres involved in question 133 ---- 134
135. Number of farms assisted in wood-lot management ---- 135
136. Acres involved in question 135 ---- 136
137. Number of farms planting wind-breaks ---- 137

[Use space below to include other important data relating to forestry.]

* See footnote on page 7.

## LIVE STOCK.

Report only *results* of extension activities that are supported by *records*.

| Item. | (a) Horses and mules. | (b) Dairy cattle. | (c) Beef cattle. | (d) Sheep. | (e) Swine. | (f) Poultry. | |
|---|---|---|---|---|---|---|---|
| 138. Number of adult result demonstrations started or under way | | 1 | 7 | | 2 | | 138 |
| 139. Number of such adult demonstrations completed or carried through the year | | | 7 | | 2 | | 139 |
| 140. Number of animals involved in these completed demonstrations | | 65 | 2702 | | 90 | | 140 |
| 141. Total profit or saving on demonstrations resulting from better practices | | | $1500 est | | $1000 est | | 141 |
| 142. Number of boys' and girls' clubs | | | | | | | 142 |
| 143. Number of members enrolled (a) Boys | | | | | | | 143 |
| 143. Number of members enrolled (b) Girls | | | | | | | 143 |
| 144. Number of members completing (a) Boys | | | | | | | 144 |
| 144. Number of members completing (b) Girls | | | | | | | 144 |
| 145. Number of animals involved in club work completed | | | | | | | 145 |
| 146. Total value of animals raised by club members | $ | $ | $ | $ | $ | $ | 146 |
| 147. Total value of products produced by club members | $ | $ | $ | $ | $ | $ | 147 |
| 148. Total cost of such animals and products | $ | $ | $ | $ | $ | $ | 148 |
| 149. Total* number of farms influenced by adult or junior extension work to adopt better practices, relative to live-stock production (include demonstrators) | | 18 | 7 | | 2 | | 149 |
| 150. Number of animals involved in question 149 | | 240 | 2702 | | 90 | | 150 |
| 151. Number of farms assisted in securing pure-bred sires | | 3 | 2 | | 1 | | 151 |
| 152. Number of pure-bred sires secured | | 3 | 9 | | 1 | | 152 |
| 153. Number of farms assisted in securing pure-bred females | | 18 | | | | | 153 |
| 154. Number of pure-bred females secured | | 65 | | | | | 154 |
| 155. Number of farms securing pure-bred animals for the first time | | 2 | | | | | 155 |
| 156. Number of farms culling flocks or herds | | 5 | | | | | 156 |
| 157. Number of stallion, bull, ram, or boar circles, clubs, or associations organized during the year | | | | | | | 157 |
| 158. Number of members in preceding circles, clubs, etc. | | | | | | | 158 |

* See footnote on page 7.



## LIVE STOCK—Continued.

Report only *results* of extension activities that are supported by *records*.

| Item. | (a) Horses and mules. | (b) Dairy cattle. | (c) Beef cattle. | (d) Sheep. | (e) Swine. | (f) Poultry. | |
|---|---|---|---|---|---|---|---|
| 159. Number of breed associations or clubs organized during the year | | | | | | | 159 |
| 160. Number of members in these associations or clubs | | | | | | | 160 |
| 161. Number of cow-testing associations organized or reorganized during the year | | | | | | | 161 |
| 162. Number of members in these associations | | | | | | | 162 |
| 163. Number of farms not in associations testing cows for production | | | | | | | 163 |
| 164. Number of cows under test by such associations and individual farms | | | | | | | 164 |
| 165. Number of homes assisted in the making of butter and cheese | | | | | | | 165 |
| 166. Number of farmers feeding better balanced rations | | | | | | | 166 |
| 167. Number of farmers controlling insect pests | | | | | | | 167 |
| 168. Number of farmers testing animals for tuberculosis | | | | | | | 168 |
| 169. Number of animals tested | | | | | | | 169 |
| 170. Number of herds accredited this year for the first time | | | | | | | 170 |
| 171. Number of farmers vaccinating animals for blackleg | | | 4 | | | | 171 |
| 172. Number of animals vaccinated | | | 2650 | | | | 172 |
| 173. Number of farmers vaccinating animals for cholera | | | | | 2 | | 173 |
| 174. Number of animals vaccinated | | | | | 90 | | 174 |
| 175. Number of farmers controlling other live-stock diseases | | | | | | | 175 |
| 176. Number of animals involved in question 175 | | | | | | | 176 |

[Use space below to include other important data relating to live stock.]

## RURAL ENGINEERING.

Report only *results* of extension activities that are supported by *records*.

| | | |
|---|---|---|
| 177. Number of result demonstrations started or under way | 21 | 177 |
| 178. Number of such demonstrations completed or carried through the year | 21 | 178 |
| 179. Acres or other units involved in these completed demonstrations | 225A | 179 |
| 180. Total profit or saving on demonstrations resulting from better practices | | 180 |
| 181. Number of farms installing drainage systems | 1 | 181 |
| 182. Acres drained | 5 | 182 |
| 183. Number of farms installing irrigation systems | 1 | 183 |
| 184. Acres irrigated | 30 | 184 |
| 185. Number of farms constructing terraces or soil dams | | 185 |
| 186. Acres on which soil erosion was so prevented | | 186 |
| 187. Number of dwellings constructed according to plans furnished | | 187 |
| 188. Number of dwellings remodeled according to plans furnished | | 188 |
| 189. Number of sewage disposal systems installed | | 189 |
| 190. Number of water systems installed | | 190 |
| 191. Number of heating systems installed | | 191 |
| 192. Number of lighting systems installed | 1 | 192 |
| 193. Number of farms on which buildings other than dwellings were constructed or remodeled according to plans furnished | 2 | 193 |
| 194. Number of buildings involved in preceding question — (*a*) Barns | 2 | 194 |
| (*b*) Hog houses | | |
| (*c*) Poultry houses | | |
| (*d*) Silos | | |
| (*e*) Other | | |
| 195. Number of farms assisted in the care and operation of machinery (tractors, power sprayers, milking machines, etc.) | 2 | 195 |
| 196. Number of farms clearing land | 3 | 196 |
| 197. Acres of land so cleared | 60 | 197 |

[Use space below to include other important data relating to rural engineering.]

Water power plants completed or under way 3
Pumping plants for irrigation " " " " 4
Springs developed 2
Radio receivers - built + installed on farms 4



## RODENTS AND MISCELLANEOUS* INSECT AND ANIMAL PESTS.

Report only *results* of extension activities that are supported by *records*.

| Item. | Rodents. | Other animal pests.† | Grass-hoppers. | Other insects.† | |
|---|---|---|---|---|---|
| | | | | Alfalfa weevil | |
| 198. Number of result demonstrations started or under way | 1 | | | 5 | 198 |
| 199. Number of such demonstrations completed or carried through the year | 1 | | | 5 | 199 |
| 200. Number of acres in these completed demonstrations | 10 | | | 75 | 200 |
| 201. Total saving or profit on demonstrations resulting from better practices | $ | $ | $ | $ 500 | 201 |
| 202. Total number of farms adopting control measures | 1 | | | 5 | 202 |
| 203. Number of acres involved | 10 | | | 75 | 203 |
| 204. Number of pounds of poison bait used | 102 | | | 150 | 204 |
| [Use space below to include other important data relating to rodents and miscellaneous insect and animal pests.] | | | | | |

## AGRICULTURAL ECONOMICS.

Report only *results* of extension activities that are supported by *records*.

FARM MANAGEMENT.

| | | |
|---|---|---|
| 205. Number of farm account books distributed | 12 | 205 |
| 206. Number of farmers keeping records in such account books throughout the year | 4 | 206 |
| 207. Number of farmers assisted in summarizing and interpreting their accounts | | 207 |
| 208. Number of farmers making changes in their business as result of keeping accounts | | 208 |
| 209. Number of other farmers adopting cropping, live-stock, or complete farming systems according to recommendations | 4 | 209 |
| 210. Number of boys' and girls' farm account clubs | | 210 |
| 211. Number of members enrolled — (*a*) Boys | | 211 |
| (*b*) Girls | | |
| 212. Number of members completing — (*a*) Boys | | 212 |
| (*b*) Girls | | |
| 213. Number of farmers advised relative to leases | | 213 |
| 214. Number of farm management and farm account schools held | 2 | 214 |
| 215. Number of farmers assisted in keeping cost of production records | | 215 |

LABOR.

| | | |
|---|---|---|
| 216. Number of farmers making better use of labor | | 216 |
| 217. Number of farmers securing tractors, sprayers, milking machines, or other machinery to economize labor | 3 | 217 |

* Do not include work reported under "Crop" and "Live Stock" headings.

† Indicate by name.

## AGRICULTURAL ECONOMICS—Continued.

Report only *results* of extension activities that are supported by *records*.

CREDIT.

218. Number of farm loan or other credit associations organized with assistance of extension service ..... 218

219. Membership in above associations ..... 219

220. Number of other farmers assisted in securing credit ..... 220

MARKETING.

221. List below the cooperative marketing associations organized during the year upon suggestion or with counsel of the extension service. 221

| Name of association. | Number of members. | Supplies and products handled. | Supplies purchased. | | Products sold. | |
|---|---|---|---|---|---|---|
| | | | Value. | Saving. | Value. | Profit. |
| | | | $ | $ | $ | $ |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| TOTAL | | | | | | |

222. Number of other cooperative marketing associations in the county with which the extension service counseled or advised ..... 222

223. Number of members in such associations ..... 223

224. Total purchases of supplies by associations included in question 223 { (a) Value ..... $ ; (b) Saving ..... $ } 224

225. Total sales of products by associations included in question 223 { (a) Value ..... $ ; (b) Profit ..... $ } 225

226. Number of farmers and housewives assisted by extension service in buying and selling through other channels than cooperative associations ..... 226

227. Total purchases of supplies by farmers and housewives included in question 226 { (a) Value ..... $ ; (b) Saving ..... $ } 227

228. Total sales of products by farmers and housewives included in question 226 { (a) Value ..... $ ; (b) Profit ..... $ } 228

229. Number of farms grading or standardizing products ..... 229

[Use space below to include other important information relating to agricultural economics.]



## FOODS AND NUTRITION.

Report only *results* of extension activities that are supported by *records*.

FOOD SELECTION.

230. Number of result demonstrations started or under way ..... 230

231. Number of such demonstrations completed or carried through the year ..... 231

232. Total* number of homes influenced by extension service to serve better selected food (include demonstrators) ..... 232

233. Number of homes using more fruits in the diet ..... 233

234. Number of homes using more green vegetables in the diet ..... 234

235. Number of homes using more milk and other dairy products in the diet ..... 235

236. Number of homes using more meat and fish in the diet ..... 236

237. Number of homes using more eggs in the diet ..... 237

238. Number of homes using more unrefined cereal products in the diet ..... 238

[Use space below to include other important data relating to food selection.]

FOOD PREPARATION.

| Item. | (a) Bread making. | (b) Meal preparation. | (c) School lunches. | (d) Other.† | |
|---|---|---|---|---|---|
| 239. Number of adult result demonstrations started or under way | | | | | 239 |
| 240. Number of such adult demonstrations completed or carried through the year | | | | | 240 |
| 241. Number of boys and girls clubs | | | | | 241 |
| 242. Number of members enrolled { (a) Boys ; (b) Girls } | | | | | 242 |
| 243. Number of members completing { (a) Boys ; (b) Girls } | | | | | 243 |
| 244. Amount of food prepared by club members completing: | | | | | 244 |
| (a) Number of meals | | | | | |
| (b) Number of loaves yeast bread | | | | | |
| (c) Number of dozen quick breads | | | | | |
| (d) Number of other foods | | | | | |
| 245. Number of homes or schools influenced by adult or junior extension work to adopt better practices relative to food preparation (include demonstrators) | | | | | 245 |
| 246. Number of individuals involved in question 245 | | | | | 246 |

[Use space below to include other important data relating to food preparation.]

* See note on page 7. † Indicate by name.

## FOODS AND NUTRITION—Continued.

Report only *results* of extension activities that are supported by *records*.

CHILD FEEDING AND CARE.

