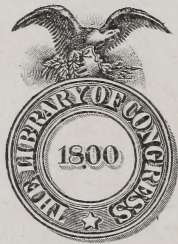


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State of Washington—Bureau of Statistics and Immigration

I. M. HOWELL,
SECRETARY OF STATE, EX-OFFICIO COMMISSIONER

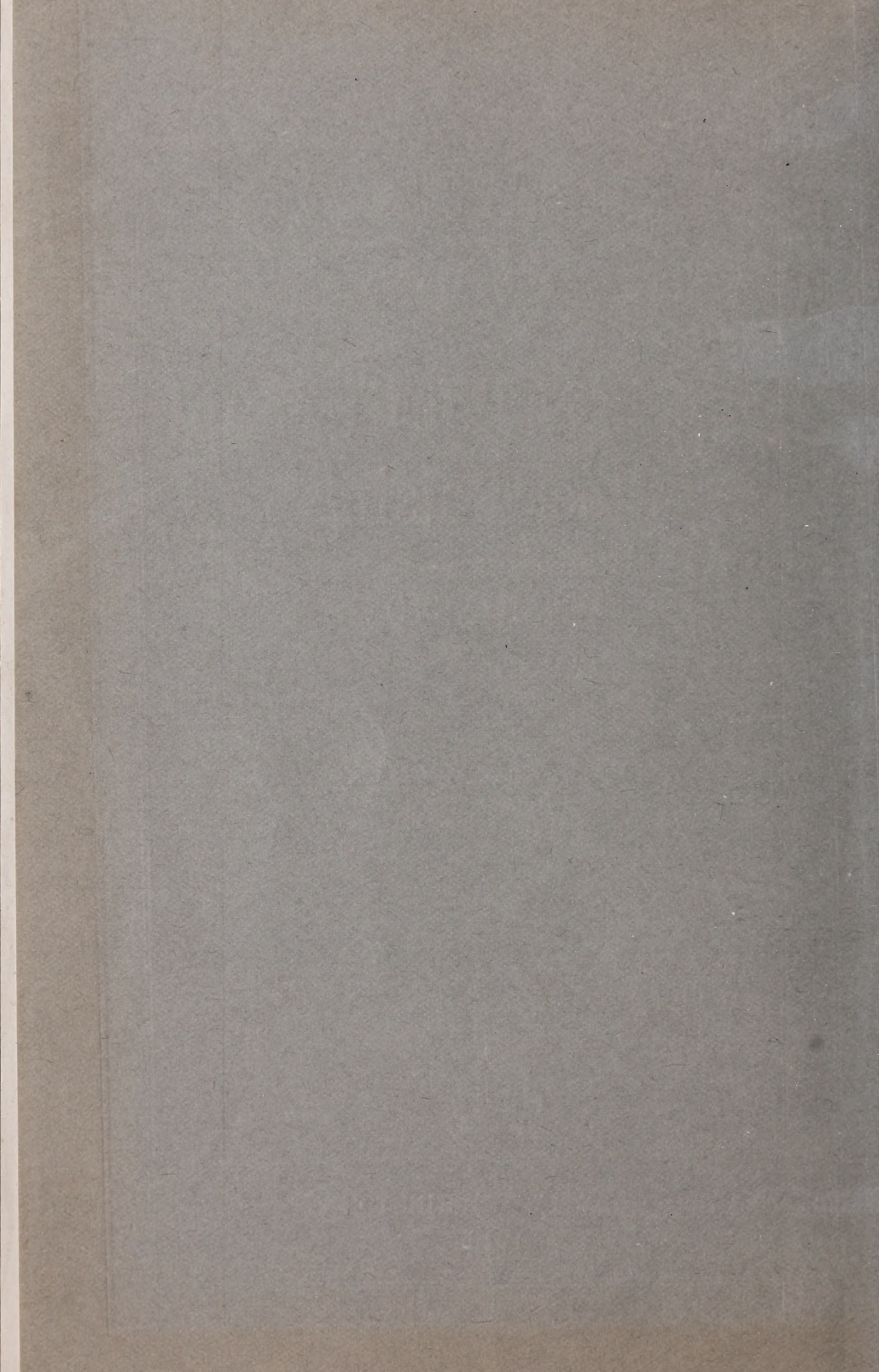
Dairying, Poultry and Stock Raising

— IN —
WASHINGTON

By HARRY F. GILES,
Deputy Commissioner



OLYMPIA, WASHINGTON
1912

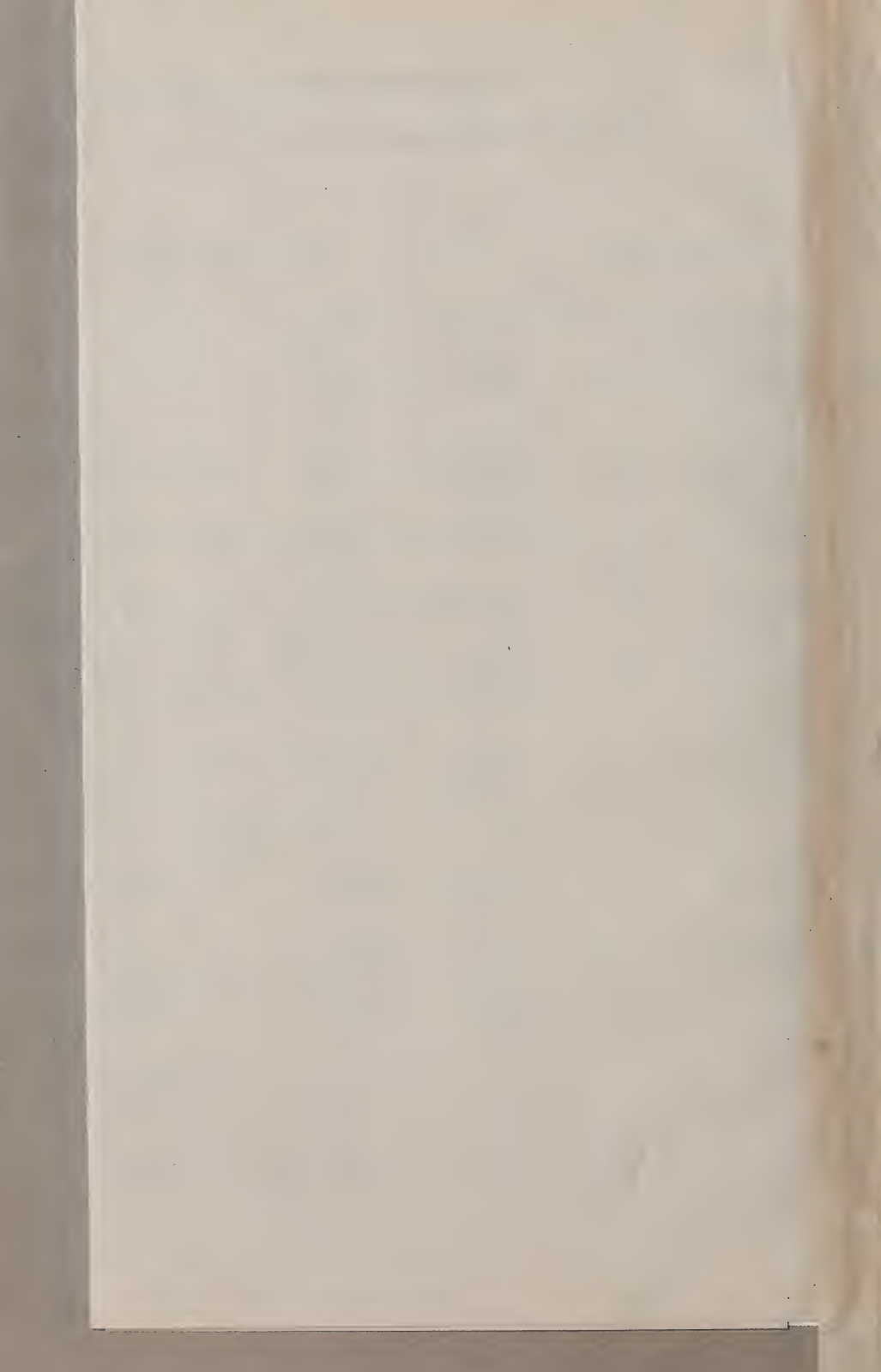


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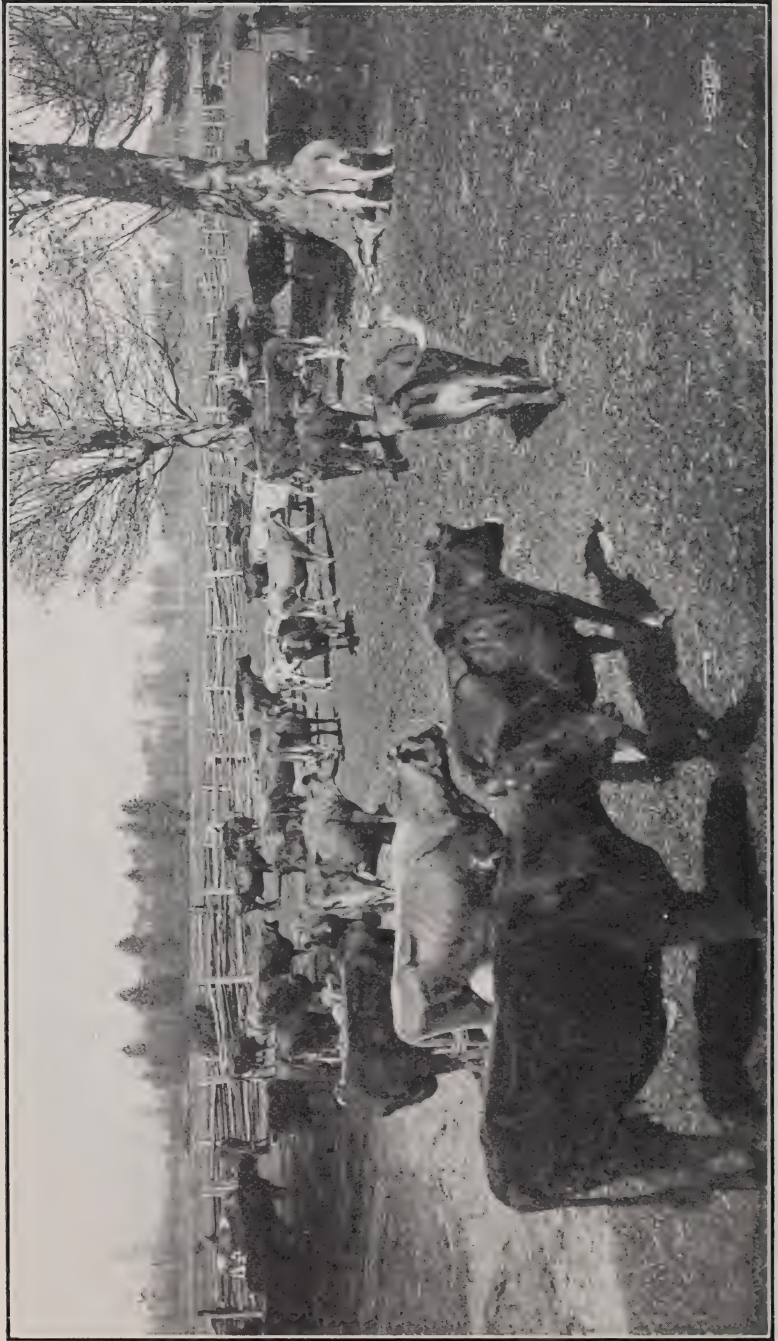
stock	Is there danger of overdoing	REMARKS
.....	Expenses for one year, \$14,857.73; receipts, \$20,640.19.
.....	.....	More in feeding cows than selling hay.
.....	.....	Do not recommend exclusively dairying, but diversified farming.
.....	.....	Expenses for one year, \$7,345; receipts, \$10,500.
.....	.....	We make certified milk; expenses and income larger than average.
.....	.....	Intelligent farmers with energy needed.
.....	.....	Gross receipts nearly \$10,000; rented land.
.....	.....	Operated by means of hired help.
.....	.....	Land yields 5 tons timothy to acre; all mine has stumps.
.....	.....	Cows are all under 3½ years old.
.....	.....	We deliver milk and cream once a day in Davenport.
.....	.....	Have three men at \$40 per month.
.....	.....	Expenses for 1911, \$1,445; receipts, \$2,910.37.
.....	.....	Expenses for 1911, \$510; receipts, \$1,500.
.....	.....	Expenses for 1911, \$3,220; receipts, \$4,955.
.....	.....	Much money here in peas, beans and small fruits.
.....	.....	Land may be bought for \$12 per acre.
.....	.....	Cows, potatoes, carrots, oats, barley, etc., go well together.
.....	.....	Expenses for 1911, \$800; receipts, \$1,685.
.....	.....	Expenses for 1911, \$2,260; receipts, \$3,700.
.....	.....	Some land at \$50 per acre.
.....	.....	Two crops of clover hay are raised each year.
.....	.....	Land worth \$25 per acre.
.....	Yes	I keep actual accounts the year round.
.....	No	Washington best state in Union for dairying.
.....	No	All products used in logging camps.
.....	No	Raised and consumed 60 tons hay, 30 tons roots.
.....	No	600 acres school land; leased.
.....	No	There is a co-operative creamery near.
.....	Yes	Complete records not kept.
.....	No	Clover, timothy, alfalfa and roots grow splendidly here.
.....	No	Would sell on account of old age.
.....	No	Greatest trouble is in getting hired help.
.....	No	On leased land.
.....	No	Just starting in work.
.....	No	Sell sweet cream in Vancouver at 40c year round.
.....	No	Creamery sends wagon for cream twice a week.
.....	Not for years	Land as low as \$20 per acre.
.....	No	Land pastured after first cutting.
.....	Not at present	120 acres in clover, timothy and grain; rest in pasture.
.....	.....	Colonies could do better than individuals.
.....	No	Sold enough grain to buy all mill feed and alfalfa feed.
.....	No	Mountainous country and considerable range.

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Waiting to be Milked. A typical Western Washington Dairy Scene.

STATE OF WASHINGTON
DEPARTMENT OF STATE

Washington Stat.

Bureau of Statistics and Immigration

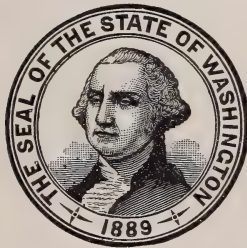
I. M. HOWELL, Secretary of State
Ex-Officio Commissioner

DAIRYING, POULTRY AND
STOCK RAISING

IN

WASHINGTON

By H. F. GILES
Deputy Commissioner



OLYMPIA, WASH.:

E. L. BOARDMAN  PUBLIC PRINTER.

1912

LETTER OF TRANSMITTAL.

OFFICE OF THE
BUREAU OF STATISTICS AND IMMIGRATION.
OLYMPIA, June 20, 1912.

Hon. I. M. Howell, Ex-Officio Commissioner.

SIR: Pursuant to your instructions, I have prepared and have the honor to transmit herewith a report dealing with dairying, poultry and stock raising in the State of Washington, with a recommendation that an edition of 12,000 copies of same be published for general distribution in connection with the work of this department.

Respectfully,
H. F. GILES,
Deputy Commissioner.

Approved for publication, July 1, 1912.

I. M. HOWELL,
Ex-Officio Commissioner.

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AUG 28 1912

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Rich Pasture and a Fat Herd in Southeastern Washington.

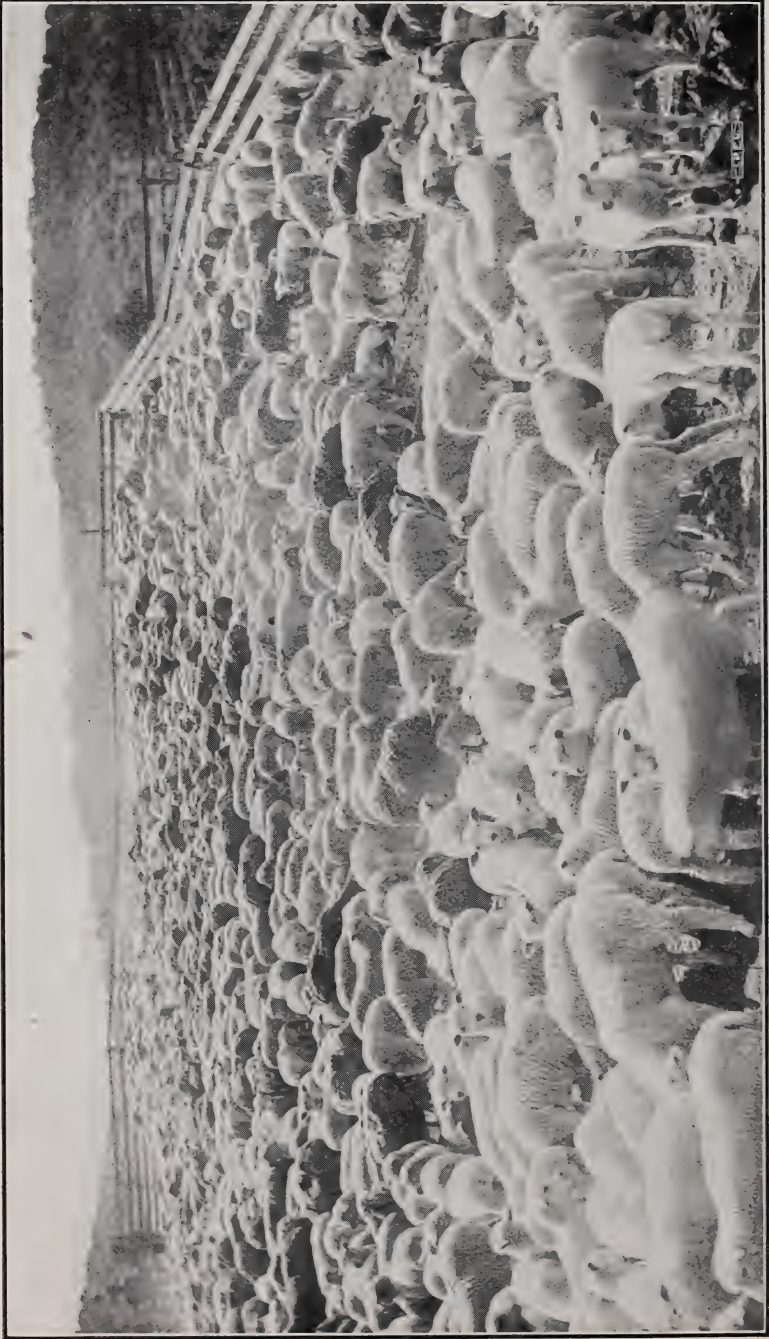
FOREWORD.

The purpose of the following pages describing live stock industries in the State of Washington is not to teach the details necessary for success in those enterprises, but merely to present a few facts showing the splendid possibilities connected therewith.

This publication may be considered as a concentrated expression representing the views of many busy workers who have kindly taken time to offer valuable suggestions or to send figures indicating the results of their own efforts. What these men and women have done can be duplicated by others who are willing to devote the necessary time and intelligent effort to the work. The desirable species of citizen never expects to win anything of value without labor; and it is for such people especially that this report is prepared, with the hope that many will decide to come and profit by the excellent opportunities for home-building offered by the State of Washington.

If anything herein should have the further effect of influencing some, who are now struggling in the business centers of our own state, to seek the opportunities and comparative independence lying just outside the confines of the bustling city, then another very desirable mission will have been performed.

To the various commercial organizations, state officials, county assessors, individuals, and others who have rendered valuable assistance in contributing information and suggestions, this department cheerfully acknowledges due obligation.



Eastern Washington Sheep, preparing food and clothing for thousands.

A GENERAL SUMMARY OF LIVESTOCK INDUSTRIES.

INTRODUCTION.