247. Number of result demonstrations started or under way ---- 247

248. Number of such demonstrations completed or carried through the year ---- 248

249. Number of children involved in these demonstrations ---- 249

250. Number* of homes influenced by extension service to change practices in child feeding and care (include demonstrators) ---- 250

251. Number of children involved in question 250 ---- 251

252. Number of homes assisted in correcting undernourished children ---- 252

253. Number of children involved ---- 253

[Use space below to include other important data relating to child feeding and care.]

FOOD PRESERVATION.

| Item. | (a) Fruits. | (b) Vegetables. | (c) Meats and fish. | (d) Other.† | |
|---|---|---|---|---|---|
| 254. Number of adult result demonstrations started or under way | | | | | 254 |
| 255. Number of such adult demonstrations completed or carried through the year | | | | | 255 |
| 256. Total amount‡ preserved by adults (a) Quarts canned | | | | | 256 |
| (b) Pounds dried | | | | | |
| (c) Amount brined and cured | ---- qts. | ---- qts. | ---- lbs. | | |
| (d) Other | | | | | |
| 257. Number of boys' and girls' clubs | | | | | 257 |
| 258. Number of members enrolled (a) Boys | | | | | 258 |
| (b) Girls | | | | | |
| 259. Number of members completing (a) Boys | | | | | 259 |
| (b) Girls | | | | | |
| 260. Total amount‡ preserved by club members (a) Quarts canned | | | | | 260 |
| (b) Pounds dried | | | | | |
| (c) Amount brined and cured | ---- qts. | ---- qts. | ---- lbs. | | |
| (d) Other | | | | | |
| 261. Total value of preserved products prepared by club members | $---- | $---- | $---- | $---- | 261 |
| 262. Total cost of preserved products prepared by club members | $---- | $---- | $---- | $---- | 262 |
| 263. Total* number of homes influenced by adult or junior extension work to adopt better practices relative to food preservation (include demonstrators) | | | | | 263 |

* See footnote on page 7. † Indicate by name. ‡ Amount refers to finished product.



FOOD PRESERVATION—continued.

| Item. | (a) Fruits. | (b) Vegetables. | (c) Meats and fish. | (d) Other.* | |
|---|---|---|---|---|---|
| 264. Number of homes using better methods of canning | | | | | 264 |
| 265. Number of homes using better methods of drying | | | | | 265 |
| 266. Number of homes using better methods of brining or curing | | | | | 266 |

[Use space below to list principal canning products standardized for market and the number of containers of each packed.]

## CLOTHING.

Report only *results* of extension activities that are supported by *records*.

| Item. | Clothing. Selection. | Clothing. Construction and remodeling. | Clothing. Renovation. | Millinery. | Other.* | |
|---|---|---|---|---|---|---|
| 267. Number of adult result demonstrations started or under way | | | | | | 267 |
| 268. Number of such adult demonstrations completed or carried through the year | | | | | | 268 |
| 269. Total saving on demonstrations resulting from better practices | $---- | $---- | $---- | $---- | $---- | 269 |
| 270. Number of boys' and girls' clubs | | | | | | 270 |
| 271. Number of members enrolled (a) Boys | | | | | | 271 |
| (b) Girls | | | | | | |
| 272. Number of members completing (a) Boys | | | | | | 272 |
| (b) Girls | | | | | | |
| 273. Number of garments and hats made by club members completing | | | | | | 273 |
| 274. Number of other articles made by club members completing | | | | | | 274 |
| 275. Total value of the garments, hats, and other articles made by club members | $---- | $---- | $---- | $---- | $---- | 275 |
| 276. Total cost of the garments, hats, and other articles made by club members | $---- | $---- | $---- | $---- | $---- | 276 |
| 277. Number† of homes influenced by adult or junior extension work to improve practices relative to clothing (include demonstrators) | | | | | | 277 |
| 278. Number of garments and hats involved in question 277 | | | | | | 278 |
| 279. Number of other articles involved in question 277 | | | | | | 279 |
| 280. Number of dress forms made according to instructions | | | | | | 280 |

[Use space below and on top of page 22 to include other important data relating to clothing and millinery.]

*Indicate by name. †See footnote on page 7.

[Use space below to include other important data relating to clothing.]

## HOME HEALTH AND SANITATION.

Report only *results* of extension activities that are supported by *records*.

281. Number of result demonstrations started or under way ---- 281
282. Number of such demonstrations completed or carried through the year ---- 282
283. Number of homes given instruction in home nursing and first aid ---- 283
284. Number of homes installing home medicine chests ---- 284
285. Total* number of homes influenced by extension service to adopt better sanitary practices ---- 285
286. Number of homes installing sanitary closets or outhouses ---- 286
287. Number of homes screened ---- 287
288. Number of homes following other methods of controlling flies, mosquitoes, and other insects ---- 288

[Use space below to include other important data relating to home health and sanitation.]

*See footnote on page 7.



## HOUSEHOLD MANAGEMENT AND HOME FURNISHINGS.

Report only *results* of extension activities that are supported by *records*.

| Item. | (a) Budget and accounts. | (b) Equipment. | (c) Kitchen arrangement. | (d) Work planning. | (e) Furnishing and decorating.* | |
|---|---|---|---|---|---|---|
| 289. Number of adult result demonstrations started or under way | | | | | | 289 |
| 290. Number of such adult demonstrations completed or carried through the year | | | | | | 290 |
| 291. Number of boys and girls clubs | | | | | | 291 |
| 292. Number members enrolled—(a) Boys | | | | | | 292 |
| (b) Girls | | | | | | |
| 293. Number members completing—(a) Boys | | | | | | 293 |
| (b) Girls | | | | | | |
| 294. Number of articles of household furnishings made or refinished by club members completing | | | | | | 294 |
| 295. Total value of articles made or refinished by club members | $ | $ | $ | $ | $ | 295 |
| 296. Total cost of articles made or refinished by club members | $ | $ | $ | $ | $ | 296 |

297. Total† number of homes influenced by adult and junior extension work to change practices relative to home management and furnishings (include demonstrators) ---- 297
298. Number of homes keeping accounts ---- 298
299. Number of homes making changes in ways of living as a result of expense records ---- 299
300. Number of kitchens rearranged ---- 300
301. Number of homes installing new equipment other than heat, light, water, and sewage systems (see Rural Engineering) ---- 301
302. New equipment involved in question 301: 302

(a) Hand-washing machines ----
(b) Power-washing machines ----
(c) Fireless cookers ----
(d) Pressure cookers ----
(e) Hand sweepers ----
(f) Power vacuum cleaners ----
(g) Kitchen cabinets ----
(h) Wheel trays ----
(i) Iceless refrigerators ----
(j) ----
(k) ----
(l) ----

303. Number of homes repairing and refinishing furniture ---- 303
304. Number of homes redecorating or refurnishing one or more rooms ---- 304

[Use space below to include other important data relating to household management and home furnishings.]

*Includes "Own-your-own-room" clubs. †See footnote on page 7.

## MISCELLANEOUS.

Report only *results* of extension activities that are supported by *records*.

Use this page to include work on any other agricultural and home economics project not included in the preceding pages, such as beekeeping, basket making, and similar work, i. e., any other information that can be reported statistically and that will help to give a complete account of the year's work.

| Item. | (a)* Rural Engineering | (b)* Livestock | (c)* Crops - | (d)* Pests - | (e)* | |
|---|---|---|---|---|---|---|
| 305. Number of adult result demonstrations started or under way | 21 | 10 | 21 | 6 | | 305 |
| 306. Number of such demonstrations completed or carried through the year | 21 | 9 | 21 | 6 | | 306 |
| 307. Number of units in these completed demonstrations | 225 A | 2857 | 188 A | 85A | | 307 |
| 308. Increase per unit on demonstrations due to better practices | | | 30% | | | 308 |
| 309. Number of boys' and girls' clubs | | | | | | 309 |
| 310. Number of members enrolled — (a) Boys | | | | | | 310 |
| 310. Number of members enrolled — (b) Girls | | | | | | 310 |
| 311. Number of members completing — (a) Boys | | | | | | 311 |
| 311. Number of members completing — (b) Girls | | | | | | 311 |
| 312. Number of units involved in club work completed | | | | | | 312 |
| 313. Total value of products grown or made by club members | $ | $ | $ | $ | $ | 313 |
| 314. Total cost of products grown or made by club members | $ | $ | $ | $ | $ | 314 |
| 315. Number of farms or homes influenced by adult or junior extension work to adopt better practices | 21 | 21 | 45 | 6 | | 315 |
| 316. Total units involved in question 315 | | 3500 | 356 | 500 | | 316 |

[Use space below to include other important data relating to miscellaneous work.]

* Indicate name over column.

GOVERNMENT PRINTING OFFICE

UNIVERSITY OF NEVADA

AGRICULTURAL EXTENSION DIVISION

C. W Creel, Director

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WHITE PINE COUNTY

COUNTY EXTENSION AGENT

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# ANNUAL REPORT

-1923-

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Submitted by:

Thos. R. King.

COUNTY EXTENSION AGENT.
Ely, Nevada.

Date mailed Nov. 23, 1923.

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## STATUS OF COUNTY EXTENSION ORGANIZATION

(1) FORM.

The county Farm Bureaus are the medium thru which the Agricultural Extension Service accomplishes its field work. The county Farm Bureaus are the cooperating agency in both administration and finance. Theirs is the choice of the kind of work to be carried on and also of setting many of the details, all of which, however, must meet with the approval of the University Extension director. There is seldom any conflict on this point as the project field of the service is very wide. The only limitations where the farmers desire unobtainable aid is in the matter of business transactions. Commercilization of the Extension Service agents activities in Nevada is impossible due to the peculiar form of organization. The Extension Service is supported for the most part by a general tax levied on all property in the county where the Farm Bureau is organized. The paying of this tax for the benefit of the farmers by merchants and other businesses gives rise to protest immediately that a county agent attempts the organization of any buying or selling organization that in way might interfere with the business of the merchant tax payers. Federal funds are inadequate for the prosecution of Extension service in Nevada without local aid. The farm population is so sparse and tax rolls so low that it is also unable to carry on or support county agent work unaided. The aforementioned cooperative plan is therefore the only available means at the present time for the handling of extension work.

(2) FUNCTION OF LOCAL PEOPLE IN DEVELOPING PROGRAM.

According to the plan or organization the county board of directors of the Farm Bureau should meet with the Extension service employees and together develop a program of work for the county to be pursued during the coming year. The community centers should in turn follow this same plan. All work should be carried on between the extension agent and organized groups which in turn have their subcommittees. Personal service is not supposed to enter in the work. This plan, which is apparently theretically correct, fails to operate successfully in practice for two main reasons, viz.:-The county and community boards are lacking in initiative and imagination and cannot see the problems which would aid them. This may be somewhat

due to lack of knowledge of the various potential benefits to be derived from any particular line of work. Local practice is for the agent to study the most apparent needs and then start a campaign of education along the lines he believes best. Much propoganda is spread and final results are the selection of a portion of the things suggested by the agent. Even then a large proportion of the chosen projects die while still in the verbal stage.

(3) OTHER ORGANIZATIONS.

White Pine county supports only two organizations other than the Farm Bureau. These are the Eastern Nevada Livestock Association and the Forest Service. Cooperation between these two agencies and the county agent has been excellent during the year past. Much work has been done in the study of range problems and presenting these things to one organization from the other. Effective liaison has resulted in at least a better understanding between the two organizations and some material benefit to both.

Reference - Range Appraisal of the National Forests.

INTRODUCTORY

The Eastern Nevada Livestock Association has been advised of the Range Appraisal of the grazing lands of the National Forests and has surmised that said appraisal may in some manner effect the grazing fees thereon.

In view of the fact that the livestock industry of this locality, like that of all the western states, is in a precarious financial condition it is deemed advisable to present beforehand, to the proper authorities, a few reasons showing why, in our opinion, range fees should be lowered as a result of the aforementioned appraisal of the National Forests grazing lands.

---

Specific Data of Grazing Costs
On Nevada National Forest and Adjacent Public Domain and Privately Owned Lands.