Washington extends a cordial welcome to home seekers and home builders. This invitation is for men and women who have thus far been unsuccessful in realizing their life's wishes, as well as for those who for any reason are dissatisfied with their present abodes and are in search of different scenery, a change in climate, and better opportunities to engage in gainful pursuits. Men who care to develop lands or live on farms are especially invited, as here there are many broad acres of undeveloped country awaiting the willing hand of the industrious builder. A little capital, ordinary ability and willingness to work can hardly fail to bring the owner ample returns and real contentment when such forces are directed anywhere within the boundaries of this new and growing state.

30,000 FAMILIES NEEDED.

Thirty thousand families are needed right now to help feed the 700,000 and more people that are kept busy in the mercantile and manufacturing pursuits of the city. They are especially needed to help supply the meat, dairy products and poultry products that must in a large measure at present, be shipped clear from the Mississippi valley, Montana, Idaho, Oregon, and California. To be sure the farmers are doing the best possible to feed the city population, but the barely 60,000 farm operators can scarcely be expected to supply the wants of their own families and also contribute sufficient for the maintenance of a large and constantly increasing urban population. Every year miles of cars laden with cattle, hogs, sheep, poultry, eggs, butter and cheese, as well as much other farm produce, may be witnessed filing over the mountains.

20,000,000 ACRES OF LAND IDLE.

In the meantime twenty million acres of land are lying idle for the want of developers. They include unimproved private lands, state lands, railroad lands, and federal lands; logged-off lands, prairie lands, irrigated lands, and dry farming lands; all classes of soil varieties ranging from a light sandy loam to heavy black river bottom. Probably no county in the state is without agricultural land of one type or another, available to the settler at reasonable prices and on easy terms. This land would supply millions of people with the necessities and comforts of life. Much of it is equal to the richest in the world, while practically all is suitable for some kind of profitable growth or other, including pasture for livestock.

With a fair percentage of this land placed under cultivation no further need would exist for sending away millions of dollars in order to get the necessities of life for Washington people. Instead, this money could be distributed among Washington farmers, and Washington enterprises could be further financed and benefited.

PROFITABILITY DECIDING FACTOR.

However, the purpose of this report is not to dwell on the advantages of general farming in Washington, as that has been done in other pamphlets; but rather to encourage livestock industries, and particularly those relating to dairying and poultry raising.

Domestic animals have always been the friends of mankind, doing the best their breed and environment would permit. No matter what the treatment, still they have always striven to yield the returns possible under the circumstances.

Although a certain number of these are necessary on the average farm, nevertheless, when it comes to raising them as a business, the question of profit is bound to be the main consideration with the producer. Competition gets keen as civilization advances, so that the most favorable location must be found before extensive enterprises of any nature are going to be carried on.

NEARLY ALL COUNTIES ADAPTABLE.

There are no parts of Washington that will not support livestock of one kind or another. The days of the range system to be sure are practically over. No more do the herds of horses and cattle roam at will over the wide area, choosing the richest pasture wherever it may be. They must now be confined to narrower quarters, and must be satisfied with less freedom.

However, this condition works a benefit to the animals as well as to the owners. The same quantity of land is now made to support many times the number that could be kept in former days, in better condition, and more perfect in breed.

Horses, mules, beef and dairy cattle, sheep, goats, hogs, poultry, and bees are all produced in Washington, and all, under proper management, pay splendid dividends to the owners.

TABLE SHOWING VALUE OF DOMESTIC ANIMALS, POULTRY AND BEES IN WASHINGTON AT DATES INDICATED.

Kind.	1910 (April 15)		1900 (June 1)		INCREASE.*	
	Value.	Per cent. distribution.	Value.	Per cent. distribution.	Amount.	Per cent.
Total.....	\$48,865,110	100.0	\$22,159,207	100.0	\$26,705,903	120.5
Cattle	12,193,465	25.0	9,440,038	42.6	2,753,427	29.2
Horses and colts	29,680,849	60.7	8,550,434	38.6	21,130,415	247.1
Mules and mule colts	1,776,297	3.6	138,185	0.6	1,638,112	1,185.5
Asses and burros	82,405	0.2	16,481	0.1	65,924	400.0
Swine	1,674,927	3.4	830,704	3.7	844,223	101.6
Sheep and lambs	1,931,170	4.0	2,450,929	11.1	—519,759	—21.2
Goats and kids..	31,662	0.1	10,757	(†)	20,905	194.3
Poultry	1,367,440	2.8	614,838	2.8	752,602	122.4
Bees	126,895	0.3	106,841	0.5	20,054	18.8

* A minus sign (—) denotes decrease. † Less than one-tenth of 1 per cent.

HORSES LEAD IN IMPORTANCE.

In relative importance, the horse distances all other stock put together, approximating three-fifths of the aggregate value of all livestock in the entire state. The greatest increase during the past decade has also been in horses. Four-fifths of the actual gain in livestock has been from this source. With a valuation in 1900, of \$8,550,434 they had grown in 1910 to the value of \$29,680,849, an increase of 247.1%. This is not due



A Team of Prize Horses.

entirely to number and better quality, although these represent partial reasons, but also to the great demand for first class work horses by private parties, and for good saddle horses by the United States government. The average value of horses in the states has grown during the past 45 years from \$59.00 to \$111.67 and the chances are for still further increase.

Geo. K. Holms, Chief of the Division of Production and Distribution of the U. S. Bureau of Statistics, in speaking of horses used for operating farm machinery, says:

“Herein lies the strength of the horse as an economic animal. He has been assailed by the bicycle, the electric street and suburban car, and by the automobile, but all combined have not prevented horses from increasing in numbers and in value. As a source of farm power and as a substitute for human labor in combination with machines the horse’s economical place on the farm is more strongly established than ever before.”

The counties in which this industry has been chiefly developed are Whitman, Lincoln, Yakima, Okanogan, Douglas, Garfield, Grant, Adams, King, Pierce, and Walla Walla.

MULES INCREASING.

To supplement the horse the raising of mules has suddenly taken a wonderful stride, increasing thirteen fold in the brief course of 10 years. Walla Walla, Adams, Whitman, Lincoln, and Columbia are the leading counties in this respect.

The general sentiment in all these counties is well stated by D. B. Campbell, assessor of Lincoln county:

“Most of the farmers take considerable pride in raising good horses and mules; in fact all who are able to own good stock seem to be very much interested in trying to improve what they have. They have found it profitable for their own use, and usually have found ready buyers who were willing to pay good prices for any good stock they had for sale.”

BEEF CATTLE PROFITABLE.

Nearly all parts of the state contribute some cattle for beef. However, the industry is carried on as a business chiefly in the eastern counties of which the largest producers are Okanogan,

Whitman, Lincoln, Yakima, Kittitas, Adams, Klickitat, Walla Walla, and Garfield.

When there is no range it is usually a question with the farmer as to whether it will pay him most to sell his hay and other feed, or whether he can make more by fattening cattle.

There is never a time when a good market does not exist. Figures gathered from five firms that ship cattle from other states indicate that beef cattle and calves, valued at nearly \$7,000,000.00 in the hoof, were brought into Washington for consumption during the year 1911.

The short mild winters are particularly inducive to this line of work, especially in the counties where pasture plays an important part.

SHEEP.

Many fortunes have been made in the past from the raising of sheep. Money can still be made from them, but as time goes on it will be necessary to raise them in smaller flocks and chiefly on land that is fenced in, since the ranges are already practically utilized by those now in the business. All the mutton, lamb, and wool that can be produced finds a ready market in Washington and at good prices. About \$1,000,000 worth of sheep and lambs alone were shipped into the state during 1911, principally from Montana, Idaho, Utah, and Oregon.

The industry is carried on chiefly in eastern Washington and particularly in the counties of Kittitas, Asotin, Klickitat, Walla Walla, Franklin, Yakima, Whitman, Columbia, Benton, Adams, Garfield, Grant, and Okanogan. Of the western counties San Juan alone produces an appreciable quantity.

GOATS.

There are upwards of 10,000 goats of the Angora breed in Washington, and found principally in the counties of Clarke, Lewis, Pierce and Thurston, although nearly all the counties, especially of the western part of the state, have a few. That still more attention is not given them is probably due to the fact that the actual value of goats is not generally realized. The



Angora Goats Clearing Land in Kittitas County.

farmers who have them, as a usual thing, would not want to part with them. They are particularly valuable on logged-off areas, especially hill lands, and where there is plenty of underbrush, as this is the sort of stuff they thrive on, gradually clearing the land by eating up the small tree growth. At the same time they aid materially in improving the pasture, as goat manure is considered equal to that of sheep as a fertilizer. The mohair will fetch from 20c to 40c per pound, the fleece varying from 3 to 6 pounds in weight. The flesh of kids and yearlings makes excellent meat, preferred by many to mutton. They are also valuable for their skins and some classes will give from one to two quarts of milk per day. Taken all together, the goat will give a larger margin of profit than any other animal, and requires comparatively little care.

BEEES.

It is not necessary to dwell on the advantages of bee culture. Splendid opportunities exist for this enterprise, as there are many flowers consisting of clover, alfalfa, and fruit blossoms in both eastern and western Washington. It forms an excellent side proposition for the average farmer, especially such that have orchards, for the bee is considered a great benefactor in pollenizing the blossoms. There are upwards of 35,000 colonies of bees in the state, valued at about \$140,000. One farmer in ten keeps a few. The leading counties are Yakima, Clarke, Lewis, Skagit, Walla Walla, Whatcom, and Whitman. There is always a market for both wax and honey.

DAIRYING IN STATE OF WASHINGTON.

GENERAL DEVELOPMENT.

SOME IMPORTANT REASONS.

Perhaps no agricultural subject has of late years commanded greater attention in the State of Washington than that of dairying. There are several principal reasons for this. One of the strongest is the ever increasing demand for dairy products by a large and rapidly growing city population. Supplementing this is the immediate and certain cash remuneration that rewards the efforts of those engaged in the enterprise. Another of almost equal importance is the unquestioned value of the fertilizer secured and the resulting perpetuation of the productiveness of the land benefited thereby. However, the growth of this industry is far short of the needs of the people and the possibilities attendant upon the natural advantages afforded by the state for its successful propagation. Undoubtedly the present interest shown and the careful investigations being made by many engaged in the work will have a decided influence in adding impetus to its further development.

CENSUS FIGURES.

The census returns for 1910 give as the total number of dairy cows in Washington 186,233, valued at \$7,988,133. In 1900 there were 107,232 cows valued at \$4,076,189. Thus is indicated an increase of 73% in number of cows and 96% in total valuation. It can be seen from this that their valuation has increased about 1 1-3 times as fast as the number.

In point of number King county leads with 18,166. Other counties with more than 10,000 and less than 12,000 are Snohomish, Clarke, Whatcom, Skagit, Pierce and Lewis. Counties with less than 10,000 and more than 5,000 include Spokane, Whitman, Yakima, Stevens (including Pend Oreille), Thurston and Okanogan. Counties containing more than 2,000 and

less than 5,000 are Lincoln, Chehalis, Clallam, Walla Walla, Kittitas and Pacific. All the other counties with the exception of Skamania and Franklin were credited with between 1,000 and 3,000.

SUCCESSFUL DEVELOPMENT.

The numbers given above are not indicative of the proportionate degree of scientific advancement made in the various counties. This is shown not so much in numerical increase as in the improvement of the breeds, the enlarged productivity per cow, and the general care in related industries. Kittitas county, although one of the smaller counties in point of number of dairy cows, is unsurpassed in quality of butter and general scientific development.

The possibilities for excellent herd records are also being more thoroughly realized. "Boarders" are gradually being weeded out and greater care is given to methods of feeding as well as to the proper utilization of all side-products.

The results of such a study are well exemplified in the gradual increase of average milk production per cow of the herd owned by C. W. Orton, manager of the Orton Dairy Farm of Sumner. Mr. Orton, who daily ships his milk to Seattle, won first place among all contestants of the entire United States at Milwaukee last fall for the best certified milk supplied to any city. The following figures are given not as representing anything big, but as showing the steady increase which was made in a herd where the proper effort was made for improvement. Better cows, better feed, better housing, and better attention are responsible for the advance. The figures were taken in midwinter of each year:

<i>Date</i>	<i>Average milk production per cow.</i>
January 1, 1904.....	11 pounds
December 31, 1904.....	16 pounds
December 31, 1905.....	15 pounds
December 31, 1906.....	18 pounds
December 31, 1907.....	20 pounds
December 31, 1908.....	21 pounds
December 31, 1909.....	25 pounds
December 31, 1910.....	22 pounds
December 31, 1911.....	26 pounds

MANY MODERN DAIRY FARMS.

Other evidences of progress are seen on every hand. Sanitary conditions are carefully considered and all buildings are constructed with a view to the comfort of the cows and the greatest care for the milk. They vary from the humble, though sanitary wooden buildings of the small dairyman, to the large imposing structures of most modern design. The most modern dairy farm west of the Mississippi river is claimed by Washington. This is the Hollywood Ranch, owned by Fred Stimpson, just across Lake Washington and a few miles from Seattle, which city it supplies daily with certified milk produced from thoroughbred Holstein cows. In the same vicinity, as well as in different parts of the state, there are many others approaching this in thoroughness and completeness, representing the best purebred cattle, including Holsteins, Jerseys, Ayrshires, Guernseys, Durhams, as well as some good mixed breeds. Although it is not necessary nor advisable for the average farmer to expend for buildings sums of money out of proportion to his capital, nevertheless the presence of these shows the large confidence many men have in this as a dairy state.

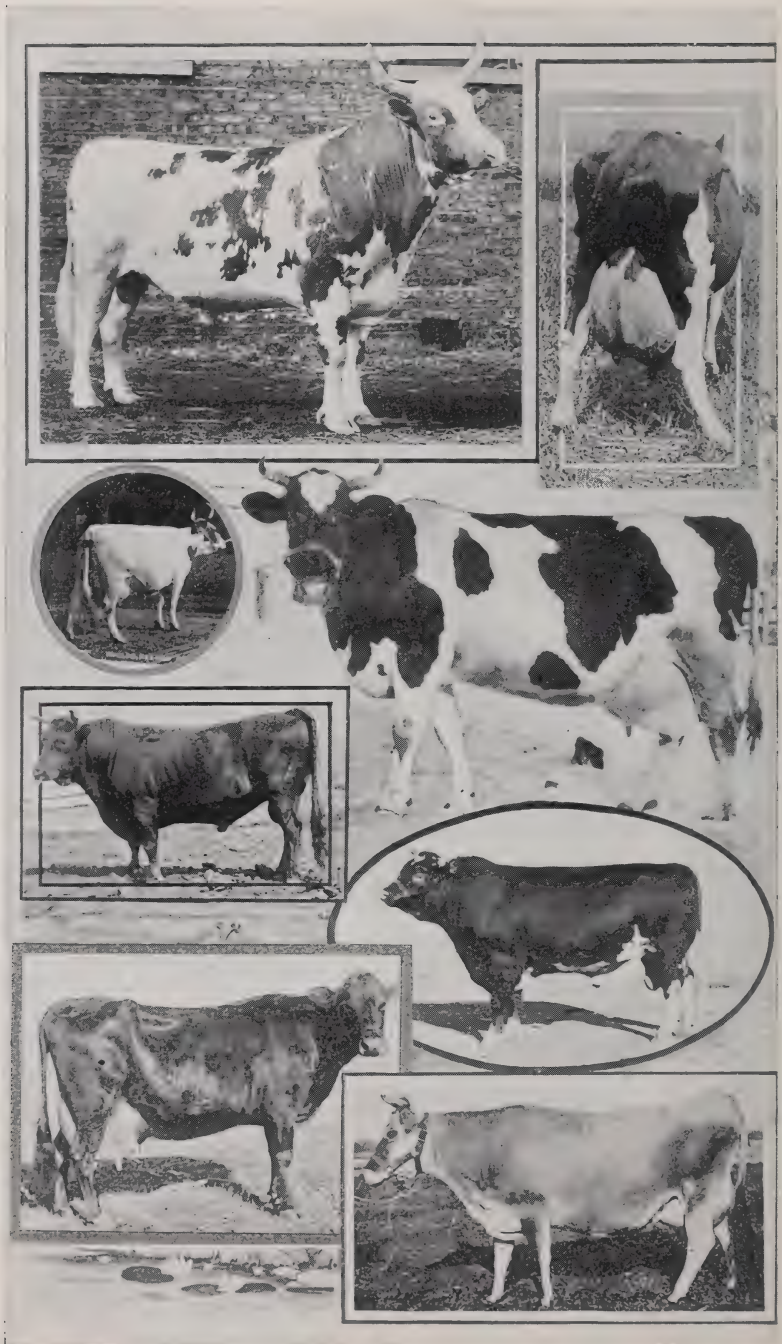
WORLD'S RECORDS.

It has been for the State of Washington to win the laurels for the development of a number of cows that have made world's records in their particular spheres. One of these, "Marjie Newman," a Holstein cow owned by Chas. Eldridge, of Chima-cum, Jefferson county, has broken all records for a single day's milk production. Her work is shown in the following figures:

136.5	pounds milk in	1 day
895.6	pounds milk in	7 consecutive days
2,555.1	pounds milk in	30 consecutive days
5.22	pounds butter in	1 day
33	pounds butter in	7 consecutive days
132	pounds butter in	30 consecutive days

The Munroe Company, near Spokane, has a cow which holds the world's record for all four-year-old Holsteins; her work being as follows:

35	pounds butter in	7 days
142	pounds butter in	30 days
2,886	pounds milk in	30 days



A Few World's Record Dairy Cattle.

"Peter Pan," Grand Champion Bull of Great Britain and America; "Marjie Newman," "Netherhall Brownie 9th," "Bonnie Lass Pauline," "Gerties Stokes Pages," and other prize winners. See pages 19, 21 and 49.

J. W. Clise, who owns a large dairy farm of purebred Ayrshires near Redmond, 12 miles from Seattle, was the owner of "Netherhall Brownie 9." This cow broke the world's record for all Ayrshires both in milk and butter fat production for 365 consecutive days. Her official record for that period was 18,110 pounds of milk and 820.91 pounds of butter fat.

John L. Smith, manager of the Hazelwood Holstein Farms in Spokane and Ferry counties, claims two world's records for butter production. "Hazelwood Aaggie DeKol," three and a quarter years of age, bred in Spokane, produced 34.89 pounds of butter in 7 days and 103 pounds of milk in one day, the former record for three-year-olds being 3½ pounds less. "Gerben Queen" made a new record for cows over 8 years old, producing 36.41 pounds of butter in 7 days and 134.30 pounds in 30 days; milk, 122 pounds in one day. Her stable mate "Bonnie Lassie Pauline," 5 years old, produced 33.78 pounds of butter in 7 days and 133.67 pounds in 30 days.

OTHER GOOD RECORDS.

By way of further example of the advancement made in Washington's dairy industry, the following splendid records were supplied by the dairy and food inspector, showing the work of a few prize winners at the state fair which took place at North Yakima in September of 1911. No account of feed consumed was kept. The cows were tested twice a day for two days in succession. The skim milk was estimated at 20c per cwt., and the butter fat at 30c per pound.

WM. TODD & SONS, OWNER.

Cascade Violet Cornucopia.

<i>Time.</i>	<i>Milk.</i>	<i>Test.</i>	<i>Butter fat.</i>	<i>Value of milk.</i>	<i>Value of butter fat.</i>	<i>Total value.</i>
September 28—						
5 A. M.....	24.6	4.0	.984	\$0.049	\$0.295	\$0.344
1 P. M.....	23.6	3.8	.897	.047	.269	.316
8 P. M.....	22.0	2.4	.528	.044	.158	.202
September 29—						
5 A. M.....	28.6	2.3	.658	.058	.197	.255
1 P. M.....	28.2	2.6	.733	.056	.220	.276
8 P. M.....	25.9	3.8	.984	.052	.295	.347
Total or aver....	152.9	3.12	3.78	\$0.306	\$1.434	\$1.740

A. C. MILLS, OWNER.

Bracelet Baker of Hazelwood.

<i>Time.</i>	<i>Milk.</i>	<i>Test.</i>	<i>Butter fat.</i>	<i>Value of milk.</i>	<i>Value of butter fat.</i>	<i>Total value.</i>
September 28—						
5 A. M.....	31.5	2.7	.851	\$0.063	\$0.255	\$0.318
1 P. M.....	29.9	2.8	.837	.060	.251	.311
8 P. M.....	29.0	3.2	.928	.058	.278	.336
September 29—						
5 A. M.....	29.1	2.2	.640	.058	.192	.250
1 P. M.....	29.0	2.6	.754	.058	.226	.284
8 P. M.....	25.5	2.8	.714	.051	.214	.265
Total or aver....	174.0	2.71	4.72	\$0.348	\$1.416	\$1.764

W. O. MORROW, OWNER.

Morrow's Select.

<i>Time.</i>	<i>Milk.</i>	<i>Test.</i>	<i>Butter fat.</i>	<i>Value of milk.</i>	<i>Value of butter fat.</i>	<i>Total value.</i>
September 28—						
5 A. M.....	17.1	4.9	.838	\$0.034	\$0.251	\$0.285
1 P. M.....	16.0	5.2	.832	.032	.249	.281
8 P. M.....	13.8	5.7	.787	.028	.236	.264
September 29—						
5 A. M.....	18.1	4.9	.887	.036	.266	.302
1 P. M.....	16.2	5.7	.923	.032	.277	.309
8 P. M.....	14.2	6.3	.895	.028	.268	.296
Total or aver....	95.4	5.41	5.162	\$0.190	\$1.547	\$1.737

Many other cows of various breeds and in different parts of the state have produced enviable records and help to demonstrate by practical results that Washington is admirably suited to this industry, comparing well with the best known dairy sections of the world.

In the following pages an attempt will be made to show from the immigrants' standpoint many other reasons why the "Evergreen State" is splendidly adapted to this line of work. Markets, general opportunity, profitability, etc., will all be discussed in order.

ADAPTABILITY OF WASHINGTON FOR DAIRYING.

Nearly all sections of the state are suitable for dairying, since practically all parts are blessed with the natural conditions necessary for the success of the industry. The other features such as markets, transportation, general profitability, etc., being discussed at length on other pages of this pamphlet, the following paragraphs will be devoted to a summary of the natural advantages alone.

THE COW A FACTORY.

Conducting a profitable dairy business is not a question merely of whether a cow can live in a certain section, but one of where she will thrive to the very best advantage and contribute the largest percentage of profit to the owner. Since she is likened to a factory in that she takes raw material and turns it into refined products suitable for domestic consumption, the problem resolves itself first of all into determining the place where this manufacturing process can be carried on with the greatest showing in the way of returns. Cheap feed, large milk production per cow, big percentage of butter fat, and a stiff price for butter and cream would constitute the main features for a dairyman's happiest dream. Although it can never be expected that he will feel absolutely satisfied with conditions anywhere, still it must be admitted that the State of Washington offers as fair opportunities for the realization of this dream of bliss as any other section of the entire world. All that is needed to insure the greatest possible contentment is a proper manipulation of the many splendid advantages.

TOPOGRAPHY.

Topography, soil, water, vegetation, climate, and general freedom from discouraging diseases are all natural advantages created for the best interests of the dairy cows of Washington and for contributing in the largest measure to the general satisfaction of the people. The mountains and highlands of Washington have an important influence on all other conditions.



125 bushels of Oats to the acre is not uncommon in Washington.

Besides having a general influence on the climate they form repositories for vast stores of moisture which in the spring and summer time flow in many a beautiful stream down to the fertile valleys below, contributing plenty of pure water for the farms in nearly all parts of the state.

CLIMATE.

The climatic conditions necessary for success in any livestock enterprises are particularly favorable. Freedom from extremes of any kind as well as from sudden changes, such that in many states often cause great loss and suffering, is an advantage peculiar to the great State of Washington. All parts of the state are noted for the general mildness of the winters, as there is seldom a day when the cows may not be turned out into the fields, thus giving them throughout the year the benefits of sufficient exercise, and plenty of fresh air. For those who have considerable pasture land this forms a very important item of feeding as in many cases pasturage can be utilized which might otherwise go to waste.

The annual normal temperature for western Washington, as deduced from a long period of years, is about 51 degrees; for the country in the vicinity of Spokane about 48 degrees, and near Walla Walla 53 degrees. The lowest monthly normal for the same period in the vicinity of Seattle is 39 degrees, near Spokane 27 degrees, and Walla Walla 33 degrees. The highest monthly normal near Seattle is 64 degrees, Spokane 69 degrees, Walla Walla 74 degrees.

The mean temperature in some localities for the year 1910:

	<i>Lowest monthly.</i>	<i>Highest monthly.</i>	<i>Annual.</i>
Aberdeen	37.4	58.3	49.5
Bellingham	37	61.9	50.2
Olympia	36.9	62.2	50.1
Seattle	38.3	62.6	50.9
Tacoma	37.8	62.6	50.6
Vancouver	35.8	67.6	52.7
Wenatchee	24.2	71.4	48.3
North Yakima	27.5	74.4	51.8
Spokane	36.2	71.6	49.5
Walla Walla	30.8	76.2	53.9
Ellensburg	21.4	68.6	47.1

SOILS.

The soil is so varied in the different sections that it would be difficult to give in the space permitted here any fair description of the different varieties as they exist; however, the state college has published bulletins on this subject which may be secured on application to the director of the Experiment Station at Pullman. The chief item of interest to most people is whether there can be produced in sufficient abundance a varied vegetation suitable for the well balanced ration of domestic animals.

VEGETATION IN WESTERN WASHINGTON.

That these soils yield large crops well suited for dairy cattle is certain. The best kinds of forage crops known grow profusely. Prof. H. W. Sparks, superintendent of the Department of Farm Demonstration of the Washington State College, in an article which appeared in the *Oregonian*, says:

“We believe there are few if any places in all our land that offer as many inducements to the home-builder as parts of western Washington, possessing as it does a climate and soil that produces wonderful results. We have measured and weighed twenty-seven and eight-tenths tons of the best quality of forage crops for the dairy cow per acre. We have seen three crops from the same land in one season; two of vetch and grain followed by corn that matured sufficiently for excellent feed.”

At the Western Washington Experiment Station at Puyallup there have been produced excellent crops illustrating the possibilities of western Washington.

Carrots	46.5—67.9	tons per acre
Mangels	50	—77.4 tons per acre
Rutabagas	38	—50.2 tons per acre
Thousand-headed kale.	66	tons per acre
Marrow cabbage	80	tons per acre
Field peas (seed).....	45	bushels per acre
Rye	34	—50 bushels per acre
Winter wheat	50.5	bushels per acre

Oats may be raised in quantities ranging from 50 to 125 bushels per acre. Vetch hay will go as high as 25 and 30 tons per acre. Clover, timothy, and all grasses yield very heavy, thus making the feed problem a very simple one.

The kale mentioned above is very hardy and will keep green the year round, while the marrow cabbage will stand the greater part of the year. It is estimated that this latter will, under most favorable conditions and when its cultivation is more thoroughly understood, produce as high as 100 tons to a single acre. By picking off the leaves as needed, these plants will supply excellent green feed for all the dry period and nearly all the winter season.

EASTERN WASHINGTON VEGETATION.

In eastern Washington the fresh feed problem is well solved by the large crops of alfalfa, peas, and corn. Alfalfa is considered one of the best all-round forage plants in existence and will yield from 4 to 10 tons of hay per acre. This will produce more rapid growth in the cattle than anything in eastern states. One breeder claims to have raised yearly heifers weighing 1,000 pounds, and nine-month calves weighing 750 to 800 pounds. Alfalfa is also a good milk producer as is certified to in many of the statements contained elsewhere.

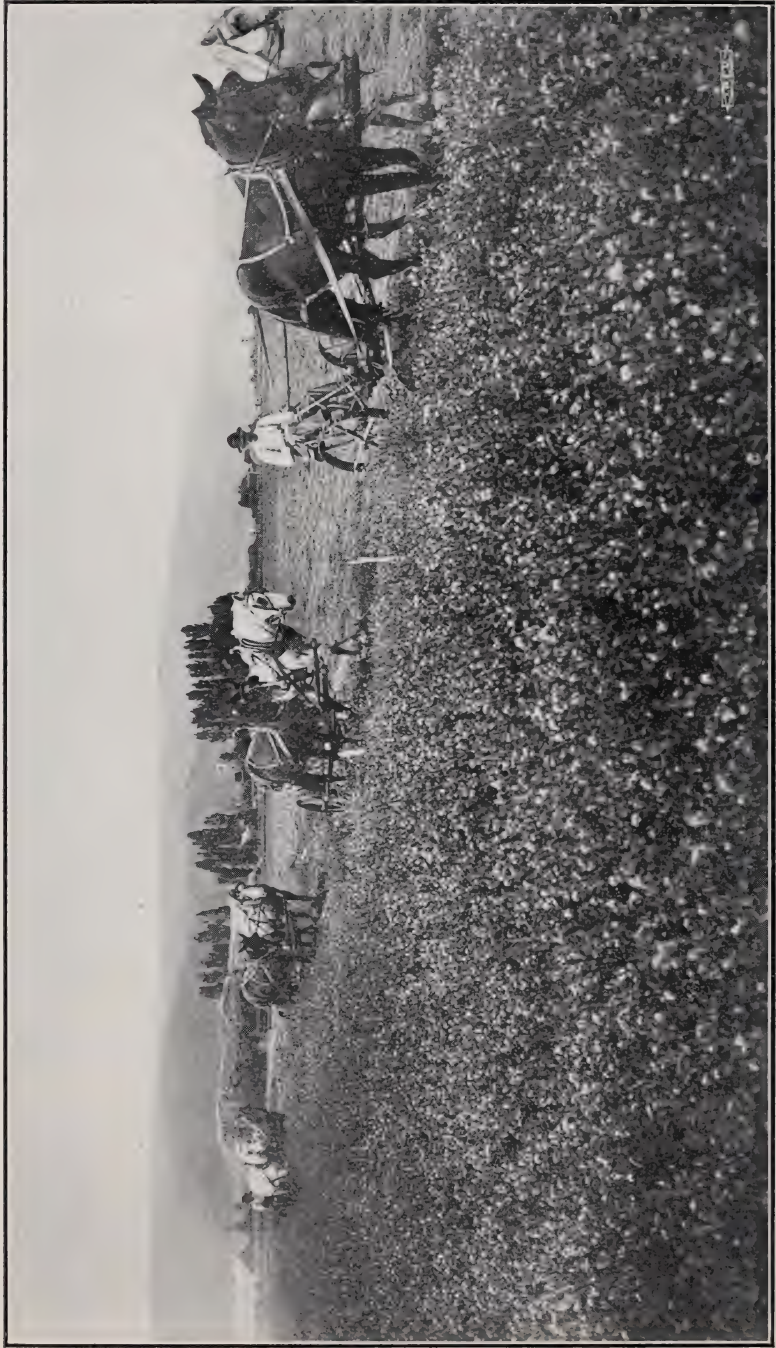
Timothy, clover, root crops and all the cereal grains are raised so that a good variety of feed is attainable, making it very practicable to secure the best kind of a balanced ration the year round.

SOME SUCCESSFUL MEN.

The adaptability of the different parts of the state for this industry as well as the related side industries is further shown by the experience of men in various localities. Space forbids quoting from more than a few.

W. R. Thomas, Ellensburg, Kittitas county, has about 600 acres of land and is engaged chiefly in cattle raising.

"Stock raising and dairying is the chief enterprise of this valley. I have 600 acres of land, somewhere near 400 head of cattle, 35 or 40 head of horses, and from 15 to 20 milch cows. I keep hogs enough for family use, but do not often sell any. It does not cost very much to keep what hogs I need, for I always have skimmed milk, and lots of fruit, and I feed quite a lot of apples and pears that are specked and not salable. I like the Poland-China hogs better than any other, and for range stock I like the Short Horn, and for dairying purposes my



Alfalfa, the best all-round feed in the world, will yield from 4 to 10 tons per acre.

favorite stock is a cross between the Short Horn and the Jersey. * * * I raise about 200 tons of hay, some alfalfa, some timothy, some timothy and clover, and some grain hay."

Mr. W. H. Taylor, Malo, Ferry county, Washington, says:

"* * * This being a mountainous country, partly, there is considerable range for cattle when not in milk. We keep 10 Jersey cows, not all in milk all of the time. Some farmers milk Durham and mixed breeds in summer, not in winter. We raise alfalfa and grain hay, and feed carrots in winter. We raise grain and potatoes for market; therefore, we are not exclusively dairymen, but if it were followed as a business could be carried on very profitably. This being practically a new country there are but few farmers prepared to carry on dairying properly."

Bernhard Papken, Curlew, Ferry county, says:

"I have been a resident of this section for the last 10 years and find that with practical farming, anyone is able to do well. But as anywhere else good common sense is needed. My farm is located on the south slope and irrigation is very beneficial if procurable. I use the water in the early spring for timothy, clover and alfalfa. The main thing that we need in this country is some good intelligent farmers that have lots of energy."

Jacob Broderius, Northport, Stevens county, says:

"The country surrounding is adapted for dairying and fruit raising only, and I do not believe there is a better spot in the State of Washington. Our surplus goes to the mining camps of British Columbia. There are several places for rent or for sale. All we lack are people that are willing to work. They can all make a good living and a little money. Land is ranging from \$10 to \$50 per acre. I have several ranches for rent at very small price. Kindly write me for any other information."

A wide-awake farmer of Nile, Yakima county, says:

"I find the best way of marketing hay here, is to feed it to the cows and sell the cream, as in that way it brings me more than double market price. In comparing this country with the east; I was in old Pennsylvania five years ago and visited a dairy there; a few days they fed their cows (pure bred Jerseys) ground oats, oil meal, malt and all kinds of things. When I came home mine were giving three times the amount of milk on straight hay. My barn cost about twelve hundred, theirs cost that many thousand. I feed all the hay the cows will pick over and then feed stems to young stock. I pay out about \$800 for hired help per year. Two creamery companies come to the farms for cream."

MARKETS AND TRANSPORTATION.

IMPORTED INTO WASHINGTON.

With the present means available it is difficult to obtain exact accounts of the annual imports of dairy products into the State of Washington. However, from figures gathered by Hon. L. Davies, the state dairy inspector, it is estimated that the shipments amount to at least \$7,000,000 annually. This is a very conservative figure and the probability is that it will approach the \$10,000,000 mark. In fact it is believed by some commission men that 75% of the butter and 90% of the cheese consumed in the state is imported. One firm alone shipped 1,000,000 pounds of butter and 10 cars of cheese in the year 1911, while several others brought in similar quantities.

SOURCES OF SUPPLY.

Kansas and Nebraska seem to be the main sources for our butter supply, while Wisconsin and Oregon send us much of the cheese. Other important states are Minnesota, Iowa, the Dakotas and California. Since the freight from the Mississippi states amounts to about 2½¢ a pound on butter and cheese, the Washington farmer can always consider this as an added advantage when competing with imports from that locality.

LOCAL CONSUMPTION.

Nearly all imported goods are for consumption in the large cities. The continually increasing population of these centers tends also to the creation of a great demand for what are usually termed luxuries and especially ice cream. Those owning dairies within or close to these cities have a splendid opportunity to dispose of the fresh milk and sweet cream at the very best prices.

E. E. Flood, superintendent of the Broadview Dairy Farm, Rosalia, Whitman county, where 550 cows are milked daily, says:

“The real reason why we milk so many cows is that we are compelled to supply our trade in Spokane, and milk that is

supplied as we do brings a high price, 20c per gallon on the farm."

However, it is no longer necessary for the farmers to rely on the local trade. The creameries and condenseries will take all the milk and cream they can secure, manufacturing it into products that are famous the world round.

ALASKA GOOD MARKET.

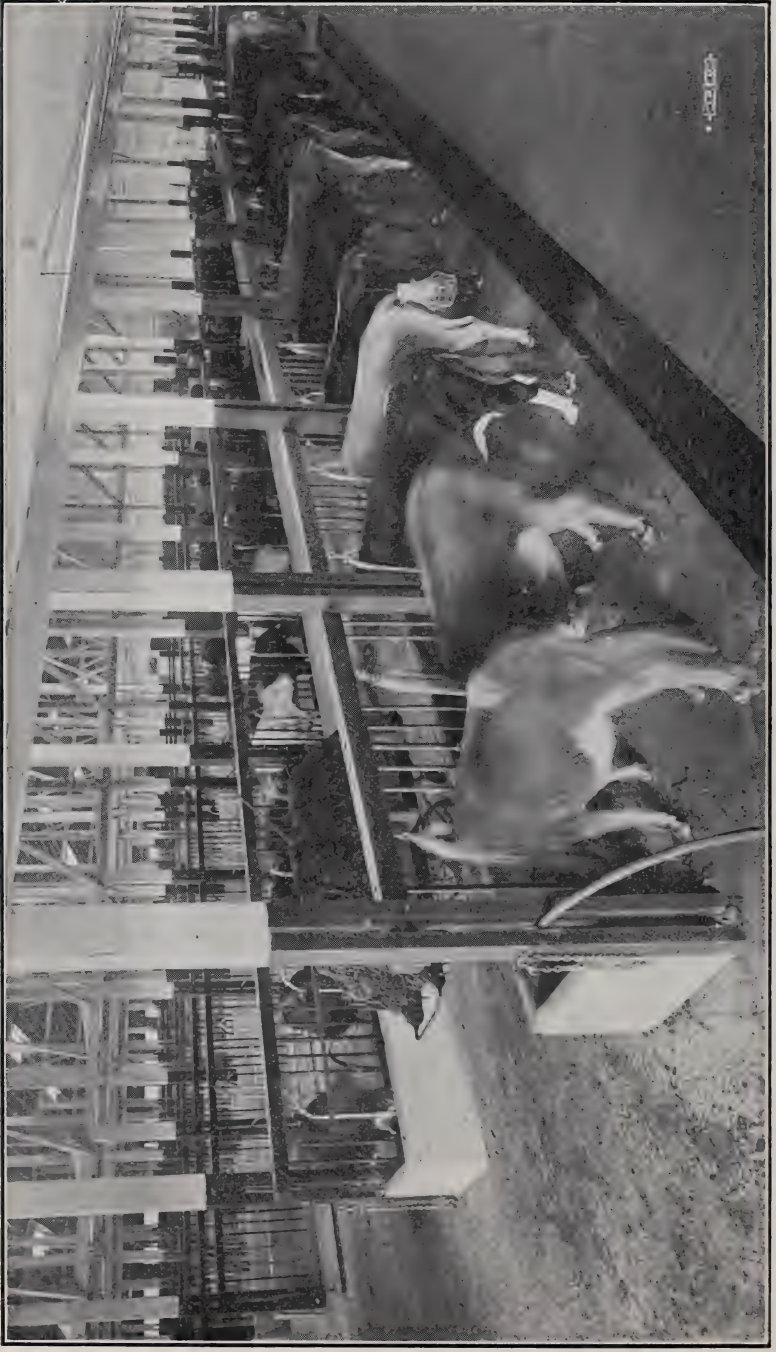
One of the best outside markets for Washington products and one which is bound to grow with the future development of the country is the territory of Alaska. Although at present in her infancy, but with rapid advancement assured, she will undoubtedly soon require much larger shipments of Washington's sweet flavored butter, and rich condensed milk.

NEARLY 200 CREAMERIES.