---

Fifty one thousand (51,000) sheep are permitted on the Nevada National Forest. Thirty nine and one half

per cent (39½%) of this number or twenty thousand, two hundred and twenty (20,220) are involved in the subsequent figures relating to sheep grazing on the Nevada National Forest.

Eighty two thousand, seven hundred and twenty seven, (82,727) sheep are owned in this locality by permittees of the Nevada National Forest. Forty three and one half per cent (43½%) of this number or forty thousand (40,000) are involved in the subsequent figures of comparison.

Accurate records have been kept on all sheep considered in this report, which means that every band of sheep has been counted each month, accurate record has been kept of the losses from all causes, sheep used for meat have not been charged to losses, grazing days used have been obtained by computation of each band each thirty days, privately owned lands on and off the Forest have been checked by sections and the costs summed and averaged to arrive at the values used.

Interest rates vary with localities. In this one the average exceeds nine per cent with considerable money loaned at twelve per cent. An interest rate of eight per cent (8%) is used in this report as fair to all concerned. The entire yearly interest is charged against the lands for the period of the actual grazing days for the reason that these lands are used and are a benefit only during the grazing period.

The grazing fee as charged for sheep on the Nevada National Forest of ten cents (10¢) for a four months or one hundred and twenty day period, amounts to $ .000838 per sheep day. The figure of $ .000940 per sheep day, as used in this report, is based on the actual cost per sheep day to the permittee. This is due to a shortage in the grazing days received as compared with the grazing days for which fees have been paid. Argument will no doubt arise to the effect that the numbers permitted and the period are set and are available for the use of the permittee and the fault is therefore his if advantage is not taken of these facts. Such, however, is not the case as weather conditions control the time that the sheep are brought from the winter ranges and shorn and placed on the Forests. If, as stated by the Forest Service, the feed is there to maintain a definite number of sheep for a definite period, and payment is demanded for this from the permittee, we believe that an adjustment in numbers

of date for removal from the Forest should be made and thereby prevent or eliminate the excess cost per grazing sheep day over the regulation fee. Of the twenty thousand two hundred and twenty sheep permitted on the Forest, in these figures the regulation fee is paid on seventeen thousand two hundred and twenty (17,220) and a free use permit granted for three thousand (3000) head under Reg. G-7 in consideration of eight thousand two hundred and forty acres of privately owned land on the Forest. This privately owned land represents an investment of $39,270 or $13.09 per sheep grazed under the free use permit. It is believed that additional rights should be granted for free use permits under such a heavy investment, particularly as a large portion of the Forest grazing is dependent upon the water on these privately owned lands. The fees paid for the 17,220 sheep for the 120 day period entitle the permittee to 2,066,400 sheep grazing days. As shown in subsequent tabulation only 1,820,899 grazing days were received or a shortage of 235,511 grazing days for which the regulation fee was paid. The free use permit entitles the permittee to an additional 360,000 grazing days which makes the total shortage in grazing days 595,511. This is twenty four and one half per cent (24½%) shortage on the total to which the permittee is entitled, and equivalent to four thousand and nine hundred sixty two (4,962) sheep for the full 120 days period. It is not intended to place the responsibility for this fact on the Forest Service. It is rather the fault of the permittee in failing to realize the true status of affairs and take tne necessary action to obtain an adjudication of use. These facts are not brought forth to plead the cause of a purely local condition but to bring to the attention of the Forest Service what we believe, from the best information obtainable, to be a condition prevalent on many of the National Forests.

The differential of $ .00252 per sheep day between grazing costs on the White Pine Division of the Nevada National Forest multiplied by the grazing days on the Forest amounts to $1405.09. The differential of $ .001357 per sheep day between grazing costs on the Ward and Schell Creek Divisions of the Nevada National Forest and the Horse Camp District where privately owned lands control, multiplied by the grazing days amounts to $1727.88. This sum is $3132.97, which indicates the excess costs on the Forest for an equal number of grazing days on the public domain. This sum capitalized at eight per cent is $39,162.00, which verifies the previous statement that no benefits what-

soever are accruing to the owners of the private lands valued at $39,270.00 on the Nevada National Forests.

The example of the cost of grazing cattle on Steptoe Pastures in this report was made on twelve per cent of the total cattle owned by permittees of the Nevada National Forest. Detailed and accurate records were available for this calculation, the same as in the examples for sheep grazing. The cattle costs have been reduced to a sheep basis using the Forest Service ratio of one to four.

## EXAMPLES OF GRAZING COSTS.

| | | |
|---|---|---|
| No. of sheep for which reg. grazing fee is paid for 120 day period---------- | 17,220 | |
| Resultant sheep days grazing to which permittee is entitled---------- | 2,066,400 | |
| Grazing days received on the Forest---------- | 1,830,899 | |
| Sheep day rate on basis of grazing received----$ | | .000940 |
| Free use permit under Reg. G-7---------- | 3,000 | |
| Grazing days to which permittee is entitled under free use G-7---------- | 260,000 | |
| Total sheep grazing days to which permittee is entitled (Fee paid plus free use, G-7)--------- | 2,426,400 | |
| Grazing days received---------- | 1,830,899 | |
| Sheep grazing days to which permittee is entitled but which are not received---------- | 595,511 | |
| Sheep equivalent for 120 day period---------- | 4,962 | |

---

## WHITE PINE DIVISION, Forest Grazing.

| | | |
|---|---|---|
| Acres privately owned land---------- | 5,000 | |
| Value----------$ | 20,000 | |
| Value of improvements---------- | 1,810 | |
| Total value----------$ | 21,810 | |
| Interest on value at 8%----------$ | 1,744.80 | |
| Sheep days grazing received---------- | 557,577 | |
| Investment fee per sheep day----------$ | | .003127 |
| Grazing fee per sheep day----------$ | | .000940 |
| Interest and grazing fee total----------$ | | .004067 |

PUBLIC DOMAIN, Grazing controlled by private lands.

| | | |
|---|---|---|
| Acres owned privately | | 2,840 |
| Value | $ | 11,360 |
| Value of improvements | $ | 5,400 |
| Total value | $ | 16,760 |
| Interest on total value at 8% | $ | 1,340.80 |
| Sheep grazing days received | | 866,564 |
| Investment interest cost per sheep day | $ | .001547 |

---

Comparison.

| | | |
|---|---|---|
| Sheep day cost on Forest | $ | .004067 |
| Sheep day cost on public domain | $ | .001547 |
| Excess cost per sheep day for Forest grazing | $ | .002520 |

In the preceeding Comparison a district of the public domain was taken which grazed approximately an equal number of sheep as the Forest. The difference in grazing days is due to the longer grazing period on the public domain. In this comparison, as in the one which follows, argument will no doubt present itself to the effect that these are not the only sheep grazed on the Forest and that for the balance of the sheep there is not nearly so large an investment in privately owned lands and improvements. This is more than balanced by the fact that the public domain considered also carries a large number of sheep besides those considered and that there is a smaller ratio of privately owned land for these sheep than for the balance on the Forest.

---

WARD & SCHELL CREEK DIVISIONS. Forest grazing.

| | | |
|---|---|---|
| Acres privately owned | | 3,240 |
| Value | $ | 12,960 |
| Value of improvements | $ | 4,500 |
| Total value | $ | 17,460 |
| Interest on total value at 8% | $ | 1,396.80 |
| Sheep days grazing received | | 1,273,312 |
| Investment interest cost per sheep day | $ | .001097 |
| Grazing fee per sheep day | $ | .000940 |
| Interest and grazing fee total | $ | .002017 |

---

PUBLIC DOMAIN, Grazing controlled by private lands.

| | | |
|---|---|---|
| Acres privately owned | | 2,760 |
| Value | $ | 11,040 |
| Value of improvements | $ | 7,370 |
| Total value | $ | 18,410 |
| Interest on value at 8% | $ | 1,472.80 |
| Sheep grazing days received | | 2,231,194 |
| Investment interest cost per sheep day | $ | .000660 |

Comparison

| | |
|---|---|
| Sheep day cost on forest----------$ | .002017 |
| Sheep day cost on public domain----------$ | .000660 |
| Excess cost per sheep day for grazing----------$ | .001357 |

---

GRAZING ON PRIVATELY OWNED LAND.

Steptoe Pastures. Under fence, partly irrigated.

| | | |
|---|---|---|
| Acres in pasture---------- | 4,920 | |
| Value with improvements----------$ | 34,440 | |
| Interest on value at 8%----------$ | 2,755.20 | |
| Cattle grazing days---------- | 283,840 | |
| Investment interest cost per cow grazing day-$ | | .00973 |
| Equivalent cost per sheep grazing day, ratio 4-1 | | .0024325 |

The herding charge for the sheep grazed on and off the forest in the previous examples has been the same. In the herding of the cattle in the Steptoe Pastures there is a marked reduction in costs and it should be credited to the pastures in comparing them with the cost of Forest grazing.

Accurate records are used in computing the herding costs in the following comparisons:

WHITE PINE FOREST, Grazing.

| | |
|---|---|
| Interest and fee total----------$ | .004067 |
| Herding cost per sheep day----------$ | .006166 |
| Total per sheep day----------$ | .010233 |

---

STEPTOE PASTURES.

| | |
|---|---|
| Interest cost per sheep day----------$ | .0024325 |
| Herding cost per sheep day----------$ | .0011740 |
| Total----------$ | .0036065 |

---

This indicates that the cost per sheep day on the White Pine Forest is 2.84 times the cost on Steptoe Pastures.

| | |
|---|---|
| Forsest cost, herding and fee per sheep day--$ | .007106 |
| which sum does not include any interest. | |
| Steptoe Pastures total cost per sheep day----$ | .003606 |

Which shows the White Pine Forest cost per sheep day to be practically twice that on Steptoe Pastures even though interest on privately owned lands be not included.

---

| | |
|---|---|
| Ward & Schell Cr. Forest costs per sheep day including interest, fee and herding----------$ | .008183 |
| Steptoe Pastures total cost per sheep day----$ | .003606 |

This again indicates a markedly lower cost per sheep day for Steptoe Pastures, though the comparison is more favorable to the Forest than the White Pine Division costs.


AREAS USED IN GRAZING COST COMPARISONS

No. 1. White Pine Division, Nev. Nat. Forest.

No. 1-A. Public Domain used in comparison.

No. 2. Ward & Schell Cr. Division, Nev. Nat. Forest.

No. 2-A. Public Domain used in comparison.

No. 3. Steptoe Pastures.