Nearly 200 creameries were reported by the dairy and food inspector for the year 1910, about three-fourths of them being in the counties of western Washington. Some of these have difficulty in securing the amount of cream corresponding to their capacity. The method employed by many of these concerns, which are usually established in the midst of rapidly developing dairy sections, is to send out wagons at regular intervals, two or three times a week, and collect from the farmers their accumulated cream, paying prices according to the percentage of butter fat contained. These prices run from 30c to 40c per pound. Since nearly every Washington dairyman has a separator, this makes a very convenient method for disposing of his product. In fact the inducements to sell are usually so good that many a farmer hesitates at using much pure cream or whole milk for domestic purposes, preferring to turn it into the ready cash with which all other needs can be so readily satisfied.

THIRTEEN CONDENSED MILK PLANTS.

There are thirteen condensed milk plants located as follows: Two at Mt. Vernon and one each at Everson, Ferndale, Stanwood, Snohomish, Monroe, Issaquah, Kent, Auburn, Chehalis,



A Thurston County Modern Dairy Barn, owned by A. L. Brown, Sherlock.

Montesano, and Washougal. The total output of these plants amounts to between \$4,000,000 and \$5,000,000 yearly, utilizing in the neighborhood of 125,000,000 pounds of whole milk. Although much of this is consumed in the state the larger portion is shipped to points outside, as a strong demand exists for Washington's condensed milk in all parts of the world. With this outside demand steadily increasing, there is scarcely any danger of overdoing this phase of the industry, so long as the farmers will supply the necessary quantity of milk. Wherever plenty of milk can be obtained there is usually capital willing to start such an enterprise.

TRANSPORTATION.

The successful marketing of dairy products is closely linked with the transportation facilities of the country. That these are ample in Washington is best demonstrated by a statement of figures.

There are nearly 6,000 miles of steam railroads in the state, besides many miles of electric interurbans, forming a veritable network of rails and connecting the large centers with nearly all the smaller communities. It is quite common also for the railroad companies to supplement the regular service with single gasoline cars that really fulfill all the requirements of the usual electric interurban. Public highways are constantly receiving great attention from both state and county authorities. Very few sections of the state are without good roads and the expectations are that the next legislature will appropriate over a million dollars more for the creation of broad thoroughfares.

Nearly 1,200 miles of river have been made navigable while 2,500 miles of water front secures excellent transportation between the sound and coast cities. It is a common sight at many stations in the dairy regions to see, almost any day, the regular accumulation of milk cans waiting for the daily express, the interurban or the river or sound boats to ship them to the large cities, the creameries or the thirsty and insatiable condenseries.

VALUABLE HELPS FROM STATE AND INDIVIDUALS.

The prospective dairyman may feel assured that all reasonable assistance will be rendered by state authorities, local organizations and private individuals for the purpose of increasing his chances of success. It is thoroughly realized that the future of Washington depends upon the prosperity of each individual worker.

DAIRY INSPECTOR.

A state dairy expert with several deputies is employed to assist and advise the dairymen in the best and most advanced methods of carrying on the work. Every dairy farm in the state is visited and valuable suggestions are given wherever needed or requested. Up to November 1, 1910, 5,904 dairies had been visited, including 63,469 cows. The following extract from the last biennial report of Hon. L. Davies, the present state dairy and food inspector, indicates the extent of the work contemplated:

"Care is taken in these visits to give all the time needed at each place, and in many instances but from three to five dairies are visited a day, and not to exceed eight to ten in any case. While at the dairy farms talks are had with the proprietor, and wife and children if possible, on any subject he desires relative to the dairy industry. Rather than 'you must do thus and so' statements, our talk is advisory and why it will be better for the people to do as we require, as well as better for the financial interests of the dairymen. The talks thus given cover feeding and breeding of cattle, sanitary conditions of cattle and all buildings and utensils, construction of barn and milk house, condition of employes, care and condition of utensils, care of the milk and cream as soon as produced and until same is in the hands of the consumers; in fact, everything connected with the production of a good, sanitary and pure dairy product is discussed.

"This instruction is carried to all dairymen wherever their product is sent, whether to city milk supply, creamery, cheese factory, or condensory. It is a pleasure to state that fully 90 per centum of the dairymen appreciate the instructional work, and reports from second visits to sections thus thoroughly gone over demonstrate that the work is bearing fruit and a much better dairy product is coming from these sections, and a much greater interest is being manifested by the dairymen in the grade of their output and consequent increased financial

return to them. Creameries, condensers and those handling dairy products are, to a great extent, lending a helping hand in this work."

The deputy inspectors as well as the professors of the state agricultural college hold many public meetings at convenient centers for the purpose of giving more extensive suggestions to the people in that vicinity.

STATE INSTITUTIONS.

In addition to much valuable institute work the State College maintains a special dairy department. Complete courses are given, covering all the features connected with the various branches of the dairying industry. This course, like other departments of the college, are free to all residents of Washington. The State University at Seattle is also ready with its laboratories to render any assistance possible.

EXPERIMENT STATION AND FREE PAMPHLET.

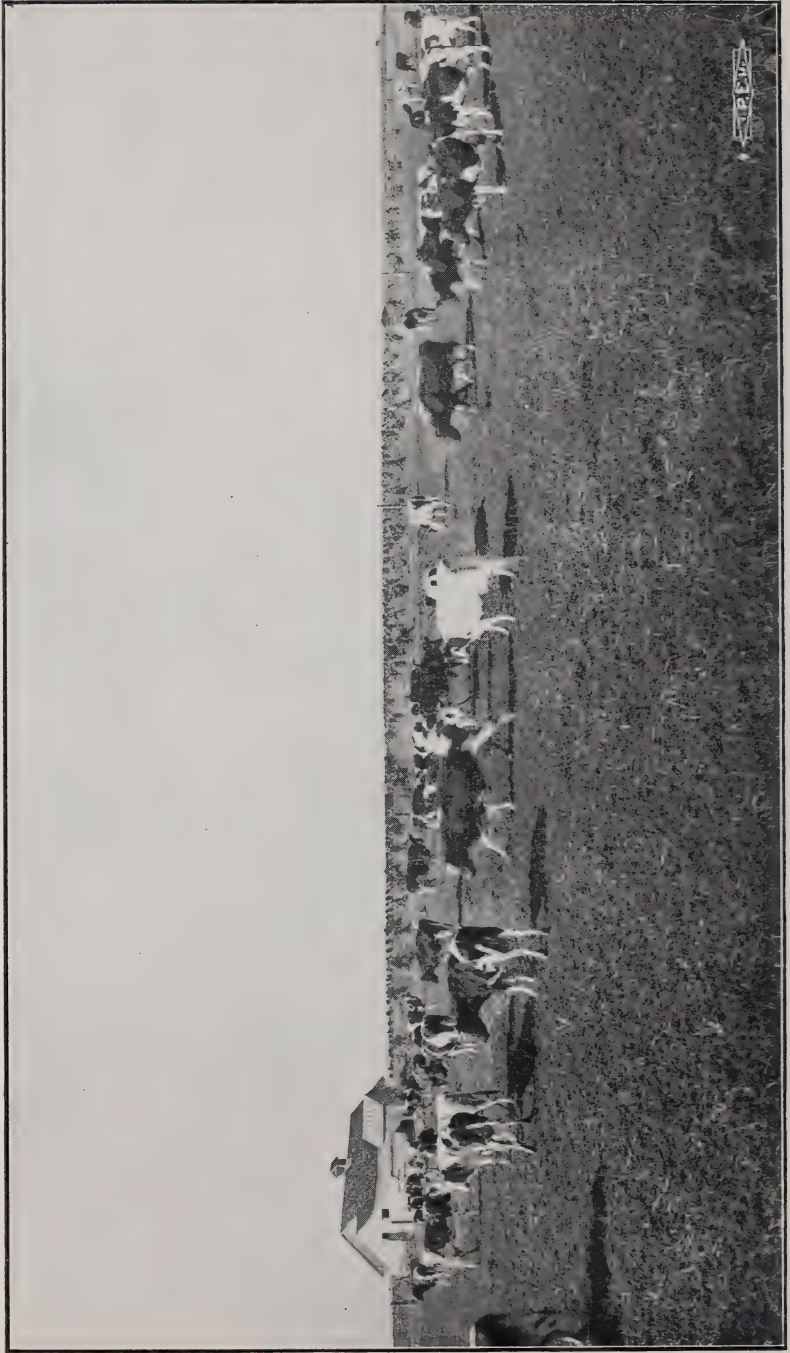
In connection with the State College are three experiment stations, one at Pullman, one at Puyallup, and one recently started at Grandview. The results of the experiments are always published in pamphlet form and freely distributed among those requesting them. Individual help is willingly rendered to any persons or organizations making their wants known.

COW TESTING ASSOCIATION.

Although somewhat new as in other parts of the United States cow testing associations are already well entrenched as one of the necessary accessories of a rapidly developing dairy industry. There are now five of these, two at Mt. Vernon, and one each at Enumclaw, Arlington, and Chehalis. About 2,500 cows are included in the work.

FAIRS ARE HELD.

Each year many agricultural fairs are held. These include interstate fairs, a state fair, a southwestern Washington fair, inter-county fairs and local county fairs. By means of prizes and other various helps, these fairs offer splendid encouragements to those attempting to obtain the best results in the dairy industry.



Eastern Washington Dairy Scene, with wheat fields in the back ground. Taken near Spokane.

STATE DAIRYMEN'S ASSOCIATION.

Another organization of inestimable value to the dairyman is the State Dairymen's Association which meets annually and discusses the common problems relative to such work. Great interest is shown and many attend. Besides talks from local men of practical experience, splendid addresses are given by professors from the State College, the state inspector or his deputies, and representatives of the United States Department of Agriculture. The officers and committees appointed, champion the needs of progressive dairying before the state legislature and help in other ways to advance the dairying profession. The results of the meetings are embodied in verbatim reports, published soon after adjournment.

GENERAL SPIRIT OF HELPFULNESS PREVALENT.

Besides the foregoing, there are many live commercial organizations always willing to promote the best interests of the surrounding country in any way possible, while successful private individuals are usually ready to give the results of their own experiences to persons requesting them. Pervading the entire state is one general spirit of helpfulness which manifests itself on every propitious occasion.

OPPORTUNITIES FOR GETTING STARTED.

Washington teems with good chances for the beginner as well as for the experienced dairyman. The added advantage of sufficient capital, however, must not be overlooked in this as in other business enterprises. Just how much one should have is always difficult to estimate as the location contemplated and previous experience will affect these figures considerably. It will be seen by reading some of the accounts given elsewhere in this publication that some men have started out with almost nothing and have still made a splendid success of the work.

PURCHASING OR RENTING A DAIRY.

There are several ways in which one might start. One is to purchase or rent from some well established dairyman, who wishes to retire from the work. Opportunities of this kind, to be sure, are rare, as the average dairyman is too well contented with the work and the future prospects to readily give up so certain and pleasant a means of making a livelihood. Still there are occasional chances on account of some wishing to withdraw from a business that must necessarily require close application on the part of the owner. One may get track of these places by communicating with commercial bodies and individuals. Renting is usually for a cash consideration or for about one-half of the proceeds. However, there is much variation in this respect, depending partially on the amount of equipment supplied with the farm.

WORKING FOR OTHERS.

Those who are already familiar with the industry but lack capital or who possessing capital desire to learn something about the country will find many opportunities to hire out to someone else. Many dairymen are anxious to secure steady men who like the work and who would be apt to stay a reasonable length of time. The wages for such employment are from \$35 to \$50 per month for milkers and \$75 to \$150 per month for managers or superintendents. These prices of course include board. Just as in any other line of hired work the applicant for the best positions must have had some previous scientific training.

PURCHASING LAND.

In purchasing land one should first satisfy himself that he and his family will prefer a certain locality and then seek one of the good opportunities to be obtained in that vicinity. In most parts one can secure land totally improved, partially improved, or all unimproved. The best chances, if not always the quickest, usually lie in securing the cheap unimproved lands that are offered for sale by private parties.

How many acres one should get would depend on the capital one possesses and the scale on which he wishes to launch into

the business. By the soiling method one acre will do the work required of two or three when pasturing chiefly. There are some who purchase practically all their feed and make a good profit. In such cases very little land is required. Right in the large cities, in the less crowded and newer sections, there are a few dairies conducted in this way as well as many on the outside. The increased opportunities of securing highest prices for milk and cream more than compensate for the additional cost of feed and necessary land.

COWS.

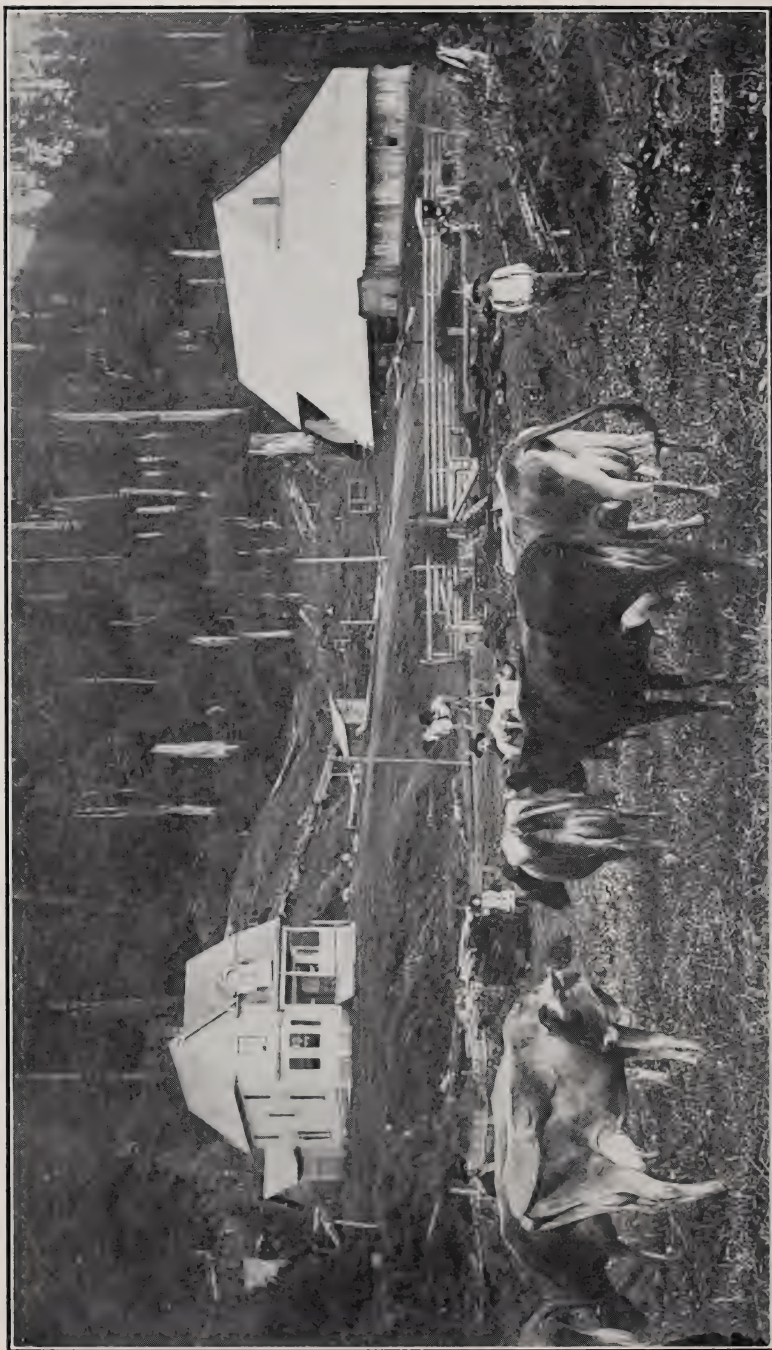
It is seldom safe for a person to start in a new place on a large scale. The best dairies are built up from a few well chosen cows and a purebred bull. Good grade dairy cows can be bought for from \$50 to \$100 apiece. The purebred will cost even more. The tendency now among many progressive farmers is to work gradually towards a herd of all purebred cows. Fortunately nearly all good breeds do well, each having its special admirers. The Jersey, the Holstein, the Guernsey, the Ayrshire, the Durham as well as many mixed breeds are popular.

However, there is a great deal in understanding thoroughly the kind with which one is working.

LOGGED-OFF LANDS.

Much logged-off land may be found in almost all parts of western Washington and in the northern counties of eastern Washington. In western Washington alone there are between 2,000,000 and 3,000,000 acres of this available for agricultural purposes and ranging in price from \$8 up to \$75, depending partially upon the nearness to stations and the degree of clearing that it has received. Such land can be bought in almost any size tracts. It is eminently fitted for dairying since it makes excellent pasture long before the stumps have been cleared out.

H. W. Ohlde is a typical example of what perseverance and pluck will do for the settler on such land. Mr. Ohlde's experi-



A Home Scene. Logged-off Land and Dairy Cattle go well together.

ences probably represent the most difficult that a man might have on logged-off land and yet in his estimation there is no comparison in the final outcome between the success that can be attained in Washington and in many states that have neither trees nor stumps. The following is his own statement:

"I settled here on 40 acres of logged-off land, upland, 8 years ago. A number of old settlers advised me not to, could not make a living, it had been tried long enough. I had \$950.00 to start in with, had to support a wife and three children. I would not take \$10,000 for what I have today. The most money I made off of chickens and cows. A man wants to cut the brush first thing, and get grass and clover started so as to get the cows; it don't pay to raise crops without manure. Clover will grow without manure.

"I had small green timber from 10 to 12 years old. In such case a poor man has to take out the little stumps first and cut the hay by hand. I have to cut my hay by hand yet. Last year I got about 35 tons, paid \$2.50 a day for a man to help me. The rest of the feed I had to buy. I paid about \$1,000 for hired help last year. We have six children but too small to help me. But I have been able to pay off \$850 debts without cutting my herd of cows down, but I am going to cut it down next summer so as to get more time to clear the land. I think the cleared land, without stumps, will be worth about \$400 per acre. For all the work I've done out here I got paid, but in Kansas I sometimes worked the whole year, hard too, and got nothing for it and no crop. I make more here in the summer in one month out of cream, than I did all the year in Kansas. Hurrah for Washington."

EASTERN WASHINGTON.

In eastern Washington, besides the logged-off land in the northern part, the settler who prefers, will find plenty of land irrigable from ditches or from wells. Close to the river and near some of the lakes pumping propositions are being found very successful, also away from the stream where well water can be obtained without boring too far. Most land under ditches and with water rights will cost \$200 and up per acre.

However, it is not necessary for a person to depend entirely on raising his feed, since here he is in the midst of a great hay and grain country. Many farmers, even in western Washington ship alfalfa from east of the mountains and feed it to their stock at a profit. Surely those right in the midst of this hay country ought to be able to do at least as well. This fact is

demonstrated by the experience of H. B. Davis, a prominent dairyman of Granger, Yakima county:

"From August 1, 1910, to August 1, 1911, by weighing each milking from each cow and testing one and two times per month—a composite sample of 1 da. milk—I found that from my herd, pure bred Holsteins, I got an average of over 11,000 pounds of milk, making over 500 pounds of butter, 8% fat, per cow at an average age of 3½ years, for an average milking period of 330 days. Cash returns for butter fat were \$126.00 per cow. These cows were fed and cared for under the soiling system, not being pastured a single day. Alfalfa was used as hay and for soiling purposes. I found it cost me \$75.00 per cow for feed, having fed 1 pound rolled barley for each 8 to 9 pounds of milk produced. I consider the skimmed milk and manure pays well all labor, especially with hogs and calves fetching the present meat prices as well as those of last few years. When fed as I feed it does more. I feed it to pure bred calves and hogs, selling all calves for breeding purposes and most of the really extra pigs for breeding purposes.