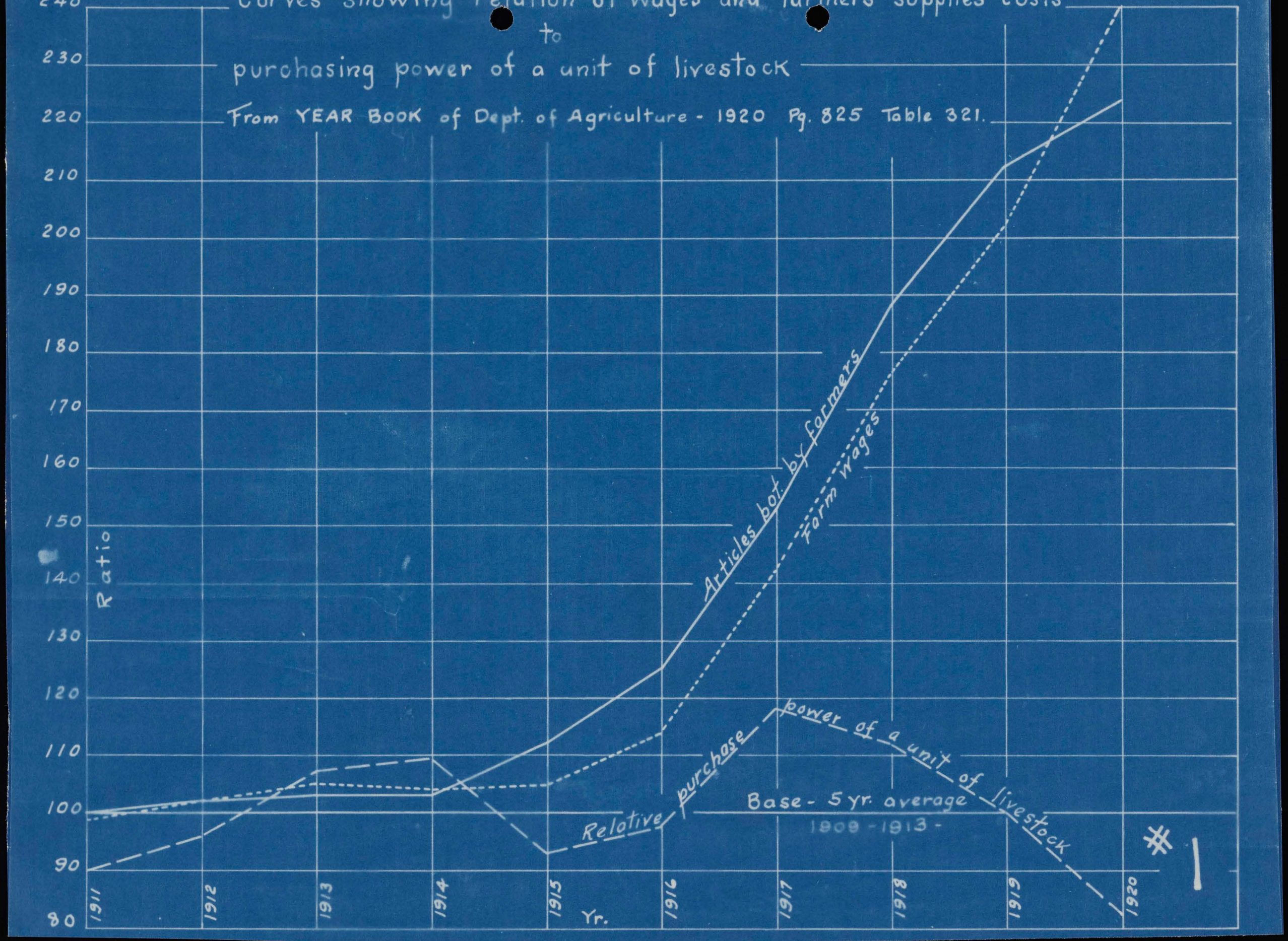
STATUS

## GENERAL FACTS RELATING TO THE LIVESTOCK INDUSTRY.

The precarious financial condition of the livestock industry for the past three years is universally admitted by all authorities in economic and financial circles, The many reasons of a complex nature advanced for this condition prohibit the placing of the whole responsibility for the condition or any quick and certain solution of the problem. We, of the livestock industry, can but urge that the powers of administration in control of such factors as appear to be fundamentally the basis of our troubles, give our condition careful study to the end that we may again prosper and in so doing advance the general prosperity of our state and nation. Government loans, through the war Finance Corporation, to the livestock industry, have met in a measure, the immediate crisis, but other factors controlling our prosperity have failed to adjust themselves so as to insure a recovery of the industry during this emergency aid. The financing of the livestock industry for a short period has been a measure by the Government to prevent a total collapse and the attendant national panic. However, this measure does not alter the existing relation between wages, taxes, supplies, money cost, and the market returns, which factors must be harmoniously corelated if the success of any industry is to be insured. We admit our inability to offer a solution in entity for this problem but a few facts are so strongly presented to our notice that we desire to present them for attention.

Curves showing relation of wages and farmers supplies costs
to
purchasing power of a unit of livestock

From YEAR BOOK of Dept. of Agriculture - 1920 Pg. 825 Table 321.



## CHART NO. I

Labor and supplies are the principal factors of production costs in the livestock industry. The relation of the purchasing power of the livestock produced to these elements governs, to a large extent, the prosperity of the industry. The curves on this chart are taken from the Year Books of the U. S. Department of Agriculture as noted on charts. The curve for Farm Wages, as relating to the livestock industry, would, in all probability, be steeper than indicated by the curve for all farm labor, due to the exhorbitant wages demanded in 1919 and 1920, and which is still true to a marked degree. In 1919 illiterate, Basque, sheepherders as young as sixteen years were receiving as high as one hundred and thirty five dollars per month and all expenses, which included clothing.

The relative purchasing power of a unit of livestock as shown by the curve on this chart, is computed from table 321, page 825, of Year Book 1920. The wide variance between the cost of production curves and the net return curve, in their general trends, is a good criterion of what should be expected and what is actually the fact in the condition of the livestock industry. The entire absence of parallel is seen at a glance.

## CHART NO. 2.

Livestock prices have kept pace with the ramge fees on the National Forest till the year 1918 when a slump in meat prices began. The sudden drop in the livestock prices curbe from 1919 to 1921 shows a declint unparalleled by any other factors effecting the prosperity of the livestock industry. It appears to follow the axiom "All going out and nothing coming in." The figures for the livestock prices of 1920-1921 are taken from Year Book of Swift & Co. as same were not available from the Department of Agriculture.

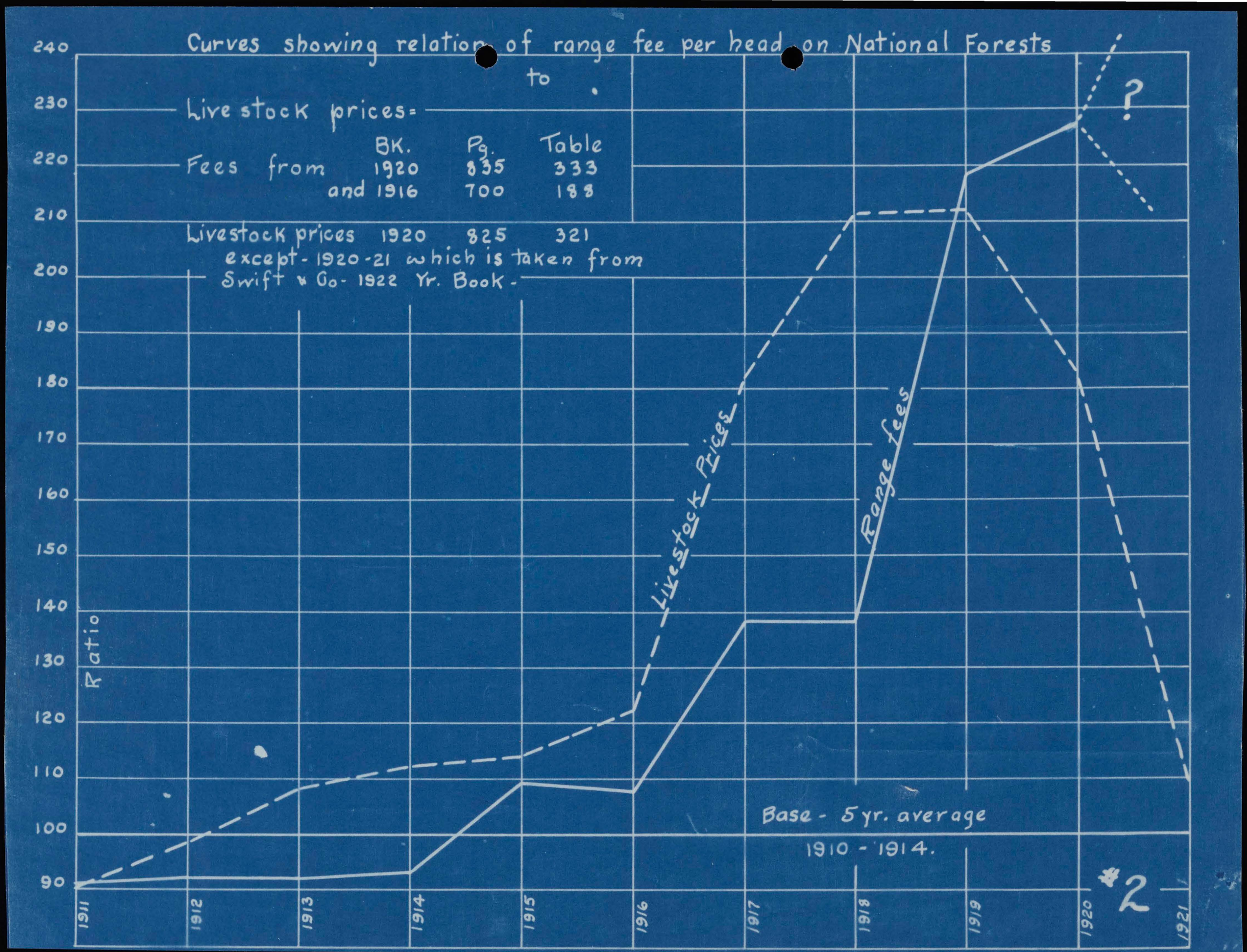
The range fee curve is obtained by simple division of the total revenue to the Forest Service from grazing by the total number of stock grazed without classification. It is therefore unweighted and slightly in error but nevertheless shows the general trend of the unit charges by National Forests Service. The vital question to the livestock industry, in view of the range appraisal now is "Which way will the curve go next?"

Curves showing relation of range fee per head on National Forests to

Live stock prices=

| | BK. | Pg. | Table |
|---|---|---|---|
| Fees from | 1920 | 835 | 333 |
| and | 1916 | 700 | 188 |

Livestock prices 1920 825 321
except - 1920-21 which is taken from
Swift & Co - 1922 Yr. Book -



## CHART NO. 3

Under table 302, page 737, of U. S. D. A. Year Book for 1920 is shown the relative prices of one inch lumber as purchased by the farmer. This is therefore assumed to be the retail price of lumber. This curve shows a steady increase from 1911 to 1920 reaching a point 252% of the base. A smooth curve logically ascending with the increasing scarcity of timber.

The curve showing the Forest Service average sale prices per unit of stumpage has a decidedly downward trend. The curve is also extremely erratic. It is realized that there are numerous factors such as the increased cost of cutting, transportation, milling, etc., which effect this price, but the extreme divergence of these two curves leads us to wonder if the stumpage price is not entitled to absorb its prorata of the increased cost in parallel with grazing fees.

# Curves showing relation of retail price of lumber to Price received per M. of stumpage by Forest Service

Stumpage Curve from BK. 1915-Pg. 579 Table 200.
and- BK. 1920-Pg. 835 Table 333.

Retail price from BK. 1918-Pg. 737 Table 302.
and BK. 1920-Pg. 818 Table 313.

Ratio

240
230
220
210
200
190
180
170
160
150
140
130
120
110
100
90
80

1911 1912 1913 1914 1915 1916 1917 1918 1919 1920

Retail price of lumber to farmers

252 in 1920.

Sale price per M. of stumpage on Forest.

Base = 5 yr. average 1910 - 1914

#3

## CHART NO. 4.

This chart shows the relation of the stumpage prices as taken from Chart No. 3 to the range fees as taken from Chart No. 2. These two items are the main sources of revenue for the Forest Service, bringing them over ninety per cent of their income in 1920, and a like proportion in years previous. That a unit of stumpage has decreased in earning power from 1911 to 1920 is shown by the curve. That a unit of grazing has largely increased in earning power is also shown. The sharp upward trend of the grazing fee curve in 1916 would indicate the need of the Forest Service for additional funds. This increase has evidently been secured by raising of the grazing fees and a decrease in the unit prices for stumpage which acted as a stimulant to the purchase of National Forest timber and to the conservation of privately owned stumpage for coming increases in value.

It will be seen by a glance at the four charts presented herewith that certain curves are erratic and others are comparatively smooth. A classification shows that the relatively smooth curves such as 'FARM WAGES', 'ARTICLES PURCHASED', 'LIVESTOCK PRICES' are the ones controlled by national and world wide laws of supply and demand, and that these curves parallel economic conditions generally. A further classification of the curves shwos the erratic curves such as 'UNIT STUMPAGE PRICES' and 'GRAZING FEES' on the National Forests, to be controlled by local factors, individuals, or administrative bodies of negligable weight as compared with the nation or world as a whole. This fact appears to us as warranting considerable study on the part of these in control of those curves which do not in any way parallel the curves of world or nation wide economic conditions.

# Curves showing relation of Range fees per head on National Forests to Sale price per "M" for stumpage on National Forests.

| | Bk. | Pg. | Table |
|---|---|---|---|
| Fees | 1920 | 835 | 333 |
| and | 1916 | 700 | 188 |
| Stumpage | 1915 | 579 | 200 |
| and | 1920 | 835 | 333 |

Ratio

230
220
210
200
190
180
170
160
150
140
130
120
110
100
90
80

1911 1912 1913 1914 1915 1916 1917 1918 1919 1920

Range fees

?

Base 5 yr. average 1910-1914.

Sale price per "M" of stumpage on forests.

#4

## PROGRAM OF WORK

(1) METHODS OF DETERMINING.

Methods of determining the program of work were outlined under heading 111-2. All projects outlined at the beginning of the year's work are not completed. Many fell by the wayside through lack of interest, change of farm personnell, and indolence. Postmortems of these projects have not been indicated or considered in either the preceeding statistical or the following narrative reports. The loss of time and labor on these unfinished projects seems to be a necessary evil in extension work. I know of no method for correction.

(2) PROJECT ACTIVITIES AND RESULTS.

## FARM CROPS

(a) WHEAT.

The growing of grain in White Pine County is fairly successful but yields have not been large. Several new varieties previously tried have failed to increase the yield. This year four demonstrations of Picklow Club wheat were made. Certified seed was secured from the adjoining state of Utah. Of these four demonstrations, two were small, being of two and three acres respectively. The other two were larger, comprising seventy five acres or a total of eighty acres for the four. The demonstrations were widely separated and on different types of soil. With one exception, they proved to be by far the best wheat in both quality and production that has been raised in this county. Production on one farm increased from thirty-five bushel to fifty six bushels per acre. The average increase was approximately thirty per cent. One man has raised certified seed from his demonstration and has already sold all seed produced at an increase of fifty per cent over the price of standard seed. This wheat was sent to the state fair but was so badly damaged in transit that it could not be exhibited. The judges advised, however, that it was the best wheat received. The wheat was also shown at the county annual meeting and caused much favorable comment. The spread of influence on these projects has been augmented by newspaper publicity.

(b) FETTERITA.

A demonstration of one twentieth of an acre of Fetterita was completed but proved unsatisfactory. This was probably due to the fact that the soil was alkaline and the irregation water hot and containing much mineral matter.

(c) ALFALFA.

Three demonstrations on alfalfa were made. In one of five acres common seed was planted but inoculating two acres with Scott's nitrogen bacteria. This crop was planted late with a nurse crop of grain. Inspection of the plot showed a good stand throughout but due to the density of the grain it could not be determined whether or not the portion inoculated had produced a better stand. The ensuing year should show the difference, if any develops.

The two other demonstrations totaled seventy acres and certified Grim seed was used which is new to this county. On these two plots fourteen acres were inoculated with the nitrogen bacteria. No marked difference could be seen in the stand on one of the plots but a very decided increase was obtained on the inoculated portion of the other plot. A satisfactory stand was secured in all three cases.

(d) ALSIKE CLOVER.

One demonstration of two acres of Alsike Clover was made on a farm where considerable difficulty has been encountered in raising a forage crop of any kind due to shallow, alkalied soil and improper methods of irrigation. The alsike clover, with a remodeled system of irrigation proved to be at least one possible forage crop for this ranch. Forty additional acres will be planted in the ensuing season.

(e) POTATOES.

In spite of an ideal climate and soil conditions White Pine County imports a large portion of the potatoes consumed. The farmers of the county have always produced more potatoes than needed but have lately been unable to market them on account of disease and a general deterioration of the product. In an attempt to correct conditions, Eugene V. Grubb, potato specialist, was brought into the county twice

during the past year. Once before planting, at which time he lectured and gave field demonstrations on potato seed selection, and again during the growing season when he gave field demonstrations on care of the growing plant and the rogueing out of undesirable plants.

As a result of the visits of Mr. Grubb, and the county agents work, five farmers imported and planted certified seed on new ground and results were very satisfactory. The yield was not appreciably increased but the marketable percentage was much higher than heretofore. One man has raised improved seed for sale. Two exhibits of his potatoes were made at the state potato show and they received first and second prizes. As a result of this and considerable newspaper publicity he has been able to sell all the seed produced at a raise in price of fifty per cent above the normal.

One demonstration of one tenth acre was made for the frowing of seed. This proved highly successful as the hills averaged better than thirty perfect seed potatoes to the hill and some hills exceeded forty. This demonstration was given due publicity at community meetings. The method used by this man will be followed by a number of farmers next year.

(f) HORTICULTURE.

Due to climatic conditions, White Pine County does not produce fruit on a commercial basis. Considerable is grown, however, for home consumption. Little attention has been paid in the past to pruning and spraying of the small orchards. This year a horticultural specialist, Mr. J. Merril, was brought into the county for a week and spent this time in lectures on the care of fruit trees and in field demonstrations of pruning. This little campaign resulted in the organization of one spraying circle which purchased new equipment and hired the work done with each benefactor paying his prorata according to the number of trees. Two other isolated orchards were pruned and sprayed which had not been touched for many years. There was a very marked difference in both production and quality of the fruit resulting from this work. The totals in this work involved twelve farms and embraced thirty-one acres. In all cases the coddling moth had reached such a point that hardly any fruit was free from defects. The crop this year showed about ninety per cent of the fruit free from worms.

(g) ANIMAL HUSBANDRY.

BEEF CATTLE. The owners of beef cattle operate as individuals and are practically impossible to get together in matters of herd improvement and better practices. Work on this subject is therefore with individuals instead of communities. Methods used in this county for the production of beef are, for the most part, of a low order with scant attention paid to bulls, calving, winter feeding and range conservation. The county agent has persistently worked with the livestock men by way of submitting actual instances of producers usind improved methods who have achieved good results. Also by questioning as to details and then trying to point out some method of improvement. The livestock man is reluctant to sign a project blank agreeing to make certain purchases or changes till he is in the act of doing the thing at which time the project is therefore started and completed in the one operation. To whom should fall the credit or the blame, for the revision of methods is a problem. In view of the time and effort spent on this work the county agent feels that he has been of material assistance in bringing about the following results.

Nine purebred range bulls, all ribbon winners, have been imported. This should aid materially in increasing the weight of beef produced per head.

There has been over one hundred per cent increase in the use of Blackleg Agresin during the past year and a resultant large saving in losses from this cause.

Maternity sheds and feeding lots have been built to take care of needful ones in a herd of two thousand cows. This should materially increase the calf crop and substantially reduce the losses at which this livestock man is now operating.

Fifteen hundred head of cattle have veen removed from a section of range which was rapidly deteriorating. The water holes have also been closed on this range during the summer. These things will give this particular range a chance to revive and again become a source of feed.

A beef feeding experiment was carried out with forty-two head of weaner steer calves from December

seventh, nineteen twenty two, to April thirteenth, nineteen twenty three. These cattle were fed in the open during one of the worst winters in this district for many years. While the gains shown are worth while they are probably somewhat lower than they would have been had the cattle had some protection from the weather.

| | |
|---|---|
| Weight per head of steers Dec. 7th----385 lbs. | |
| Value at $5.50 per cwt.---------- | $20.17 |
| Barley fed - 4 lbs. per day for 143 da. @ 2½¢---------- | 14.30 |
| Alfalfa fed - 10 lbs. per day for 143 da. @ $14.00 per ton---------- | 10.10 |
| TOTAL COST PER HEAD---------- | $44.57 |
| Sale wt. 662½ lbs. @ 8¢ bringing per head---------- | $53.00 |
| Thirty head of stock hogs followed the cattle gaining an average of 80 lbs. each without other food. Sale value of hogs - 9¢ lb. or $216. A credit per head to steers of---------- | 5.12 |
| TOTAL RETURNS PER HEAD---------- | $58.12 |
| GAIN PER HEAD---------- | $13.55 |
| GAIN FOR 42 HEAD IN DEMONSTRATION-- | 569.10 |

The above prices for feed take into consideration the labor cost.

This demonstration has been given in detail to all the livestock men of the county.

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| | |
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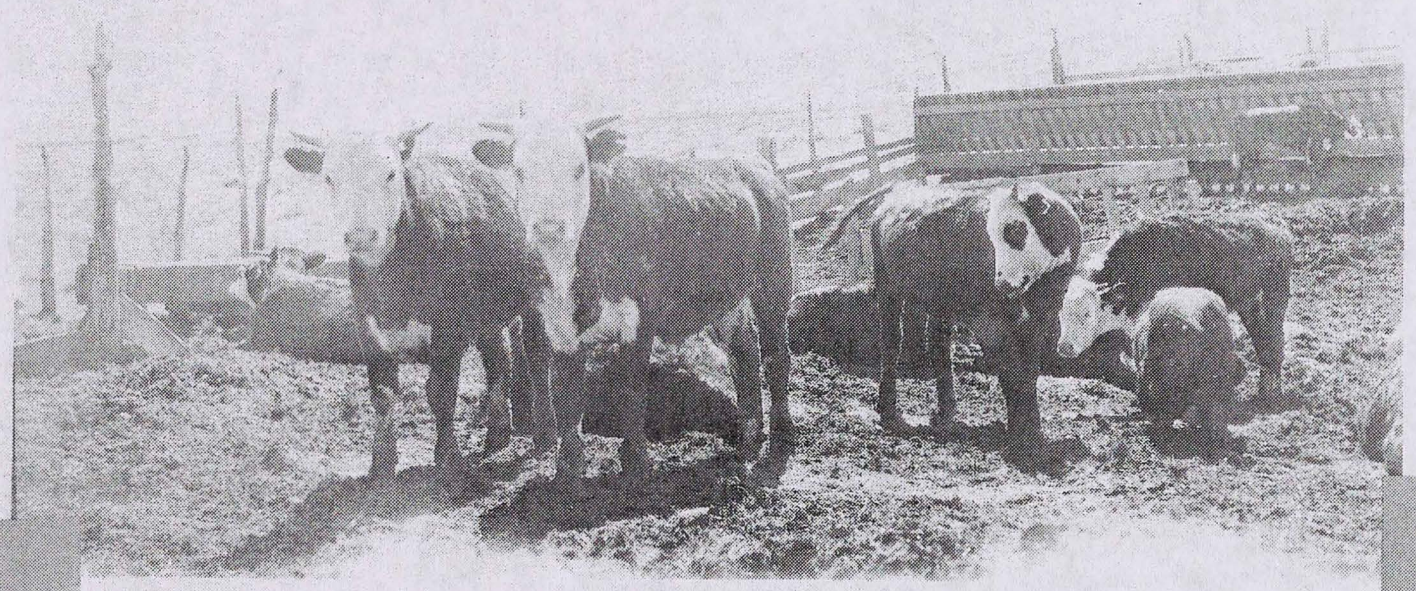


SWINE. Hog Cholera has intermittently broken out in Steptoe Valley during the past two years and in every case has destroyed the entire herd. Two farms where the disease has appeared had repeated losses from this source. They were finally prevailed upon to vaccinate all swine for the Cholera. This was done through the agency of Fr. J. Hilts of the Veterinary Control Service and county agent. Ninety head have been placed on these farms this year, all vaccinated and to date there have been no losses. A considerable saving has therefore been accomplished.

(h) DAIRY HUSBANDRY.

For twenty five years past the two communities of Preston and Lund in this county have derived the bulk of their revenue from the sale of alfalfa hay which is hauled an average distance of thirty five miles to the mining center consuming same. This hay has averaged them a gross return of aroudn seventeen dollars per ton, baled and delivered. This is far below the cost of production, were any labor or interest charges against the product. The two communities mentioned have concinued this practice till they are both poverty stricken with ninety five per cent of all lands and improvements mortgaged to the limit. Last year two projects were started in an effort to alter conditions financially. One, the marketing association which raised and held the price of hay seven dollars per ton and the other a cooperative creamery. The towns of Ely, Ruth and McGill being mining centers and importing all butter consumed under very high transportation rates offered an unusual opportunity for a good creamery. The project was launched on the creamery last year and the close of the year saw the creamery built with no funds to purchase the few needed accessories for operation. A second drawback to operation developed in the fact that nearly all the farmers had sold their hay and a sufficient quantity of feed for milk production was unavailable.