"When making pork I feed milk and alfalfa pasture or hay according to season, until 4 to 6 weeks of marketing time when I feed all the grain they will consume without waste, selling the pigs at 5½ to 6½ months old at an average weight of from 175 to 215 per lot, these weights covering my lightest and heaviest in a number of years for the different lots of twice a year. Should you want any further details send me list of questions covering the different phases and I will give it my attention as I am sure many thousands of people have gone elsewhere that would have come here had they known the possibilities of this state as a dairy and stock raising country."

OTHER LANDS.

There is also much land in Washington that cannot be classed as logged-off land or as irrigated land. Much of this is included in the upland prairies that lie east of the Columbia river, extending clear to the eastern boundary line, and between the mountains of the northern counties and the southern boundary of the state, comprising a region known as the Inland Empire. Within this are the famous Palouse and the Big Bend countries where most of the grain is raised. The splendid prices secured for wheat have caused more farmers to engage in that industry and to neglect the possibilities of dairying. However, it can be developed into a splendid dairying country and land can be secured at very reasonable prices, much of it well improved. There are already a number of creameries in this section and more will be encouraged with the further growth of the dairying industry.

PROFITS FROM DAIRYING.

The deciding element which influences most people to undertake a new industry or to continue a familiar one under different conditions is the probability of satisfactory remuneration. In regard to dairying it may safely be said that when proper care is taken, proportionate profits are practically certain of realization. In some cases, when conditions are especially favorable and the manager is thoroughly versed in the details of the business, the results may be far beyond expectations. Generally it must be kept in mind that profitability is more or less a relative term. Many men consider they are losing money if it turns out that they might have made more at some other occupation or if it should appear that the percentage of profit would have been greater by selling the crops than by feeding to cows.

ALL ITEMS SHOULD BE COUNTED.

In estimating profits all elements that contribute in any way should be taken into consideration; capital invested, time consumed, market prices of feed, yield of the individual cow, price of products, certainty of market, expense of transportation, relative adaptability of the dairyman for his occupation, milk fed to calves, hogs, and chickens, products consumed on the table, average loss from different causes, life of the cow, cost of keeping her in health, her value after she begins to depreciate and many other general points bearing more or less on the industry. The fertilizing feature is one that is beginning to be appreciated more and more; this to such an extent that on many farms dairy cattle are kept because they supply the cheapest and easiest method of keeping up the soil fertility. Money paid in hand represents only a part of the benefits received.

PROFITS ADMITTED BY DAIRYMEN.

Whenever the question is put fairly up to the average dairyman, he is bound to admit that dairying pays a good profit,



Sixty-five tons of Carrots to the acre.

even if he cannot agree that it pays him all he would like to get. When this question was put to the assembled members of the State Dairymen's Association at Montesano, December 6, 1911, practically every hand went up to indicate an affirmative answer. Among other questions asked by this department of the correspondents in all parts of the state was "Do you consider dairying profitable?" The replies indicated on another page of this pamphlet were practically all in the affirmative and many of them very emphatically so. The answers to the questions generally indicate the splendid spirit of contentment and satisfaction possessed by those engaged in the work.

POSSIBLE PROFITS.

Various percentages of profit are claimed. These differences probably indicate the variations in natural conditions, quality of cows, general management, and marketing. Naturally those located closest to the large markets will get the largest returns as there are many chances to dispose of the whole milk and sweet cream for general consumption purposes. However, if the added value of the land is taken into consideration the profits may not be much larger than from ranches a little further away.

On the well regulated farm, cows seem to yield to their owners all the way from \$50 to \$100 per year. In a few cases they will go much higher. With good quality cows a good average profit can be made in nearly every case, so that 20 or 25 cows will give a splendid income to the owner.

SOME SPLENDID HERDS.

The following figures represent the actual results of a herd owned by C. R. Worrell, of Wahkiakum county. The record is for the full year of 1910. The conditions were about average so that equally as good results should be obtained by any dairyman using proper care and diligence. Butter fat is estimated at 33c per pound. No allowance is made for the skim milk which at 20c per cwt. would increase the average profit from

each cow \$13.37, thus making the total \$84.06, while the net returns from the best cow would be \$117.63.

ACCOUNT FOR EACH COW.

No.	Age of cow.	Pounds of milk.	Average test.	Pounds of fat.	Value of butter fat.	Profit per cow.
1	15	7,642	5.2	397.38	\$131 13	\$88 00
2	17	6,121	5.0	306.05	100 99	57 86
3	9	8,338	6.0	500.28	165 09	121 96
4	9	8,121	5.0	406.05	133 99	90 86
5	8	7,728	5.0	386.40	127 51	84 38
6	8	4,618	5.0	385.08	127 07	83 94
7	6	6,855	5.0	342.75	113 10	69 97
8	7	6,564	5.0	328.20	108 30	65 17
9	9	8,119	5.2	422.18	139 32	96 19
10	6	4,723	6.0	283.38	93 51	50 38
11	14	7,334	5.0	366.70	121 01	77 88
12	5	5,406	5.4	291.92	96 33	53 20
13	4	4,425	5.0	221.25	73 01	29 88
14	2	5,327	4.4	234.38	77 34	34 21
15	3	4,869	6.2	301.87	99 61	56 48
Totals	.....	97,990	...	5,173.87	\$1,707 31	\$1,060 31
Aver. per cow.	.....	6,533	...	344.87	\$113 82	\$70 69

FEED CONSUMED.

Bran, 3 tons @ \$26 per ton.....	\$78 00
Shorts, 2 tons @ \$27 per ton.....	54 00
Hay, 30 tons @ \$12 per ton.....	360 00
Mangels, 20 tons @ \$4 per ton.....	80 00
Pasture	75 00

Total for 15 cows..... \$647 00

Average per cow..... \$43 13

Profits

Net profit for entire herd.....	\$1,060 31
Net profit for average cow.....	70 69
Net profit for best cow.....	121 96

E. L. Brewer, Satsop, Chehalis county, is an example of success through intelligent care and business methods. With 80 acres of land he keeps 40 cows (partly purebred Jerseys) and about 100 hogs and some horses.

He markets the hogs when from 6 to 8 months old and weighing from 150 to 225 pounds, feeding them the skim milk, grain and pease, besides giving them considerable pasture. In 1910 his receipts from this source alone were \$1,470.80.

The dairy accounts for 1910 were as follows:

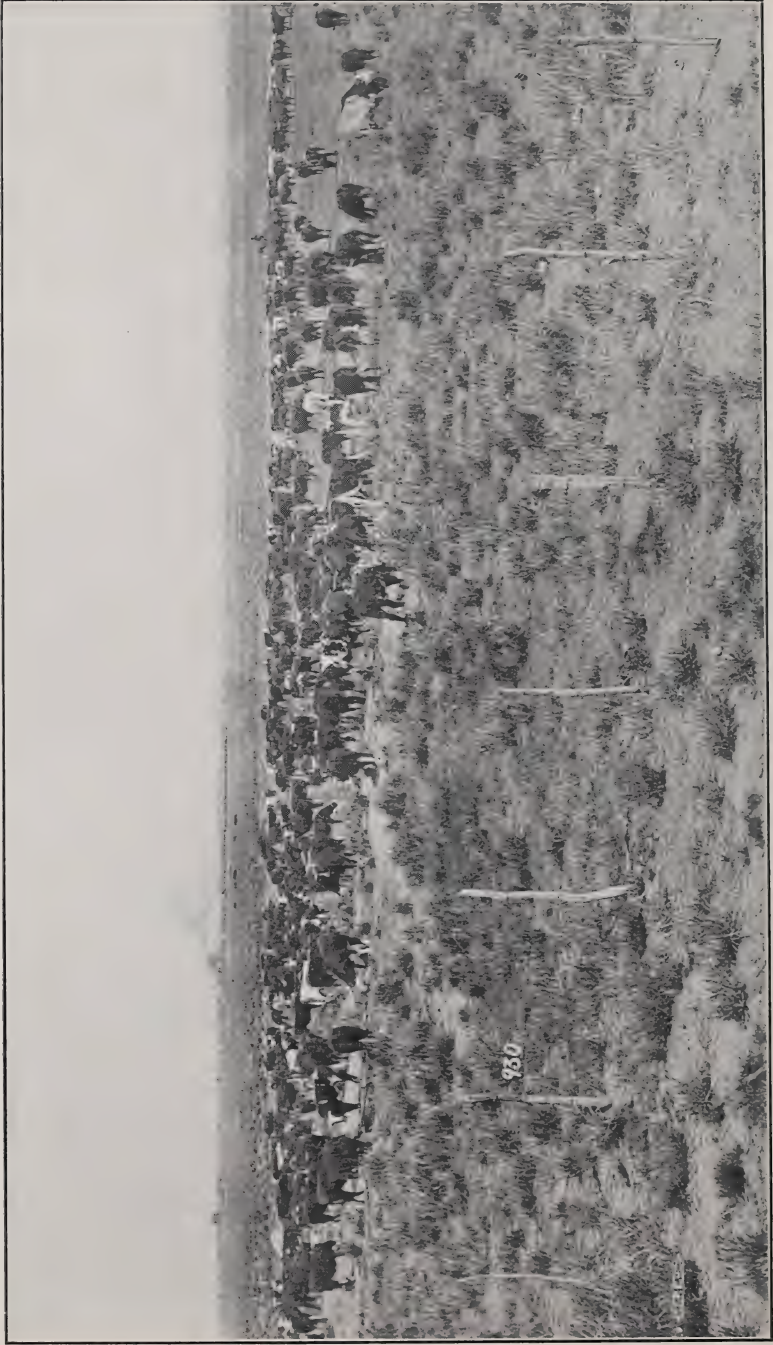
RECEIPTS.

Dairy products sold.....	\$4,509 30
Fed to stock.....	150 00
Consumed	125 00
Calves produced	1,000 00
Other receipts	600 00
	<hr/>
Total receipts	\$6,384 30
	<hr/>
Average per cow.....	\$159 60

EXPENSES.

Feed raised—	{	Clover hay, 16 tons.....	}	\$440 00	
		Oats and pea straw, 40 tons...			
		Green vetch and oats, 40 tons...			
		Rutabagas, 50 tons.....			
Feed purchased—	{	Alfalfa, 8 tons.....	}	500 00	
		Bran.....			
		Middlings.....			13 tons...
		Corn meal....			
		Oat meal....			
Pasturage	280 00				
Labor	1,200 00				
Losses	200 00				
Other expense	100 00				
	<hr/>				
Total expense	\$2,720 00				
	<hr/>				
Average per cow.....	\$68 00				
Total profit for herd.....	\$3,664 30				
Profit per cow.....	91 60				

Mrs. Jessie Gregg, Adna, Lewis county, has a ranch of 40 acres, all under cultivation, used by the State College for demonstration purposes. She has 20 young cows, pays \$15.00 per acre for rent, keeps two men the year round at \$40 and \$50 per



Manufacturing Beef and Leather in Yakima County.

month and board. For the month of January, 1911, her dairy accounts show the following:

RECEIPTS.	
18,048 pounds milk @ \$1.90 cwt.....	\$342 90
EXPENSES.	
Help	\$90 00
Rental	50 00
Interest on capital.....	25 00
Insurance and incidentals.....	8 50
Total expense	\$173 50
Expense per cow.....	\$8 67
Total profit for month.....	169 40
Profit per cow.....	8 45

A. M. Stevens, of Ellensburg, has one of the highest average herd records in the state. The ninth year of the herd of 11 cows ended August 31, 1910: 4,713.4 pounds of butter were produced and sold for \$1,496.56, an average of \$136.05 per cow. One of these cows, Gerties Black Beauty H. R. No. 176961 freshened March 7, 1910. From March 13, 1910, to March 13, 1911, she gave 13,598 11-16 pounds of milk, or 666.723 pounds of butter fat, equal to 784 38-100 pounds of butter; 85% fat.

COWS ON CITY LOT.

In many cities and towns of the state there are people who happen to own just a small plot of ground and take a great deal of delight in keeping one or two cows. The returns from this small outlay are always proportionately greater than the average cows of large herds, as the neighbors will pay good prices for all the milk produced. Lafe Learned, of Montesano, Chehalis county, presents a good illustration of what can be done in this respect.

He has a six-year-old cow, three-quarters Jersey and one-quarter Red Polled. She calved April 22d. During the month from May 8th to June 8th of 1911 she gave 1,614 pounds of milk, which tested 6.6. On December 5th of the same year, when she was giving about 900 pounds per month, having been milked

about eight months, she tested 7.2. During the seven months from May 1st to December 1st, she gave 8,399 pounds of milk, or an average of 1,199 pounds per month. Her feed during that period was estimated to be about 20 sacks of shorts at \$1.10 per sack, worth \$22.00; one ton of hay at \$12.00, and three months of pasture at one dollar per month, worth \$3.00; total, \$37.00. The gross receipts were \$293.93, leaving a profit of \$256.93, or about \$36.00 per month for one cow.

OTHER SUCCESSFUL PEOPLE.

Many expressions were received from people in various parts of the state, practically all going to show that dairying is yielding a splendid profit. Lack of space forbids quoting from all, but a few will serve to convince the outsider of the general contentment of the Washington dairymen.

Chas. A. Smith, secretary to J. P. Graves, Spokane, Washington, says:

"While we have not followed the dairy business as a money making proposition, we firmly believe that it is a very profitable industry, when handled under proper management. * * * * In our mind, the best locality for dairies in this section of the country is in what is known as the 'Palouse Country,' to the south of Spokane."

A successful farmer of Trout Lake, Klickitat county, says:

"The returns per cow for butter fat are from \$5 to \$7.50 per month. Dual purpose cows are considered the best for this section as there is practically no market for other than beef stock, so that when by reason of heifers coming in the herds are increased, the fat cows can be more profitably turned off for beef.

"I am satisfied that with well cured second-growth clover selected cows can be made to bring at least \$10 per month for butter fat."

F. Henderson, Woodland, Cowlitz county, says:

"I have bills of cream and milk sold for the last eleven years, also accounts of other products sold from the place. I find that my cows average 311 pounds of butter fat per cow for the year 1911, and counting hogs and calves to represent skim milk (as I keep hogs and fatten them on the milk) that the cows average \$126.14 per cow. * * *"

Iver Furness says:

"Have 27 cows for dairying purposes. Average income from each per year, \$112.50. Having no other stock or fowls, this will be all the information I can give you."

Ed Valentine, Montesano, Washington, has 90 acres of chiefly bottom land; five years ago he paid for this \$10,000.00. Today with the other improvements, it could not be bought for \$25,000.00.

"Last year, 1911, I milked 27 cows, keeping exact records of receipts, which amounted to \$3,756.50, varying from \$250.00 during the poorest months when some of the cows were dry, to \$390.00 when nearly all were giving milk. Some things will produce more money than dairying, but there is nothing so certain and you can always get cash. Besides the dairying, I produced 40 tons of potatoes, 2 tons of oats, \$125 worth of hogs, and sold nearly \$100 worth of calves. The total receipts of the farm would probably be about \$5,000 per year."

SWINE RAISING IN WASHINGTON.

Raising hogs as a side product of the dairy business as well as to utilize the scraps, waste matter, etc., that accumulate on practically every ranch has always been recognized as worth while by the majority of farmers. However, as an independent industry or the main work on the farm it has not received so much attention.

VALUE OF SWINE IN WASHINGTON.

Nearly 50 per cent. of the ranchers of Washington keep hogs, most of them as a side issue only, there being on an average about 9 or 10 to each farm. Whitman county outstrips all others in their production, the total value of swine in that county April 15, 1910, being \$332,317. The next in importance was King county with a valuation of \$98,611. Other important counties in this respect are Walla Walla, Spokane, Klickitat, Lewis and Lincoln, each with a valuation of between \$70,000 and \$75,000. For the entire state this class of livestock was worth \$1,674,927 or just about twice as much as in 1900. About two-thirds of this, \$1,134,782, belongs to the counties east of the mountains. The present indications are that there is now 25% more than in 1910, so that the total product of the entire state for 1912 would be about \$2,000,000.

In contrast with this should be considered the large number of hogs shipped yearly from outside the state. In the year 1911 it can be safely estimated that hogs valued at nearly \$5,000,000 alive were brought in, the larger part for domestic consumption. There will always be a good market for all that can be produced.

MONEY FROM HOGS LIKE "FINDING IT."

Without doubt the pig is almost a necessity on a well regulated Washington farm where everything should be utilized for



Artichokes, like potatoes, yield from 100 to 500 bushels per acre.

some purpose. In many cases it appears that much material which would otherwise have yielded nothing has been turned into the best of pork, fetching some ready money which could scarcely have been more easily secured if the producer had found it. In fact it is probably for this very reason that the hog has secured an enviable reputation as a side-product; so profitable is he in this respect that the tendency has been to keep him at this as his permanent labor. He greedily drinks the skim milk and is not over particular as to its freshness; he devours the cull fruit and vegetables, grunting no complaint as to their quality. His chief trouble is in getting filled up; for his powers of assimilation are practically unlimited while indigestion is a malady unknown to him. In the meantime unconsciously he is working harder for the enrichment of his fortunate owner than any other animal, except goats, on the place, and at the same time he is manufacturing pork that will bring from 9c to 12c per pound wholesale.

HOGS WILL HELP CLEAR LAND.

If given an opportunity he will keep the orchard nicely cleaned up; he will help to solve the logged-off land problem by nosing down into the roots and exposing the soft parts to the air, and eating up ferns and other weeds. He enjoys even lizards and snakes, which are to him choice morsels. He will fertilize the soil and help it to yield excellent crops. In all this work he needs no boss standing over him. When his life's work is done he then yields up the accumulated meat made from these various odds and ends, offering it for the benefit of all mankind.

The hog should certainly be promoted. He has repeatedly shown what he can do as a side issue and deserves more opportunities for demonstrating his good qualities on a larger scale.

WASHINGTON PRESENTS IDEAL CONDITIONS.

Whether on a large or small scale, the natural conditions in the State of Washington equal those of any other state for the advancement of this industry. Broad acres of land; abund-

ance and variety of feed and pasture; plenty of flowing streams; general climatic conditions; sufficient sunshine and cooling shade; comparative freedom from pests and diseases are all favorable to the successful propagation of swine.

If following the industry on a large scale, it is usually agreed that plenty of land for pasturage will help to produce the best results and enable the owner to raise them with the least amount of trouble and largest profit, as well as make healthier animals. Under these conditions the usual plan is to let the pigs, when weaned, run until a short period before fattening for the market. As light pork seems to bring the greater profits, the fattening period begins when the hog is 5 or 6 months old, and weighs from 100 to 150 pounds. When grain is high priced they should derive at least half their growth in this way. They are usually marketed weighing from 175 to 250 pounds.

In this manner pork can be raised for 3c or 4c per pound and with usual prices will net 4c or 5c per pound in the hoof.

PRINCIPAL FEEDS.

Outside of the skim milk, slop, scraps, etc., the principal hog feeds which grow well in Washington, are corn, peas, wheat, barley, oats, alfalfa, clover, vetch and thousand-headed kale, as well as many succulent roots, including mangold wurtzels, beets artichokes and rutabagas.

In Klickitat county there are many who fatten the hogs on peanuts, which grow well in that vicinity.

Estimates of what the various crops will yield per acre are given elsewhere in this publication.

SOME SUCCESSFUL MEN.