The first of May of this year saw the first churning in the new venture with Prof. V. E. Scott instructing the butter makers. Many misgivings were voiced and a seeming lack of faith prevailed in its success. There were only around a hundred cows milked in the district and the most of them were very poor quality. For the first week the churnings only averaged around thirty five pounds, three times a week. The attitude of the farmers slowly changed as they heard the reports of the good quality of the butter and the demand for more from the consumers. Slowly they began

to respond to the idea and at the end of four months operation it was found necessary to replace the seventy pound churn with one of three hundred pounds capacity. This being considered ample to take care of any future development. The amount of cream brought in was steadily on the increase until it reached a point where all the cream available from the cows in the district was made into creamery butter. This total brings in better than one thousand dollars per month to the communities. The demand for the butter still exceeds the supply by a large amount.

It was realized by the county agent at the beginning of this project that the cows then owned in the district would be insufficient to meet the demands and also that a larger production would be necessary in order to make the creamery pay for itself and still leave a good return to the cream producers. The creamery was built and outfitted entirely on borrowed capital and community labor. During the building of the creamery the county agent visited the local banks and endeavored to secure money for the purchase of additional cows but was refused in all cases due to lack of security and lack of faith in the proposition. One bank did, however, make the verbal promise that if the creamery would operate for four months and at the end of that time show a clean business-like administration with a demand for more butter that they would risk four thousand dollars on the thing. During the past four months the creamery butter was twice sent to the Utah state Butter Judging Contest and in each case ranked first of all Nevada butters and seventh of all the fifty seven entries. The local demand continued good and the communities had responded to the project to the limit of the cows. At this juncture the county agent met with the creamery board, secured a detailed financial statement, the number of cows desired for expansion, etc., and proceeded to the bank making the tentative promise of aid. The bank's representative went into the field with the agent and for four days met with the people collectively and individually and made a careful study of the housing, feeding and other conditions. Many farmers desiring cows were refused aid by the bank but suffice it to say that ten thousand dollars instead of four thousand dollars was advanced and sixty five head of first class dairy cows purchased. Prof. V. E. Scott, the dairy specialist, and a committee of two men making the trip to Wisconsin for this purpose. These cows, together with three purebred dairy bulls are now on their way to further this infant industry, which is already so firmly established. It is expected that the

new cows will boost the returns from the creamery to around twenty five thousand dollars per year which will make possible the redemption of mortgages and the mental, social and physical imporvement of these two communities. It also means that much money is being held in this county instead of being sent out, never to return.

A further expansion of this project is contemplated for the coming year in the form of one hundred additional cows and forty calves. The erection of an ice plant to be operated from the water power plant of the creamery is also in view.

This project is not only solving the problem of an adequate financial return but eliminates the hauling of hay over long distances without gain. The hay at present, marketed in the pasteboard cartons, is bringing more per ton fed from the stack than baled hay hauled thirty five miles.

(i) RURAL ENGINEERING.

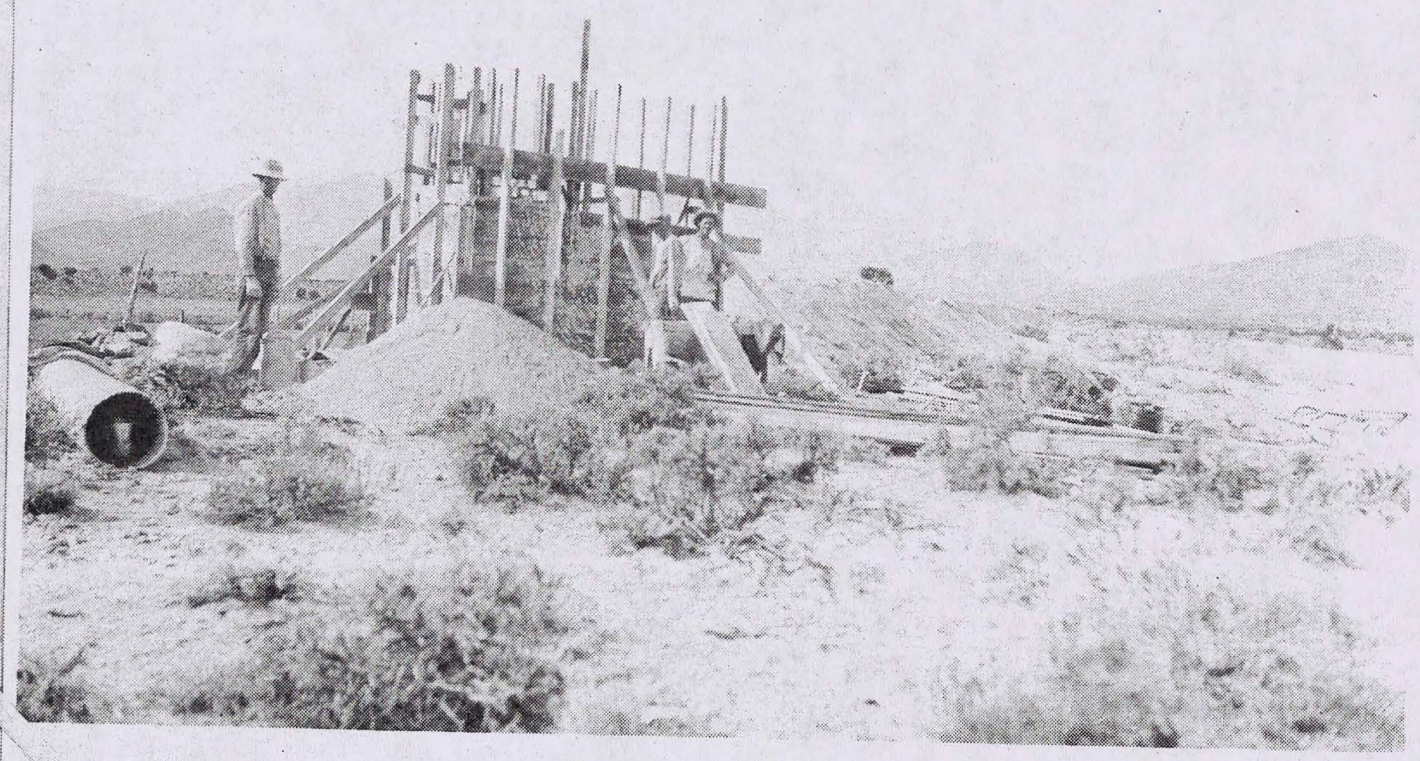
By reason of special training along eigineering lines and the fact that this district is more in need of this type of work than any other, the major portion of the county agent's time was devoted to projects in Rural Engineering.

WATER POWER PLANTS. Three water power plant demonstrations have been made this year with two carried to completion and one still under construction. In each case irrigation water has been used to develop power through use of impulse water wheels of the Pelton type. The water wheel being built by the county agent in one case at a large saving. In the other cases, purchase of second hadn wheels was made through the county agent, also making appreciable savings.

The largest of these plants will develop eighty horse power at the water wheel which is located two miles from the farm. A twenty five horse power generator will furnish the electric energy for all lighting and operation of farm machinery, including sheep shearing machines, threshing machine, shop equipment, etc. This project costing better than four thousand dollars is now under construction.

The other two plants will develop five and three horse power, respectively, and are used to generate electricity for lighting and the operation of small farm machinery only. The complete designs and supervision during construction for these plants was done by the county agent, with the exception of the house wiring which was done by a journeyman electrician. Open house is planned for each of these demonstrations for all the farmers of the district in order to give the largest spread of influence possible.

PUMPING. Four pumping plant demonstrations have been carried on through the past season without one reaching completion for this season's irrigation. The largest of these plants is located on a well drilled on a side hill several years past,--The ground to be irrigated lying in the flat some twenty five feet lower. It had been operated for one season a few years ago, but with a total head of around forty feet which made pumping costs prohibitive and the project was abandoned. The owner died shortly after the plant was dismantled and no data was obtainable on the capacity of the well. Through the suggestion of the county agent a tunnel was dug from the level of the ground to be irrigated and tapped the well at the water surface. This tunnel is seven hundred and fifty six feet long. The county agent then secured the loan of the



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PUMPING. Four pumping plant demonstrations have been carried on through the past season without one reaching completion for this season's irrigation. The largest of these plants is located on a well drilled on a side hill several years past,--the ground to be irrigated lying in the flat some twenty five feet lower. It had been operated for one season a few years ago, but with a total head of around forty feet which made pumping costs prohibitive and the project was abandoned. The owner died shortly after the plant was dismantled and no data was obtainable on the capacity of the well. Through the suggestion of the county agent a tunnel was dug from the level of the ground to be irrigated and tapped the well at the water surface. This tunnel is seven hundred and fifty six feet long. The county agent then secured the loan of the

necessary engine, pump, and fittings to make a test of the well capacity before the purchase and installation of the permanent equipment. The well was found to throw sufficient water to irrigate over one hundred acres with a total lift of about twelve feet when discharging through the tunnel. This is an economical depth for pumping in this district. The permanent plant will be installed in the spring of 1924, operating a horizontal centrifugal pump with a Victory crude oil engine for power. This plant is in Steptoe Valley two miles from Ely.

A well was dug in the Baker district to develop water on a Pittman entry. The pumping equipment used during the sinking of the well and for subsequent testing was furnished by the county agent. After a long siege a six by six well was sunk to the water strata underlying a hardpan capping and the water immediately came through in such volume as to endanger the lives of the workmen in the pit. The water rose to within eight feet of the surface and by subsequent test showed enough water to irrigate seventy five acres. The permanent plant will be installed in the spring to irrigate this acreage. A horizontal centrifugal pump and gas engine will be used.

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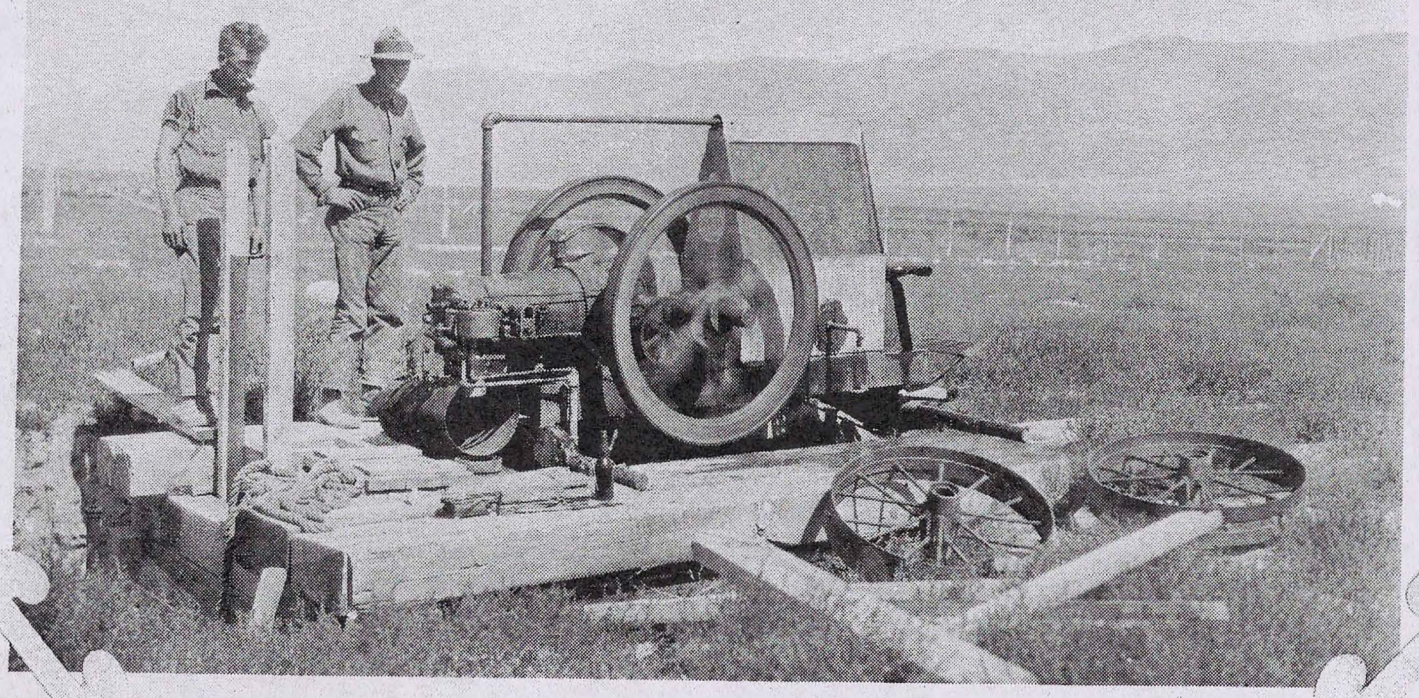
UNRA - PL749/153



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Three cased wells were sunk to a depth of two hundred feet each and also one well dug to a depth of twenty feet. One of these wells is located twenty miles north of Ely in the Steptoe Valley and the three cased wells seventy miles south, in Cherry Creek Valley,--the latter being on a Pittman entry. Each of these wells has been tested by the county agent and found to furnish sufficient water for twenty acres only. Permanent plants have not been installed in any of these wells. The pump used during the sinking of the dug well was used intermittently during the irrigation season to augment the spring water. It made possible the raising of a crop on fifty acres which would otherwise have burned up as the spring water was insufficient.

In all of these cases the county agent has acted a sole adviser during the entire operation.

SPRING DEVELOPMENT. Two springs have been developed during the past season. One located in Duck Valley twenty five miles north of Ely in which case, a small spring was developed by ten days labor of one man to furnish water for irrigation of about five acres and domestic supply. The results obtained were very satisfactory.

In the other case a spring located in White River Valley, seventy five miles south of Ely, was de-

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veloped by the work of four men and two horses for a period of seven weeks. This spring had been developed periodically over a period of years until a trench thirty feet deep at the head and four hundred feet long had been dug. Further development was desired, but the best method of proceedure, not known by the farmer. This method, including the use of drag line scrapers with horse power, was outlined for the farmer and detailed instructions given. A very substantial increase in the flow resulted, making possible the irrigation of forty acres more of land and also the operationof an hydro electric power plant.

(j) RADIO.

Four radio receivers have been built and installed in farm homes by the county agent. They have created considerable interest among the other farmers and a spread in use is anticipated for the coming year. The county agent has used his own receiver to keep in touch with the markets on livestock and has been able to render much service in this manner to the farmers. This county is isolated from the main line railroads and there is no telegraphic market service. Neither does the local paper give quotations. By watching closely the wool market, this past spring, the county agent was able to detect the break in prices a day before it actually occured and immediately drove through the county and advised the wool men of the situation. The break in the market price of wool came within forty eight hours as expected, but five wool producers had acted at once on the county agent's suggestion and sold their wool in a bunch at forty three cents. Within twenty four hours after the sale, wool had dropped to thirty five cents. A saving to these men of over twelve thousand dollars was made. This was only possible through the county agent owning a radio receiver.

(k) WATER SYSTEMS, Domestic.

One domestic water system for farm home supply has been completed. This is in Spring Valley and comprises a complete plumbing system for a large house by means of artesian wells which in turn operated an hydraulic ram forcing the water into a concrete tank house and from there to the points of use. This system is inclusive of a sewage disposal system.

The communities of Preston and Lund in the

White River Valley, about thirty five miles south of Ely, obtain their domestic water supply from the irrigation canals. In these two communities the European system is followed, where the farmers live in the village instead of on the farms. Once each day water is turned from the main canal into laterals which flow past the homes. From these laterals the day's water supply is drawn in barrels and buckets. Repeated analysis of the waters of the canals which flow through many stock corrals show that the content of disease breeding bacteria is dangerously high. This, coupled with the large amount of labor falling on the housewives, has created a demand for a water supply system in each of the two communities.

The county agent made a detailed field investigation in both communities and from this, designed proposed water systems and made the necessary cost estimates which were about fifteen thousand dollars intoto. A method of financing the projects locally was then searched for but many committee and community meetings only disclosed the fact that the financial status was such that this was impossible. The county agent then drew up, took to the state capitol, and succeeded in having passed at this year's session of the legislature, bills permitting each of the communities to bond themselves for sufficient amounts to install the systems. These two communities are unincorporated with a total population of less than five hundred, which made the specials bills necessary before bonding was possible. After the passing of the bills, which would make the bonding possible, it was necessary to have a bond election and the cost estimate and approval of the projects by the engineer of the state industrial commission. At this juncture, considerable opposition began to develop to the project through one of the county commissioners who is the largest and most influential farmer in the valley. It developed that he had water piped into his house and was the only one in the district. Also he was the heaviest taxpayer and the direct tax for bond redemption would hit him hardest. From this man the opposition spread to the other two county commissioners, the district attorney and the county treasurer. It was requested of the county treasurer to render a statement as to the tax rate necessary for the redemption of the bonds. This was readily forthcoming, not once, but a half a dozen times and a different statement in each case. In every case this statement of the treasurer was such that his assessed valuation was so low that the tax rate would be prohibitive for the redemption of the bonds. Open battle between the county agent and the five man opposition existed and appeal to the attorney general of

the state was denied the county agent on the grounds that any request for information at law should come through the district attorney. The district attorney was with the opposition and had already rendered a written opinion which was at variance with opinions rendered the county agent by two of the leading law firms of the district. The county agent then took up the task of securing a certified detailed copy of the assessment rolls for the purpose of obtaining the facts in the case as to whether or not the same was inadequate for the bond redemption with a normal tax increase. The results of this work disclosed the fact that the tax would not be excessive and the project was feasible from this viewpoint. The next step was to secure the official sanction of the engineer of the state industrial commission. This engineer, Mr. Allen, made a visit and inspected the two projects as outlined by the county agent. He has passed favorable upon them and given his promise that his cost estimates and official sanction will be given before the expiration of the bills in June, 1924. This will then permit the people to hold their bond election and show whether or not they wish the water systems.

DRAINAGE. A small drainage demonstration was carried out on a Spring Valley ranch. The demonstration was originally intended to cover fifteen acres, but was reduced through labor shortage to five acres. An underground strata of water under a fair pressure seeped through a semi-previous capping of clay and made an unusable bog of a large area along the foot of a slope. It was too wet for pastureing livestock and could not be worked by horses, for the digging of drainage ditches. Hand labor for digging of deep drainage ditches was prohibitive in cost when balanced against the benefits. The county agent sunk a number of test holes with a hand auger and accurately determined the underground conditions causing the swamp. Shallow ditches a foot deep were then dug across the slope with a slight down grade and these in turn to feed a main drain which was also shallow. These ditches in themselves were of no benefit but at intervals of fifty feet auger holes were sunk in the bottom of the cross ditches till the clay capping was penetrated. This immediately released the water under pressure below and its path of least resistance through these auger holes and the shallow surface ditches effectually drained the swamp.

(1) BUILDINGS.

One dairy barn has been built using plans furnished by the county agent. One dairy barn has been

remodeled using plans furnished by the county agent. These are both located in White River Valley. The total housing capacity of these two barns is thirty two head. Many of the dairy barns of this district have been repaired and slightly altered as a part of the Preston Cooperative Creamery Project.

(m) MISCELLANEOUS.

The county agent has acted in the capacity of engineering specialist during a portion of the time. A trip was made into Humboldt County and five days spent in the inspection andtesting of the pumping plants. In two cases the agent was able to remedy faulty operation and threby decrease the unit costs as well as to increase the total capacity of the plants.

Detailed records on the operation of four pumping plants were kept in this county through the agency of District Agent, J. W. Wilson. These reports have been carefully analyzed and recommendations for increasing the efficiency of the plants made by county agent, King.

In the capacity of engineering specialist the county agent has handled considerable correspondence from other parts of the state in which questions were answered and plans and advice given on pumping, sewage disposal, domestic water systems, irrigation and other matters pertaining to rural engineering.

(n) RODENTS AND INSECTS.

Rodent control is not a serious problem in White Pine County. Only a few ranches are bothered from this source. Poisoning of gophers was carried out on a ten acre field of alfalfa in Steptoe Valley, the poison being furnished by the county agent. The method of inserting poisoned vegetable baits in the underground runs was used. It proved beneficial but did not entirely eliminate the trouble.

ALFALFA WEEVIL. The alfalfa weevil was first found in White Pine County four years ago in the Snake Valley or Baker district, having come from the badly infected areas in Utah just east. Its spread has been very rapid in Snake Valley and the increase in numbers so great that last year's damage pointed to the fact that control measures would have to be taken or the growing of alfalfa abandoned. A like condition exists in two other counties of the state. The last session of

the legislature made an appropriation for the control of the weevil and under this act White Pine County received a ten nozzle power sprayer and sufficient spray material to make demonstrations on seventy five acres. The county agent split the supplies into five parts and carried out five demonstrations of fifteen acres each. The materials were received a week or ten days late for the most effective spraying, but the demonstrations were nevertheless carried through. These portions sprayed were saved from any further damage and cut fair crops. Immediately adjacent sections which had not been sprayed were entirely consumed by the weevil. A very noticeable difference was made in the growth of the second crop. It not only began its growth ten days earlier on the sprayed sections, but gave a considerably larger yield. The work will be continued the coming year on a larger scale but without hope of any but seasonal benefits as it is apparently impossible to get every producer who has infected fields, to spray.

A local quarantine has been proclaimed on this district by the governor but it is without any legal or financial means of enforcement, and has proved ineffective, the weevil having been found in all parts of the county this year except White River and Steptoe Valleys.

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## OUTLOOK

The county agent, after two years in this county, has reached the conclusion that extension work, under the present system, where the agent is supposed to be all wise on all subjects, is somewhat of a farce for about one half of the time and energy expended. With this in mind, it is recommended that the work for the coming year be limited as far as possible to a few major projects of wide spread influence, namely:--Dairying for the White River Valley; A substantial increase in the number of cows, better barns, cow testing, silos, and calf clubs. The installation of the Preston and Lund Water systems, alfalfa weevil control, and rural engineering inclusive of lighting systems, water systems, irrigation, and home conveniences. There is also room for good work in the matter of potato production.

Respectfully submitted,

Thos. R. King

County Extension Agent
White Pine County,
Nevada.

COOPERATIVE EXTENSION WORK
IN
AGRICULTURE AND HOME ECONOMICS

STATE OF NEVADA

College of Agriculture, University of Nevada, and U. S. Department of Agriculture Cooperating.

Agricultural Extension Service
Home Demonstration Work

# R E C O R D - B O O K

# O N

# P U M P I N G P L A N T O P E R A T I O N

# F O R I R R I G A T I O N

# I N N E V A D A

BY

THOS. R. KING,
Rural Engineering Specialist.

Year 1923

Owner Bohnert Bros.

Address Winnemucca Nev.

# DATA ON PUMPING PLANT FOR IRRIGATION

Pumping in the State of Nevada is as yet in the experimental stage. There have been pumping plants which have succeeded and those which have failed. That pumping for irrigation in Nevada is feasible and profitable has been proven in such states as California, Arizona, Colorado and otheps. In order to determine the desirable, undesirable, and limiting conditions which will permit of profitable pumping for irrigation in Nevada, we must have first hand information on Nevada pumping plants. This information must be studied in detail and those features which tend to cause failure guarded against and eliminated and those features which tend to make the pumping profitable must be promoted.

The surface waters of this state are for the most part now appropriated and if we are to expand agriculturally we must develop our underground waters and pump water to make productive the many thousands of acres of fertile soil in this state now idle.

The Extension Division of the University of Nevada, realizing the need for accurate information on pumping in this state, in order to promote its growth and to protect the people now pumping, has compiled and issued this record book. The faithful keeping of the records herein and answering of the questions will make possible the finding of our faults and our good points and speed us toward the time when there will be few failures of pumping plants in this state.

This book of records should be returned to the Extension Division of the University of Nevada, at the close of the pumping season, where the data contained herein will be carefully studied and analyzed and a detailed report made on same showing the reasons for success or failure and the remedy for failure if there be one. This original book with the engineers report will be returned to the owner or person who kept the records, a copy of same being retained in this office for reference.