There are many people in the state who are making a success of hogs as an independent industry. Among them are L. H. Lindbarger, R. F. D. No. 1, Moxey Valley, Yakima county. His success is attested by the fact that at the Portland Fat Stock Show recently he "cleaned the platter" in Short-Horn cattle and Poland-China hogs. He has 160 acres of volcanic ash which is excellent for alfalfa, corn, potatoes, carrots and

peas. He aims to sell his hogs when 8 months old and weighing about 250 pounds. He keeps from 10 to 20 sows for breeding, worth about \$3,000.00. He says:

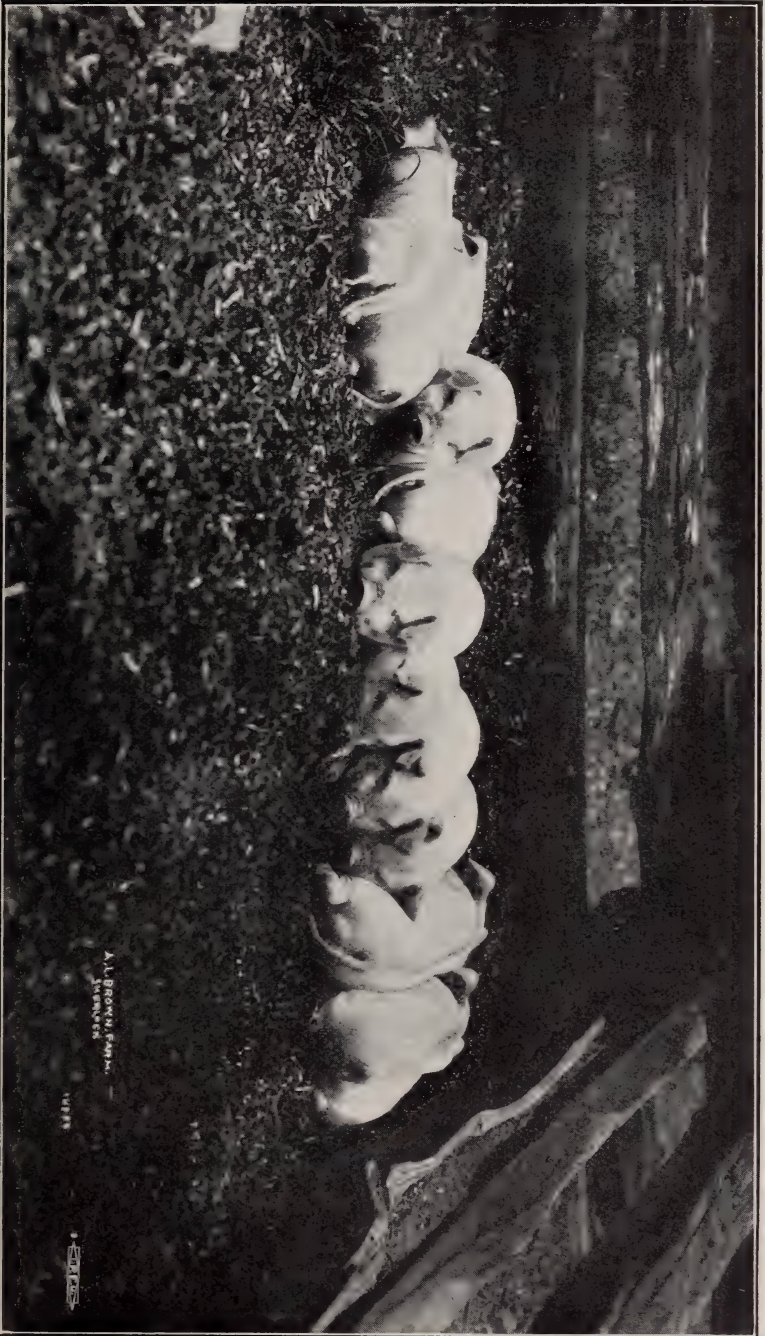
"I consider Washington state in its infancy at present in the swine industry, but with the experiments of our swine consuming alfalfa in a ground form proven by experiments of our valuable agricultural stations, we are able to produce pork at a very small expense, say from 3 to 4½c per pound and with proper care there are no diseases here that are so prevalent in middle and eastern states. I have never lost a hog with disease, as care is the principle asset to the industry and none can expect to succeed without giving their swine the same attention they would a valuable cow for a dairy."

In the wheat country the expression of R. D. Williams, Pomeroy, Garfield county, shows what can be done; he produces from 50 to 125 Poland-China and Duroc-Jersey hogs as a side issue to raising wheat and barley on a 640-acre farm:

"I consider hog raising quite profitable if properly carried on. Pork can be produced for about 4 cents per pound. I wean them at 8 to 10 weeks old; pasture on alfalfa till 100 pounds weight, then feed them corn for a month or six weeks, depending on time of year. In cold weather they do not grow so fast. I sell them when about 180 pounds in weight. * * * * Hog raising taken up in connection with cows and corn and wheat would be very profitable, if taken up in the right spirit. Everybody here is raising wheat and barley, a very few excepted."

Mr. John Cubbey some years ago purchased about 15 acres of land close to the city of Tacoma, and has made a specialty of raising purebred Poland-China hogs, winning the first prize for Champion Boar at the A.-Y.-P. E., and as many as 400 premiums at other times. Though an old man now, he still keeps from 50 to 100, feeding them from the hotel slop and letting them pick up roots and ferns, fattening them when they are about 6 months old. When feeding, he figures the expense at from \$1.00 to \$1.50 per month for each hog until killing time, when they will fetch about \$20.00 at from 6 to 8 months old, and weighing 200 pounds.

When the hogs are being raised in connection with the dairy industry the suggestion of Donald McInnes of Dungeness, now president of the State Dairymen's Association, are worth reading. By systematic breeding he insists on two litters per year



A. L. BROWN, Farm
MANKATO, MINN.

1918

W. E. R. Co.

Pigs quietly mind their own business and will eat what no other animals want.

from his sows, one about the end of February and another about the first of September. As soon as they are weaned they are fed the skim milk with a little middlings or ground wheat mixed in. At the same time they are given the run of a pasture lot. At five months he begins to fatten and give them all the milk they can drink with a small amount of ground wheat. They are then ready for market and out of the way in time for the next semi-annual litter which is treated in the same way. During the winter he feeds the sows mangold wurtzels and a small amount of skim milk. In the spring they are in fine shape for fallowing. The moderate temperature of Washington is especially suitable for this double work on the part of the sows and the quick development of the pigs.

STARTING IN.

Practically all the men who have answered inquiries concerning the industry have said emphatically that there are good opportunities for others in their vicinity. However, the beginner must not fall into the error of supposing that a hog needs no care at all. To be sure he may do better than most animals will without attention, but it is folly for anyone to engage in any enterprise without a previous determination to get the most he can out of it from the first. No one should be satisfied with moderate profit when by increased individual effort he can win even greater returns. The most successful men agree that a careful study of the hog's habits, likes and dislikes, should be made by the producer. It is usually best to start on a small scale (some advise a single sow), and get mature stock that has shown ability to produce good pigs and as many as possible to the litter.

Too great expense should not be entailed in buildings and apparatus to start with. Land can be secured at almost any price according to location and amount of improvements.

EXPRESSIONS FROM PORK PRODUCERS.

The following are typical expressions of the many enthusiastic hog raisers in different parts of the state. Many very valu-

able suggestions are also given which should be of much aid to those contemplating entering this industry.

E. H. Durham, Winthrop, Okanogan county, up the Methow valley and about 44 miles from a railroad station, raises some Berkshire and Duroc-Jerseys as a side issue to cattle and dairying, feeding the skim milk to hogs, calves and chickens. He also feeds his hogs wheat and alfalfa, fattening them with corn:

"We can raise corn, wheat, oats, barley and alfalfa, so I do not see why hogs would not be a profitable business if carried on right. Land can be bought at prices ranging from \$10 to \$300, and will produce most anything you want."

John F. Rockhill & Sons, Turner, Columbia county, generally raises about 40 American Hampshire hogs as a side issue to cattle, horses and mules.

"Raising hogs is one of the best businesses on the farm. In 1910 I sold over \$700 worth. In 1911, I was changing to Hampshires and consequently did not have so many to sell. I butchered 10 half-breeds 7 months old that weighed 220 pounds and dressed 175 pounds apiece. Last week I sold 6, seven months old, with a total weight of 1,480 pounds. There are plenty of opportunities for others to make a success of the industry in this neighborhood in any part where there is water handy."

Alfred Polson, Mt. Vernon, Skagit county, has 320 acres, producing chiefly hay, oats, horses, and dairy cows.

"I have obtained the best results by having the pigs come in the fall of the year, when they require very little feed to carry them through the winter months; turn them out on clover pasture with the other farm stock about May 1st and keep them on pasture without any other feed until you can find a market for them as stock hogs, any time from August 1st to October 1st. By that time they should weigh on an average about 150 pounds and should bring about 6c per pound on foot. In this way you save the labor and expense of fattening. My hogs net me about 60% profit."

John L. Harris, Kelso, Cowlitz county, keeps about 480 hogs of the Duroc-Jersey breed and dairy cows.

"My hogs paid me about 150% on the investment. I boil the feed and give them much green stuff which grows well in this section. I usually sell them when about 10 months old, weighing about 200 pounds."

H. L. Wiester is a rancher at Skamokawa, Wahkiakum county:

"Hog raising is carried on in this county chiefly as a side issue of dairying; enough are kept to use up the skim milk. I have tried feeding grain with the milk, ground wheat, whole wheat, corn, rolled barley, etc., the past year and kept about four times the number of hogs as before."

W. E. Porter, Cedarville, Chehalis county, raises from 25 to 40 hogs, Chester Whites and Poland-Chinas, as a side issue to dairy, stock and horses. He has been on one ranch for 12 years.

"I consider this country first class place to raise hogs, as they can get pasture all the winter. I let them rustle in the pasture, give them skim milk and finish them off with grain, sometimes peas and roots. I sell to the butcher when about 120 pounds in weight. It is easy money I get for pork. A good way to fatten hogs here is to turn them into a field of peas, let them harvest the crop and then sell them. I have sometimes done so, but have generally let them get most of their growth on pasture, skimmed milk, roots, and small potatoes, glean the stubble in grain fields and anything that might go to waste. Hogs are healthy and do well in this county. Red clover, field peas and wheat yield large crops and root crops also."

Arthur W. Cays, a man of 15 years' experience, Dungeness, Clallam county, raises from 25 to 100 Poland-Chinas and Berkshires (the latter as experiment only). The soil is magnetia loam and produces all crops fairly well, clover especially. Logged-off land in this locality can be bought for \$30 to \$40 per acre.

"I consider hogs very profitable. I feed what milk I have, mostly to young pigs and to brood sows' suckling pigs. With carrots and mangels I carry them through the winter, fattening them for market on grain (wheat, peas, barley). I find that for each 25 pounds of weight the hog weighs a daily ration of skimmed milk is 1 gallon, or 4 gallons to a pig of 100 pounds, 6 gallons to a pig of 150, or 1 pound of dry ground grain to each 25 pounds of weight, or 1 pound of grain to substitute or equal 1 gallon of milk. A pig of 150 pounds should gain on an average about 1½ pounds per day and when all is favorable this can be beaten. I use no land to the advantage of hog raising except that I pasture at times, but am not able to estimate it. I find that peas stand first of all our grains as a hog feed, wheat next, then barley."



Seventy-five tons of Mangold Wurzels to the acre supply succulent feed at the lowest price.

POULTRY INDUSTRY IN WASHINGTON.

SUPERIOR ADVANTAGES.

The poultry industry in Washington is described by the leading poultrymen of the state, as well as by many of the big dealers in poultry products, as "just in its infancy." When we compare the present production, both of eggs and fattened stock with what the state annually consumes, the larger portion of which must necessarily be shipped from outside sources at considerable distance, it is consoling to know that the business is at present merely in its swaddling clothes, but a strong hope is expressed at the same time that it will immediately take on strength and develop as soon as possible into real maturity.

TABLE SHOWING NUMBERS AND VALUES OF VARIOUS KINDS OF POULTRY IN WASHINGTON AT DATES INDICATED, AND NUMBER OF FARMS REPORTING EACH KIND IN 1910.

KIND	1910 (April 15)			1900 (June 1)	
	Farms Reporting		Number of fowls	Value	Number of fowls
	Number	Per cent of all farms			
Total.....	44,906	79.9	2,272,775	\$1,367,440	1,356,715
Chickens	44,802	79.8	2,204,114	1,289,328	1,196,639
Turkeys	5,557	6.3	16,049	36,353	29,155
Ducks	2,558	4.6	13,179	10,883	66,433
Geese	3,052	5.4	14,858	21,350	64,488
Guinea fowls	586	1.0	1,763	1,499	(*)
Pigeons	806	1.4	22,701	7,604	(†)
Peafowls	10	(‡)	54	171	(†)
Pheasants	5	(‡)	57	252	(†)

* Included with chickens. † Not reported. ‡ Less than one-tenth of 1 per cent.

STATISTICS.

The 1910 census credits us for the entire feathered brood with 2,272,775 fowls, valued at \$1,367,440. These figures represent an increase in 10 years of 916,060 fowls, valued at

\$752,602, or 67.5%. With this report as a basis, but keeping in mind some recent improved methods of handling poultry, it can be safely estimated that in the same year about 15,000,000 dozen eggs were produced. At the conservative rate of 30c per dozen, these would be worth \$4,500,000. There were shipped into the state about \$6,000,000 worth, so that the total number marketed in Washington would reach a value of at least \$10,000,000.

In the meantime the population of the state had grown to 1,141,990, an increase of 120%. It is quite evident that if the population gains as rapidly in the present decade as it did during the past, and there is every reason to believe that it will, then the poultry industry in order to overtake and keep pace with the increasing demand must proceed at five times the present rate. In other words, at present we need more than twice as many fowls as we now have; and in 1920 at least 12,000,000 will be needed in order to supply two eggs per day to every person expected to be in the state at that time.

ADDITIONAL FAMILIES NEEDED.

It can readily be seen from the above calculations that there are opportunities now for between 2,000 and 3,000 families in this line of endeavor alone. At the same rate there would be opportunities during the next 10 years for about 10,000 additional families to make a good living, helping to supply the increased demand for eggs alone.

WASHINGTON SHOULD EXPORT.

However, there would be no necessity for limiting the development of poultry to the needs of Washington people. Many conditions point to this state as possessing splendid possibilities for exporting. Besides its productive powers, it is well located and has direct communication with sections whose natural conditions will compel the importing of such products. Even now it is necessary for us to send a great deal to Alaska as that territory is too far north to make a success in raising its own poultry. The future development of that country with

extremes of temperature will mean an increased demand for eggs and stock from the nearest locality where they can be profitably produced. That place is undoubtedly the State of Washington, for the cold winters of Canada can hardly be expected to encourage poultry raising to any appreciable degree. It is quite likely, also, that parts of Canada herself will in time offer other good markets for Washington poultry and eggs.

LEADING COUNTIES.

The leading county at present, both in point of number and value of poultry, is King, having in the neighborhood of 200,000 fowls, valued at approximately \$150,000. Close behind come Spokane, Pierce, and Whitman. Other counties of importance are Kitsap, Yakima, Lincoln, Whatcom, and Skagit. All the remaining have from 10,000 to 70,000 head apiece.

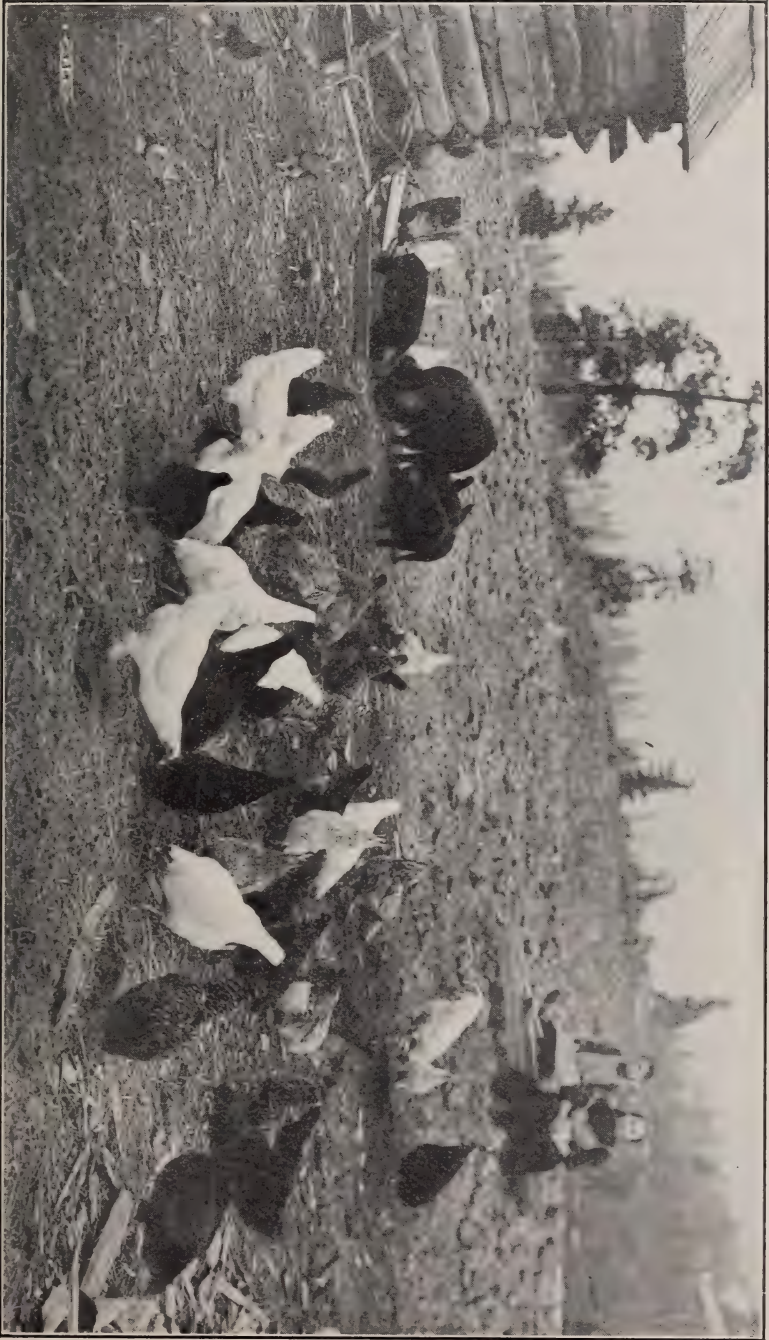
ALL COUNTIES ADAPTABLE.

Practically every county in Washington is adaptable in some measure for this industry, as in every section can be found all the necessary natural conditions.

INFLUENCES OF MILD CLIMATE.

In the article on dairying are figures showing the normal and mean temperatures in the vicinity of some of the large cities. In this chapter it is only necessary to note the relation of such a climate to the successful management of the industry under discussion.

It has long since been demonstrated that of all useful creatures the hen is one of the most sensitive to climatic influences. One of the main efforts of man is to assist in adapting her to the various atmospheric conditions through which she must pass during a twelve-month period. Where the changes are frequent and at great extremes, this problem naturally becomes more important and more difficult to solve. In the colder climates, warmer and costlier buildings must usually be constructed. It is also necessary in such climates, since the chickens must be subjected to longer confinement, to build larger structures so



Hahn and Eggs, or Chicken Dinner.

as to allow each bird more floor space. All this requires larger initial capital as well as a consequent additional maintenance fund. The freedom Washington enjoys from extremes of any nature and the unusual mildness of the winters would permit of both cheaper and smaller buildings. Less floor space is needed as the hens may be allowed outside much of the time.

Experiments carried on at the Maine Agricultural Experiment Station tend to show that a colder temperature necessitates the hen consuming more feed in order to maintain the proper bodily warmth. The difference would amount to considerable when a large number of hens are being kept for purely commercial purposes.

WINTER EGGS MOST PROFITABLE.

The successful poultryman always plans to have his hens laying as much as possible in the winter time when eggs fetch the best prices. This is the more readily done in a state that is blessed with the mildness of Washington winters. E. H. Rosenkranz, Colfax, Whitman county, characterizes the situation when he says: "With our long pleasant winters, poultry can be kept on a profit paying basis the entire year. We have very little zero weather east of the Cascades and none on the west side, eliminating the expense of costly frost proof houses, the open front being used most entirely."

SOIL AND VEGETATION FAVORABLE.

Soil that will produce good fruit, soil that is porous and well drained is also considered excellent for the successful raising of poultry. Such land can be found in all parts of the state and close to the very best markets. The natural vegetation, too, is most favorable. Excellent crops of wheat, corn, oats, barley and other grains are produced, while in nearly all parts, green stuff and the succulent feeds can be grown luxuriously. In the western part of the state the thousand-headed kale and marrow cabbage will produce from 40 to 80 tons of green stuff to the acre, and can be left outside all the winter, the lower leaves being cut off as needed. It is just as essential for chick-

ens to have plenty of green stuff as it for people to have vegetables and for dairy cows to receive fresh forage.

PURCHASING FEED.

It will usually be true that although the poultryman is willing to raise his own green feed he will prefer not to be compelled to produce also the needed quantity of grain, as in most cases greater economy may be practiced by purchasing from those making a specialty of that branch of agriculture. They will raise it on cheaper land, in larger quantities, and at correspondingly smaller cost per bushel. However, plenty of grain can be easily secured as Washington is one of the most important wheat yielding states in the Union; a number of the counties being devoted almost entirely to that line of endeavor. This grain is of high quality and can be obtained at lower prices than in states where the poultrymen are compelled to pay large freight charges for shipping grain from a distance. Those who have preferences for a meat ration can usually secure a supply from the many slaughter houses and butcher shops located in various sections of the country. Thus the feed question is well settled whether the means be purchasing or raising and no matter what the reasonable rancher might consider best for his hens.

MINIMUM DANGER FROM DISEASE.

The many replies received from people to whom inquiries were sent would indicate that Washington is particularly free from diseases that effect poultry. Only a few reported losing any in that manner, while of those who did, only a small percentage of the stock was lost. In most cases it is the inexperienced or over-confident that will suffer on such account. With the open front building, used chiefly in the state, and the moderate climate which permits plenty of outside exercise, there is hardly any danger at all from this source, providing the ordinary precautions are observed. Hon. Ed. E. Harden, superior court judge of Whatcom county, who also takes a great interest in poultry rearing, as he has many birds, speaks from experience when he says: "I have found that the trouble which

has caused the undoing of many would-be poultry kings is in not keeping the birds free from lice and from *over-feeding*, especially of the young." Surely the eradication of this latter trouble would add to the profits "both going and coming."

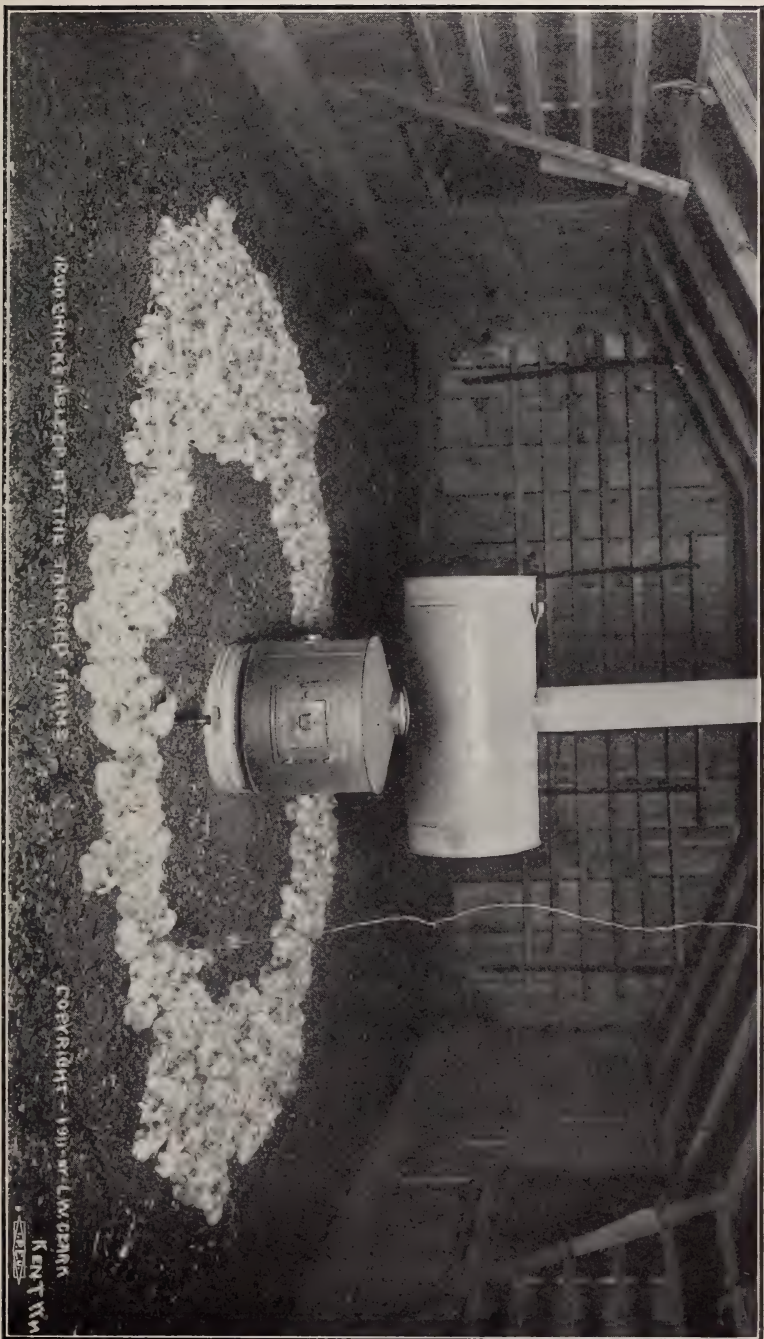
LARGE EGG YIELD.

Washington poultry has won both interstate and national distinction. Although it is not the intention to dwell on this phase of the industry, nevertheless it is proper as illustrating the possibilities, due partially to the favored conditions to mention Washington's claim to the world's record for yearly egg product of a single hen. This was owned by D. Tancred, of Kent, who by trap nesting recorded 295 eggs in 365 days. It should also be borne in mind that the average yield of a hen for the United States is 95 eggs, while the average for Washington is 120. The 150- and 200-egg hen is not an uncommon hen and may be the rule, providing a good strain of layers is secured and careful attention given to the work.

GETTING STARTED.

In getting a good start much, of course, depends on the individual. Some persons will readily adapt themselves to new conditions, while others must first get considerable experience. Time would probably be saved in most instances if the beginner who expects to enter the work on a large scale, would seek an opportunity to work for some good practical poultryman actually engaged in the work. If this is impossible or impracticable, the conservative men advise starting out on a small scale for a year or so and getting the experience at less expense than what would be incurred in attempting big things too soon. A large farm is not needed in learning the fundamental principles. At the same time good poultry journals should be taken and the bulletins on this question by the State College and the United States Department of Agriculture should be studied.

It would be out of place to try to suggest the breed. It might make some difference as to the particular locality in which one would settle. At any rate purebred stock have usually



ROOD CHICKS ASLEEP AT THE FINGERFEEL FARM

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KENT WA

Twelve hundred little sleepy heads that will soon yield from \$2,000 to \$4,000 in eggs in one year.

proved the best. It is certain that it never pays to try to save on the quality of the stock. The Mediteranian, American, English, Asiatic and all miscellaneous varieties are bred here and all seem to do well. For laying purposes one should also be very particular regarding the strain. Some consider this of more importance than the breed itself. However, there seems to be a great deal in getting a breed for which one can feel a certain degree of affection. If one starts with a breed he doesn't like it always pays to get rid of them as soon as possible and stock with a more satisfactory kind.

There is a great tendency at the present day also to specialize in the different branches of the work, and though all are successfully carried on in Washington, no one should try to learn them all at the same time. The beginner would undoubtedly be wise in leaving the incubating work for more experience, and purchasing the day-old chicks or perhaps the three-month pullets. An advantage of this latter is that the cockerels and weak chickens have been weeded out and the most delicate period in the life of the chicken has been bridged. Complete attention can be given to the needs of laying hens.

OPPORTUNITIES PLENTIFUL.

Regarding quantity of land, many people are making a success on a few city lots, while some will fail on a ranch of many acres. Other things being equal, it would usually be best to try and secure at least 5 acres if one expects to keep from one to two thousand laying hens. With this amount, all the necessary green feed can be raised; there will be plenty of room for buildings, as well as ground, when the chickens can get sufficient exercise. If one wishes to raise fruit at the same time, such opportunities may be found in the vicinity of every market in the state. As fast as the land close up is put into use, the tendency is to build street car lines and interurbans into the territory further out, so that the transportation facilities are such as to make the best markets available. For a poultry ranch, too, it is generally a good policy to pay a little more

for land comparatively close in than to purchase cheaper land at too great a distance from the market.

Since a variety of natural conditions are presented, including differences in climate, vegetation and scenery, it would be well for the new settler to choose that part of the state which he may like the best and then to secure a location convenient to one of the best markets of that region.

WHY THE HEN HAS BEEN NEGLECTED.

It might be asked why Washington has not previously done more to develop an industry which is so much needed and which presents such excellent opportunities. In reply it must be said that as a new state, she has been busy raising the bumper crops of fruit, grain, and vegetables off the virgin soil; cutting the lumber from the hillsides; pulling up the nets loaded with fish; building roads to improve transportation; manufacturing of all kinds; loading coal onto cars; besides engaging in other occupations commanding immediate attention on the part of settlers. In the meantime the little hen has been quite modest in her proclamation, and has reserved her best for the men and women that are willing to show her a little attention and supply the necessary equipment for her labors. To those who carefully and intelligently administer to her wants, results similar to those portrayed in the pictures on other pages, will not be long in rewarding their efforts.

One of the beauties of the work is that it is within the scope of the capabilities of all members of a family, while at the same time it can be made to engage the vigorous application of men desiring a life's work that will bring financial progress and permanent contentment.



A mere sample of a peaceful ranch with plenty of chickens.

EXPRESSIONS FROM POULTRYMEN.

The following expressions are from people usually spoken of as experts as well as from people that have only recently started in the business. Letters of inquiry were sent all over the state and answers were invited from any that had ideas they cared to offer. Although it was not possible to reach all those engaged in the work, nor to publish every excellent report received, yet it is believed that these excerpts represent the average opinion of the Washington people pursuing this industry, either in a large or small way. Besides the figures showing returns, many valuable suggestions are given here which may be read with much profit by those contemplating the healthful pleasures of poultry raising. Estimates and figures are supposed to be based on the year 1911.

EXPERIMENT BY WESTERN WASHINGTON EXPERIMENT
STATION.

Poultry plant was started in spring of 1910 in location unfavored by soil conditions.

The equipment consisted of incubator house with eight incubators and twelve houses on a lot of less than one-half acre; a laying house for 250 laying hens. The house was stocked with 250 selected pullets. The business was conducted as a commercial proposition, as distinct from the standpoint of a poultry fancier. Eggs were sold weekly at the regular market prices and chicks were hatched and sold.

At the end of said pullets' laying year, the account stood practically as follows:

CREDITS.

Plant valued at.....	\$1,200 00
Eggs sold (regular market value)..	2,200 00
Increase of stock @ 16c per pound..	410 00
	<hr/>
Total	\$3,810 00

DEBITS.	
Food	\$917 00
Labor	330 00
Building plant	1,200 00
	<hr/>
Total	\$2,447 00
	<hr/>
Net profit	\$1,363 00

“BUILDING UP A SUCCESSFUL POULTRY PLANT.”

Mr. and Mrs. R. J. Greene purchased in 1905, 10 acres of logged-off land, partly cleared, at Grays River, Washington, with the intention of demonstrating if it were possible to produce from the poultry industry alone, a sufficient income to pay expenses and support a family, where all feed except vegetables must be purchased. As they had had no experience along these lines, a very strict account was kept of all operations. After experimenting a year or two, to find the breed most satisfactory to them, they decided in the spring of 1907 to try the single combed B. Leghorn, which gave them good satisfaction. From October 1, 1907, to October 1, 1908, on an average of 65 hens, \$190.94 was cleared, being an average of \$2.95 per hen per year.

From October 1, 1908, to October 1, 1909, with an average of 80 hens, the account stood as follows:

CREDITS.	
Eggs sold, 1,199½ dozen.....	\$331 49
Stock sold, 146 head.....	58 87
Eggs incubated, 27 dozen.....	7 47
Eggs consumed by family, 41½ doz..	11 51
Stock consumed by family, 41 head.	10 50
Increase of stock, 107 head.....	53 50
	<hr/>
Total credit	\$473 34
DEBITS.	
Feed consumed	\$186 64
Oil for incubating and brooding.....	4 80
	<hr/>
Total debit	\$191 44
	<hr/>
Balance credit	\$281 90
Net per hen per year.....	3 52

In the fall of 1908 one house was fitted with trap nests and twenty-eight Leghorn birds were trap nested. Of these twenty-eight birds, twelve were retained in the breeding yard for use in the spring of 1910. The twelve birds produced 2,281 eggs, or an average of 190 eggs per hen for one year.

The Wyandotte Ranch at Kiesling, near Spokane, makes a specialty of White Wyandottes, having also some White Leghorns and White Holland turkeys.

On July 20, 1910, they had 114 White Wyandottes worth \$142.50 and 800 chicks worth \$420.10. During the period from that date to April 1, 1912, they give the accounts as follows:

RECEIPTS.

All stock and eggs sold.....	\$3,794 68
Value of increase.....	1,829 00
Other receipts (show specimens)...	500 00

Total receipts\$6,123 68

EXPENSES.

Feed	\$1,648 78
Oil for incubating.....	38 00
Loss of stock.....	99 82
Advertising, express, etc.....	753 17

Total expense\$2,539 77

Total profit\$3,583 91

Judge Ed. E. Hardin, Bellingham, Whatcom county, says:

“The beginner should start with a small flock of well selected thoroughbreds, cull closely, keep in the same strain, but not inbreed, and let the flock increase with his experience. By so doing he may have not only healthful birds of fine physique, but birds of fine feather, which will command fancy prices. The one who attempts to go into the business on a large scale must, if he would avoid disaster, secure the services of one who has had experience in the business in this climate.”

I. D. Casey & Sons, Waitsburg, Walla Walla county, make a specialty of day-old chicks. Starting six years ago with only \$140.00, today they would not sell for \$15,000.00.

“The profits will vary according to the quality of hen and the use to which you put her. We figure our hens, used for laying purposes,



Thousand-Headed Kale at Puyallup Experiment Station. 66 tons per acre.

as follows, not including labor and interest on the capital. With the day-old chicks we make much larger profits.

RECEIPTS.

210 eggs @ 25c per dozen.....	\$4 37
Value of one-year-old hen.....	1 00
	<hr/>
Total receipts	\$5 37

EXPENSES.

Maturing for laying.....	\$0 45
Feeding one year for market eggs..	1 00
	<hr/>
Total expenses	\$1 45

Profit per hen.....	\$3 92
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“The above represents what we have done. In 1912, we expect to do even better.”

H. E. Sharp, editor of the Northwest Farm and Orchard, Spokane, Spokane county, has made an unusual success in raising the Black Langshan. He claims that \$5.00 per annum can be made from each hen if properly handled. He uses no incubator and expects each hen to lay an average of 10 eggs per month and then to “set, hatch and raise all the chicks possible.” He estimates three years as being necessary before a good start can be secured.

His advice is to always start with a small flock and stick to your old job for a couple of years if you cannot buy pure bred hens.

Estimates of initial expenses and profits, starting with mongrels:

15 mongrel hens and 1 pure bred cockerel	\$12 00
Building material	50 00
Feed for 450 young birds.....	135 00
	<hr/>
	\$197 00
	<hr/>
Profits, 3rd year, not less than.....	\$500 00
Profits, 4th year (1,000 hens).....	5,000 00

Estimates of expenses and profits with purebred hens:

15 pure bred hens @ \$5.00.....	\$75 00
Cockerel to match.....	25 00
Building for 100 birds.....	100 00
Feed for flock.....	135 00
	\$335 00
Total outlay	\$335 00
Profits, 1st year.....	\$90 00
Profits, 2d year.....	500 00
Profits, 3d year (1,000).....	5,000 00
Building for 1,000 birds.....	1,000 00

"Five acres of land and 1,000 birds will be enough for most men to handle. With such a flock one could raise and hatch chicks every month in the year and there would always be a surplus of setting hens."

D. V. Ault, of Everett, Washington, started in 1900 with a trio of White Minorcas. Being a fancier he keeps a limited number of hens. He says:

"I never raised over fifty birds a year to maturity. Have now 50 hens, and 10 male birds. If I had to buy their quality, now it would cost me \$1,000.00. Sold 4,800 eggs at 10c an egg last season, \$480.00. Paid for feed last season, \$185.60. Am selling eggs this season for \$2.00, \$3.00 and \$5.00 per 15. Here is my idea of what it costs to start in poultry:

50 White Leghorns.....	\$35 00
1 240-egg incubator.....	28 00
4 Philo breeder coops.....	20 00
1 Corning egg house, 500-hen capacity.	85 00
Cost of feed to maturity, six months..	500 00

H. Heidenhain, Wenatchee, Chelan county:

"In respect to markets we are very fortunate. Our town, with its prosperous population, has an astonishing capacity for the good things of the world. But even in case the point of over supply for our local market should once be reached, we have in the three large cities of our state, Seattle, Tacoma and Spokane, especially in the former with its trade to Alaska, a willing market for years to come for all that we will produce.

"For the benefit of men and women who wish to keep a small flock as a side issue, I might say that it costs about \$1.00 per head for houses, coops and utensils. The expense of caring for a flock, not including labor, is about \$1.50 per head per year. The profit derived from the flock is under ordinary conditions about \$2.00 per head per annum."

D. Tancred, one of the big poultrymen of the state, located at Kent, King county, says:

"The sale of chickens and breeding stock now constitutes the most profitable part of my own business, but I have kept as close an account of profits as possible, and when figuring all my products strictly on a basis of market quotations, my net returns have—ever since I got fairly started—always exceeded \$2.00 per hen per year. For utility purposes alone I am sure that a fairly good worker can care properly for over 1,000 laying fowls."

John R. Crosswaite, "Conadale," Deer Park, Spokane county, raises eggs for market purposes and also sells eggs and stock for breeding. With 40 birds he produced, during seven successive months, beginning with January, 649, 738, 984, 999, 978, 896, 830 eggs, respectively, a total of 6,073. The value of these in chicks and eggs for hatching, amounted to \$668.00 or \$16.70 per bird. During the past season he cleared over \$25.00 profit per head from 130 breeders in seven months, which he considered very conservative in relation to what can be done.

"We breed only the Anconas and have never been able to raise enough for the market. Layers well attended to, will net a profit of \$3.50 for strictly market purposes, not figuring selling eggs for hatching, etc. Our accounts show that it cost us \$1.20 each to feed layers and 45c to raise a pullet to maturity.

"We are now getting others interested so as to form a kind of poultry colony in order to better selling prices, which average some 38c the year around, and also to improve buying facilities. Three others are already with us, all with Anconas.

"We will gladly help any beginners who would like to start egg work, and would be pleased to hear from several persons who could see their way to join us in a poultry colony.

"The fire we had recently, crippled us so much that we have never been able to supply more than about ten per cent. of all stock ordered, and not more than 50 per cent. of eggs for hatching."

Dr. F. M. Rossiter runs the Sanitarium Poultry Ranch at North Yakima, raising White Orpingtons and fruit. He started a flock a number of years ago with a hundred-dollar pen from Kellerstrass and a one-hundred-fifty-dollar pen from England.

"The sales paid all expenses of coops and feed for the first year. In 1911 the total expenses were \$345.00, the receipts were about \$700.00



Sixty tons of Rutabagas to the acre.

plus 200 pullets valued at \$600.00 and 30 high bred cockerels valued at \$300.00."