At the close of each year, a summary report of pumping in Nevada will be published showing the findings and recommendations without showing in the same the identity of any owner unless with the owner's permission.

Signed

Cecil W. Creel. Director of Extension

Thos. R. King. Rural Engineering Specialist.

# DATA ON PUMPING PLANT FOR IRRIGATION

For year 1923

1. Owner Bohnert Bros.
2. Address Box 43 Winnemucca
3. Location of plant, County Humboldt Sec 14 Twp 35 Rng. 37
4. Elevation above sea level 4000'
5. Years plant has been operated 2
6. Is well bored or dug bored Depth of well 105'
7. If well is bored, what size and kind of casing 12"
8. What kind and percentage of perforations 1"x¼" — 40%
9. If dug well, what part is timbered and how
10. Depth to water 45'
11. Feet from pump to water not pumping 18"
12. Feet from pump to water at greatest drawdown 22'
13. Feet from pump to discharge pipe outlet 46'
14. Greatest drawdown in feet 23'
15. What kind of pump? centrifugal (Horizontal / Vertical / Turbine) 2, rotary
16. Pump size 6" make Byron Jackson type 40425
17. Normal rated discharge of pump in G.P.M. 650 G.P.M.
18. Normal rated speed of pump in Revolutions per minute 900-1000
19. Is pump direct connected or belt drive Belt
20. Does pump have discharge valve Yes foot valve Yes primer Yes
21. Size, suction of pump 7' Size suction pipe 7'
22. Size, discharge pipe 8' Are taper connections used Yes
23. Size pulley on pump 12" on engine or motor 34"
24. Is belt horizontal, vertical, or inclined inclined
25. Power used, electricity, steam, or combustion engine combustion
26. Make of engine or motor A.O-12x12- Giant Semi Deisel
27. Horse power, factory rating 30 H.P.

28. Normal speed of engine or motor, R.P.M. 300 R.P.M.
29. Fuel used stove oil lubricating oil Terolene #3
30. Feet between engine and pump pulleys 57'
31. Description of belt 6 ply - 10" rubber
32. No. of acres irrigated by pumping 60
33. Kind of crops by acres 45 A. alfalfa - 15 A. Spuds
34. Nature of soil Sandy loam depth 3 ft.
35. Nature of subsoil Clay loam
36. Is land flat or sloping gently sloping
37. System of irrigation used check
38. Is water reservoired No Size reservoir
39. Is water discharged by pump measured No
40. Describe measuring device
41. Is plant operated by owner Yes
42. Name of person supplying above information Carl Bohnert
43. Address Box 113 Winnemucca, Nevada

Note:

Answers to all of the above questions which apply to your plant are necessary to afford a study of value to be made of cost data following.

Quote the inside dimensions in answer to questions on page 2 concerning pipe and fittings.

The water discharged by the pump should be measured over a full contracted rectangular weir at least once a week and oftener if there is a noticeable discharge difference at any time. The size and details of the necessary weir will be furnished by the Extension Department upon receipt of the normal discharge of the particular pump discharge to be measured.

If possible, the speed of the engine or pump should be taken with a speed indicator at the time the water is measured.

# OPERATION DATA

Pumping (hours, minutes) attendance, and water measurements.

| Date | April | | May | | JUNE | | JULY | | Aug. | | Sept. | | Water Measurements | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | P | A | P | A | P | A | P | A | P | A | P | A | Date | Head | Discharge |
| 1 | | | | | | | | | 14 | 1 | | | | | |
| 2 | | | | | | | | | 13 | 130 | | | | | |
| 3 | | | | | | | | | ~~15~~ | | | | | | |
| 4 | | | | | | | | | 15 | 2 | | | | | |
| 5 | | | | | | | | | 14 | 1 | | | | | |
| 6 | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | 12 | 2 | | | | | |
| 8 | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | 10 | 150 | | | | | |
| 11 | | | | | | | | | 12 | 1 | | | | | |
| 12 | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | 10 | 1 | | | | | |
| 14 | | | | | | | | | 12 | 140 | | | | | |
| 15 | | | | | | | | | 24 | 3 | | | | | |
| 16 | | | | | | | | | 24 | 2 | | | | | |
| 17 | | | | | | | | | 24 | 150 | | | | | |
| 18 | | | | | | | | | | | | | | | 10 |
| 19 | | | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | | | |
| 21 | | | | | | | 24 | 4 | | | | | | | |
| 22 | | | | | | | 24 | 3 | | | | | | | |
| 23 | | | | | | | 4 | 1 | | | | | | | |
| 24 | | | | | | | 12 | 130 | 24 | 2 | | | | | |
| 25 | | | | | | | 24 | 2 | 18 | 130 | | | | | |
| 26 | | | | | | | 24 | 230 | 24 | 230 | | | | | |
| 27 | | | | | | | 23 | 2 | | | | | | | |
| 28 | | | | | | | 12 | 1 | | | | | | | |
| 29 | | | | | | | 13 | 1 | | | | | | | |
| 30 | | | | | | | 11 | 30 | | | | | | | |
| 31 | | | | | | | | | | | | | | | |
| Totals | | | | | | | 171 | 1930 | 250 | 2230 | | | | | |

Total pumping hours in season 421 . Total season's attendance 69 hrs 20 min

A - Attendance in minutes each day is time starting, oiling, regulating and stopping only. All other time should show under Labor, page 6.

P - is number hours pump operates each day.

## FUEL RECORD

| Date | | Kind | Gals. | Cost per Gal | Value |
|---|---|---|---|---|---|
| | Fuel on hand at beginning of season | Crude | 1032 | 9¢ | $92.88 |
| | Fuel purchased during season - | | | | |
| | " " " " | | | | |
| | " " " " | | | | |
| | " " " " | | | | |
| | Total on hand during season - | | | | |
| | Balance on hand at end of season | | | | |
| | Season consumption and cost | | 1032 | 9¢ | $92.88 |

## LUBRICANT RECORD

| Date | | Kind | Gals. | Cost per Gal | Value |
|---|---|---|---|---|---|
| | On hand at beginning of season | Z-3 | 45 | 54¢ | $24.30 |
| | Purchased during season | | | | |
| | " " " | | | | |
| | " " " | | | | |
| | " " " | | | | |
| | Total on hand during season | | | | |
| | Balance on hand at end of season | | | | |
| | Seasons consumption and cost | | 45 | | $24.30 |

## REPAIR PARTS AND SUPPLIES

| Date | ITEMS | Cost |
|---|---|---|
| | Hot plate | $ 2 75 |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | Total cost | $ 2 75 |

## LABOR (Other than attendance)

| Date | Hours | Date | Hours | Date | Hours | Date | Hours |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| Totals | | | | | | | |

Total hours labor for season other than attendance --

| | Cost | |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

Under repair parts and supplies, several items may be listed on one line with the cost in small figures after each item and the total for that line in the cost column.

FIRST COST OF PLANT

| | | |
|---|---|---|
| Cost of well complete | | 900 — |
| Cost of power plant complete | | 1500 — |
| Cost of pump | | 600 — |
| Cost of fittings | | 150 — |
| Cost of housing plant | | 75 — |
| Cost of setting up plant | | 350 00 |
| Total first cost of completed plant - | $ | 3575 00 |

State below facts affecting the cost of the plant as freight from railroad point, labor performed by owners, supplies on hand - Give the amounts and do not include any but cash expenditures above -

Labor & freight $350 00

# ANNUAL COST SUMMARY

| ITEMS | COST - |
|---|---|
| Interest on total cost of plant at 8 per cent | 286.00 |
| Annual depreciation at 5% of first cost | 178.75 |
| Insurance | |
| Taxes | |
| Fuel | 92.88 |
| Lubricant | 24.30 |
| Repair parts and supplies | 2.75 |
| Labor other than attendance - | |
| Attendance - 70 hrs. at 30 ¢ per hour | 21.00 |
| Total season's cost - | $605.68 |

Remarks:-

State here your principal troubles, the good and bad points of your engine, pump, belt, and other equipment-

No serious troubles in past two seasons with this pumping plant.

## ENGINEER'S ANALYSIS AND REPORT.

| | |
|---|---|
| Acre feet pumped in season | 50.4 |
| Acre feet used per acre, average | .84 |
| Cost per acre foot for water pumped - | $12.01 |
| Cost per acre for water pumped - | $10.95 |

Remarks:-

The amount of water pumped at 68' head indicates a good fuel consumption, but not full power for the engine. The engine is only delivering 22 H.P. at this discharge. This pump should throw around 800-900 G.P.M. under 68' head if run at proper speed. However, your engine is a little under powered for operating the pump at full capacity. You had better have County Agent make discharge measurements and check up the head and engine & pump speeds etc. About 750 G.P.M. is the maximum you can expect from this plant. It should be worked to full capacity in order to decrease the per acre costs on interest, depreciation, attendance etc. Your present costs are a little high. If your well will not stand a greater output than 650 G.P.M. your entire plant is too large.

Thos. R. Kirg.

ENGINEER'S ANALYSIS AND REPORT (Continued)

# RURAL ENGINEERING PROJECT OUTLINE

by

Thomas R. King, Engineering Specialist.

1-IRRIGATION

a-Water Supply
Source, quantity, permanence, quality, use.

b-Gravity systems
Dams, diversion and storage, reservoirs, main canals

c-Pumping
Engines, pumps, plat layout, costs, feasibility

d-Wells
Artesian and for pumping, location, types, costs, etc.

e-Distribution
Farm ditches, headgates, weirs, boxes, etc. Methods of distributing as furrow, border, check, and combinations. Water duties for different crops. Times to irrigate.

2-HOME WATER SYSTEMS

a-Gravity, pumping, combination.

b-Nature of water as hot, cold, clear, muddy, soft, hard, and treatment if necessary.

c-Use to be put to, household, barn, dairy, desired pressures.

d-Farm plumbing, traps, strainers, freezing, sanitation.

e-Size of storage and kind based on size of family and number and nature of plumbing fixtures.

3-SEWAGE DISPOSAL

a-Outdoor toilets

b-Chemical indoor toilets

c-House connections for outdoor disposal

d-Outdoor disposal

1-Cesspools

2-Septic tanks

3-Other types

4-WATER DEVELOPMENT

a-By springs
Small springs for household and stock watering purposes.
Some larger ones for irrigation

5-FARM ENGINEERING

a-Planning the farm layout for efficiency, sanitation, beauty.

b-Farm house equipment, sinks, tables, cabinets, etc.

c-Lighting systems, wiring, fixtures, etc.

d-Buildings, barns, silos, etc. concrete work.

e-Fences, gates, etc.

6-ROADS
Types, drainage, maintenance

7-WATER POWER PLANTS

a-Types, uses, construction at home, etc.

8-POWER MACHINERY

a-Tractors, engines, separators, churns, washing machines, etc.

b-Heating plants.

## RURAL ENGINEERING PROJECT PROCEDURE

1- Each community decides nature of engineering work needed. This is usually preceeded by a visit to the community of the specialist in engineering who points out a number of things that could or should be done.

2- The county directors decide on a county program of engineering. This decision should be based on -
The amount of specialist time available
The outstanding needs of the county as a whole
The cooperation available from the various communities.

3- The extension agents forward the needs of the county and communities in detail to the engineering specialist.

4- The engineering specialist sends the extension agents all available educational information on the various matters including bulletins, blue prints and suggestive outlines of preliminary work.

5- Communities and county directors after study of information from specialist revise their program and forward same to specialist.

6- Engineering specialist outlines in detail the units of the various projects.

7- Arrangements made for demonstrations and lectures on the different projects by the engineering specialist through extension agents.

8 - Visit of the engineering specialist for the beginning of such projects as need his assistance.

9 - Progress reports and correspondence service by the specialist during progress of the work.

10 - Final reports of the projects by local leaders and extension agents forwarded to specialist.

11 - Engineering specialist's analysis and report on the different projects with recommendations for future work in each county

12 - Independent work by the engineer which consists largely of finding community or state projects capable of profitable development. This constitutes one of the most valuable parts of the engineering specialist's work, as there are many unrecognized opportunities for this work throughout the State.

13 - A consultation service is also carried on through the mail and through the medium of the State Farm Bureau paper, on engineering matters.