Geo. W. Holt, Auburn, King county, says :

"When I started with poultry seven years ago, I knew nothing about the business and started on a commercial basis. I tried a number of breeds and finally decided to keep nothing but the White Leghorn. They will do better in large flocks than the heavier breeds."

Jens Svinth, of Roy, Pierce county, says :

"I have four chicken houses 25x34, including feeding shed, and have ten yards of three-fourths acres each for each house. I leave the chickens in the one while I raise oats and clover on the other, and then change them every year. I have been in the business for the last twenty-one years and consider it very profitable."

Mrs. A. E. Stanford, Olympia, Thurston county, gives a good illustration of what can be done on a few city lots. She started in the work 10 years ago on account of failing health, and though she has been handicapped considerable by a lack of time, doing her own housework, she has made a success of the industry and found better health as well.

"I have made it profitable from the first; I started with no capital except a few market hens which I used for hatching eggs purchased from breeders of thoroughbred stock. I have taken the best poultry journals, advertising in a small way at cost of about \$12.00 per year. More business comes than I can handle. I am obliged to refuse many orders for eggs and stock. I keep only thoroughbred stock and advertise for breeding purposes. To insure success one must love the work and put into it all the attention to detail, the same intelligent effort and the same perseverance that one would to any other business. My advice to the beginner is commence in a small way; keep only thoroughbred stock and do not get discouraged at early failures and disappointments."

J. P. Swanson, Spanaway, Pierce county, raises hens for eggs only and keeps exact records of receipts and expenses.

"In 1911 I kept 600 hens from which I derived a profit of \$935.92. In 1910 I made \$1,019.90. I get rid of my cockerels as soon as I can for there is no money in them, especially when I have to buy all my feed and pay \$30.00 and over per ton. One of the main things in a good laying hen is a good constitution."

Mrs. McClellan, O'Brien, King county, has about 17 acres of land and uses about 5 acres for raising chickens, turkeys, and also some ducks. She does all her own work. From 1,000

White Leghorns, she averages 720 eggs per day, and sells them in Seattle. She was in business for about 10 years and has never seen eggs go lower than 20c, excepting once in 1901. In 1909 she cleared over \$1,700 from 800 hens. At the present time her 1,000 hens cost about \$3.50 per day to keep. In December, 1911, from 550 laying hens she sold 20 cases of eggs. Nothing could induce her to abandon the poultry business.

E. H. Rosenkranz, Colfax, Whitman County, says:

"While I have built very substantial buildings, the cost of which are about \$1.00 per fowl, much cheaper buildings may be erected just as comfortable and practical while the cost need not exceed 50c per fowl. The larger the flock, the less the expense per head, as a great saving can be made on a larger building where there are less partitions.

"Success in the business, however, requires some capital, the lack of which is the cause of many a failure. But by far the greatest and most essential thing is experience. The poultry business is like any other business, there must be knowledge, and experience will give us the latter. We all admit that the 200-egg hen does not run at large upon the farm. She must be bred up from the best laying specimen for years and will only then produce the 200 eggs under proper conditions. These conditions are first, housing; second, sanitary and comfortable quarters, and third, feed and care.

"I started with a small flock of one dozen hens and have built up a plant containing now about 400 birds, all thoroughbred Brown Leghorns. I have nine acres of ground, half of which is planted to apples, the balance in pasture and alfalfa, enough to keep a cow, and I expect to increase to about 1,000 birds this season, and with the exception of a little outside labor the first three years, the poultry has done it all, and is now making me a good living and a little surplus besides.

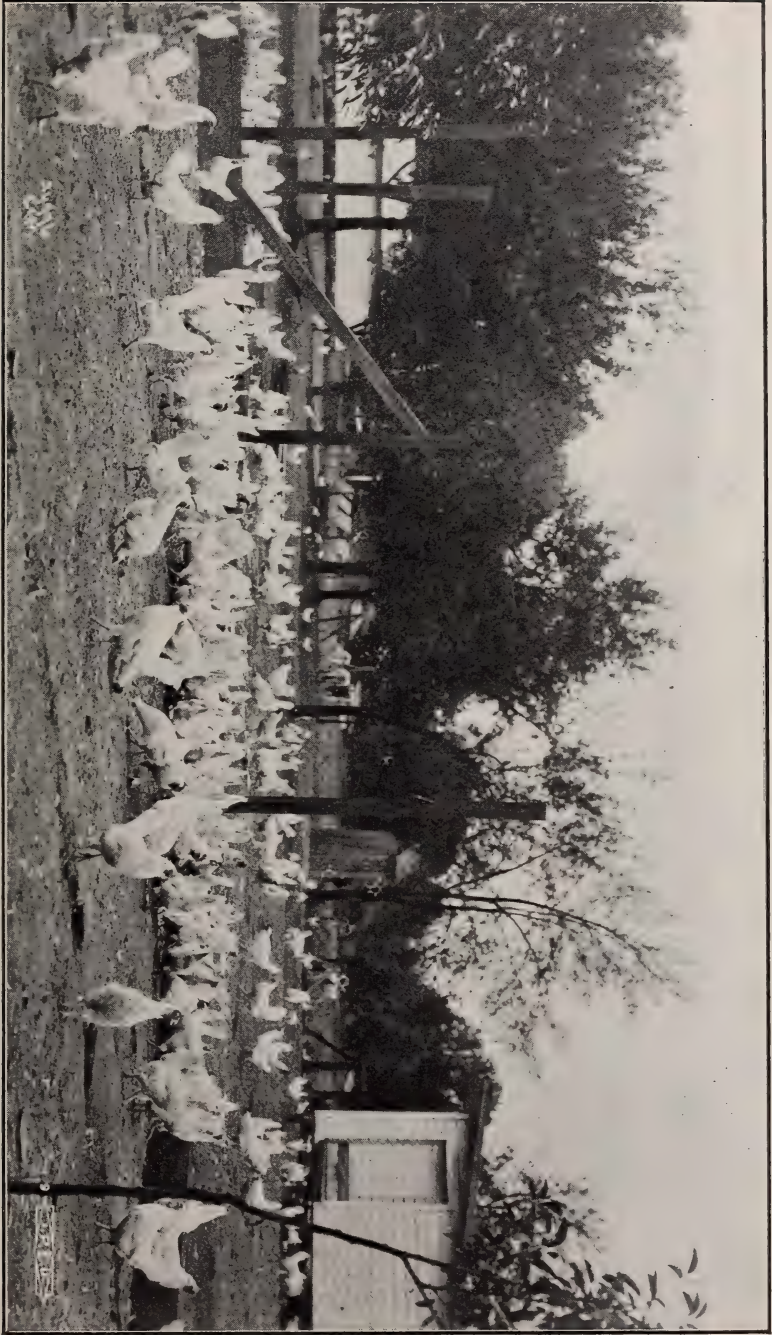
"One man can easily take care of one thousand hens and if he makes but a profit of \$1.50 per hen, it will bring him a nice income and let him and his family live a life of peace, comfort and independence."

R. L. Peck, county assessor of Skagit county, says:

"The poultry business has not been gone into to any great extent in this county, although a number of our residents are beginning to wake up to the possibilities of this business and are laying their plans for going into it quite extensively."

Ernest E. Gaskill, county assessor of Island county, says regarding poultry in his section:

"There is hardly a farmer that does not keep from 50 to 300 hens and from many small farmers this is their chief revenue while clear-



Partial view of large Poultry Ranch at Kent, King county.

ing and developing their small farms. There are several men who also make poultry their main occupation."

Belmat-Skinner Co., R. D. No. 1, Spokane, says:

"To be successful one must thoroughly understand every detail of the poultry business and it is made up wholly of details. The shortest cut we know of in learning the poultry business is for the person that wants to learn, to give one year of his time to a good practical poultryman."

W. C. Schreck, of Whidby Island Poultry Farm & Hatchery, Coupeville, Island county, says:

"The beginner, if possible, should visit the person he expects to get his foundation stock from. On this visit be sure and have eyes open and note condition of stock and premises, also have a mind of what branch of the business you expect to take up and stock your yards accordingly. Last, but not least, learn to feed what you get for profit not waste."

E. G. Francis, of Shelton, Mason county, says:

"I have not been engaged in the poultry business exclusively. Normally, I am able to make about one hundred per cent. on feed bought, not counting labor while doing a good deal of work not connected with the poultry business."

Mrs. J. W. G. Hanford, Spokane, specializes with White Wyandottes. She keeps a record of every hen. She has 15 that produced in one year 231, 260, 263, 222, 208, 232, 195, 224, 187, 234, 181, 210, 245, 223, and 238 eggs, respectively.

"The chicken business is just like any other; what you get out of it depends on what you put into it. The hens are only half the battle. The handling is the other half. The combination that wins is good stock plus intelligent handling."

A. O. Jeffries, of Kent, King county, combines chickens with fruit raising. He hatches no eggs but buys the three-month pullets.

"I find one year with another, my hens net me \$1.00 a piece per year. Of course, if one would sell off the old stock and buy pullets every year, the profit would be greatly increased."

Arch. C. Tweedie, county auditor, Port Townsend, Jefferson county, says:

"The main capital required to make a success of poultry raising is a willingness to follow the numerous small details that go to make up

the sum total of the business with unfaltering fidelity, a determination to succeed in the face of disappointments, and an inborn love of the business.

"Of course some money is to be desired in any business, and I should say that to a man who understood the business of raising poultry, \$1,000 would purchase him a five-acre logged-off tract, not too far from market, stock it with the necessary stock and would with care support him while he was improving his tract, such as clearing and planting to berries, etc. In this country and climate, chickens and fruit made an ideal combination, each improving the condition of the other. * * * * The profits depend a good deal on the character of the business you are running, a safe estimate of the profits of an egg farm would be \$1.50 per hen per annum. Of course, you understand that the cost of feed has a great deal to do with this, and the man that can raise his own feed has a better chance to show a larger profit than the man that has to buy his feed in the open market. As to markets, you cannot go very far wrong in the State of Washington, provided you do not locate too far away from a town or means of reaching a town.

"In conclusion, I would urge upon all prospective poultrymen before they go into business to study well the breed they intend to raise. It is foolish after you have stocked your farm with a certain breed of poultry to discover that you would have preferred some other breed, and while it takes time to make the change, you had better make it, for you obtain the best results when you are working with fowls that you really form an affection for. * * * *

"It costs no more to raise a standard bred fowl than it does a scrub, and the possibilities of profit are all with the former."

TURKEYS, DUCKS, GEESE AND OTHER FOWLS.

Many people are profitably engaged in raising turkeys, ducks or geese, and recommend them to others as more remunerative than chickens.

DUCKS.

Ducks are excellent layers and their eggs are relished by many people equally with hen's. The Indian Runner seems to be the most popular among duck producers. For meat they can be fattened in about eight weeks and sold at about a 100% profit. At the present time a market is a certainty.

C. H. Donald, Auburn, keeps ducks and hens on about a quarter of an acre of land:

"I found ducks paid better than the chickens, so increased ducks and disposed of nearly all the chickens.

"In 1911 we hatched all the ducks we could with two machines, 150-240 capacity, and sold them for from 25c to \$2.00 each according to size.

"The following is a fair estimate of expenses and receipts for 1911:

EXPENSES.	
Kale and cabbage.....	\$5 00
Corn, wheat, shorts, etc.....	200 00
Oil for incubating.....	6 00
Other expenses, including loss.....	12 00
<hr/>	
Total	\$223 00
RECEIPTS.	
Eggs sold for general market.....	\$75 00
Eggs sold for breeding.....	200 00
Stock consumed	37 50
Stock sold for consumption.....	30 00
Stock sold for breeding.....	150 00
Increase of stock.....	76 00
<hr/>	
Total receipts	\$568 50

Mrs. C. G. McCarty, Route 1, Walla Walla, keeps about 50 head of Parti-Colored Indian Runner ducks:

"I have not kept a connected record of all expenses, etc., but have kept account enough to know that it pays to keep poultry in this section of the country. Market eggs rarely sell for less than 15c per dozen in summer and in winter they reach 60c per dozen, wholesale. We have no trouble of disposing of our surplus duck eggs in the market. If properly cared for, young ducks should be nearly feathered in five or six weeks and ready for the market in eight weeks. It costs about 26c each to feed the Indian Runners until they are eight weeks old, when they should weigh three and a half to four pounds each. The early ones bring fifteen cents a pound and they average about twelve and one-half cents for the year."

William Bundy, Kent, Washington, raises chickens and ducks:

"We never have any trouble disposing of eggs or stock. We advertise the duck eggs and have filled orders for Oregon, California, Idaho, Montana, Minnesota and Alberta, besides scores of towns in Washington. We consider the industry profitable."



Another Friendly Family. Typical of thousands in all parts of the state.

E. G. Vashus, Kent, King county, says:

"In addition to our chickens, we had last year 25 Indian Runner ducks which through the year layed 4,557 eggs, or 182 each. At the market price of 25c they would bring \$96.00, but as we sold the most for hatching they brought us over \$200.00; besides we raised 300 young ducks, sold stock for \$120.00, marketed \$45.00 worth, and increased our flock to 95 birds."

John Cubby, of Tacoma, says:

"There is more money in ducks than in any other bird. They lay better and fetch a good price when killed. I had five ducks last year which laid 180 eggs apiece in 12 months."

TURKEYS.

Turkeys are raised in large flocks, both in eastern and western Washington. The mammoth bronze variety is the most popular. They need the greatest attention while they are less than eight weeks old. After that they become very hardy and will get most of their own feed if sufficient pasture is supplied. They will always bring the top notch prices, especially at Thanksgiving and Christmas time. By applying to the State College at Pullman, a pamphlet on "Raising Turkeys by Artificial Methods," by H. G. Blanchard, can be secured.

Some practical results are also given by H. E. Tuck, proprietor of the Fir Crest Farm, Kirkland, across Lake Washington from Seattle. Three years ago he started to see if turkeys could be raised profitably. In the year 1909 out of a setting of 11 eggs he hatched out 8 and raised 4 to maturity. These weighed 12 pounds each at Thanksgiving. The next year out of 16 pullets he raised 10 to maturity, disposing of 7 at Thanksgiving and keeping 3 for breeding. The next year he bought a ten-year-old tom to mate with the three pullets. Out of 104 eggs laid he sold 20 for \$5.00, placing the balance under hens. Out of these he raised 60 to maturity, selling 47 and keeping 13 for breeding. Total receipts for the 47 were \$157.70 with an expense of \$71.00, leaving \$86.70 for the labor. He says:

"I consider the Puget Sound climate well adapted to turkey raising and this season we expect to try for two or three hundred. We are

especially indebted for our success to an Englishman who writes for one of the poultry journals. We find his ideas work out all right."

John S. McMillin, Roche Harbor, San Juan county, hatched out about 1,000 turkeys last year and brought about 700 to maturity.

"We grow these birds primarily for breeding purposes, but of course sell our surplus upon the market, after using whatever is necessary for our hotel requirements. When properly and carefully handled, I think turkeys can be grown here very successfully and on a very profitable basis. It requires a great deal of patience and care when the birds are very small. After they are six or eight weeks old, however, they are very hardy and easily handled. If suitable range is provided for them, they get most of their feed outside and can be grown at much less expense for feed than the larger varieties of chickens. The market for turkeys is nearly always good and particularly about the holiday season. Prices are higher than for any other fowls that are grown."

GEESE.

A few geese will be found on nearly every poultry farm. However, not many are engaged in raising them to any great extent. W. D. Good, of Mt. Vernon, gives a representative statement of what can be done in developing this branch of industry:

"I have been in the poultry business for about eight years. I have had about twenty varieties of poultry but find that Toulouse geese are the easiest and most profitable to raise. That is when a person is in the right location. They would not do well on a city lot with no water. I have several acres of waste land outside of the dike where they can go in the water and rustle their own living. Sometimes I keep them in the field with the hogs and other stock.

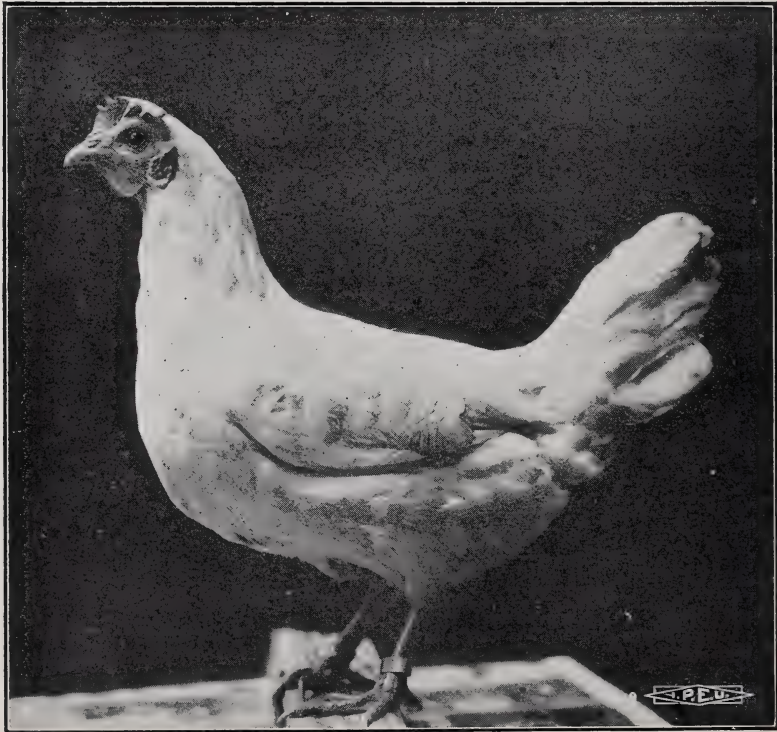
"I can raise them to maturity at a cost of from twenty-five to fifty cents each and they bring me from \$2.00 to \$2.50 apiece in the market."

J. W. Morris, a man of wide experience and manager of the chicken department of the Willows Poultry Ranch near Redmond, says:

"If you have plenty of pasture geese can be raised to advantage, for they will practically keep themselves until you are ready to fatten them. The Indian Runner ducks, too, will pay equally as well as chickens, for they are good layers. Chickens should clear outside of labor, from \$1.50 to \$2.00 per hen."

OTHER FOWLS.

Guinea fowls, pigeons, pea fowls, and pheasants are also raised, but can hardly be considered important as industries. Of these pigeons are in the lead, there being about 25,000 in the state, valued at about 35c each. Some encouragement has of late been given by some counties to the propagation of pheasants for game purposes. The future will probably see more development along this line.



World's Record Hen—295 eggs in 365 days—D. Tancred, Kent, owner.

TABLE SHOWING NUMBER AND VALUE OF DOMESTIC ANIMALS IN WASHINGTON FOR THE YEAR 1891 AND FOR THE YEARS 1893-1905, INCLUSIVE. COMPILED FROM THE ANNUAL REPORTS OF COUNTY ASSESSORS TO STATE BOARD OF EQUALIZATION.

(To get approximate actual values multiply valuation figures by 2½.)

Year	HORSES, MULES AND ASSES		CATTLE		SHEEP		HOGS	
	No.	Value	No.	Value	No.	Value	No.	Value
1890 ...								
1891 ...	168,013	\$6,439,733	226,667	\$3,924,118	240,459	\$482,374	53,056	\$157,917
1892 ...								
1893 ...	171,518	5,192,986	206,372	2,980,845	290,021	580,042	53,487	187,211
1894 ...	162,933	3,643,474	190,470	2,190,168	286,487	358,107	67,782	169,491
1895 ...	161,627	2,693,113	195,179	2,414,728	361,286	328,768	101,218	207,498
1896 ...	155,485	2,361,290	211,009	2,543,655	446,989	514,068	113,631	204,535
1897 ...	174,877	2,022,818	237,967	2,561,620	491,268	491,268	83,617	125,426
1898 ...	171,985	2,001,495	229,395	2,474,910	503,324	503,324	56,853	85,273
1899 ...	185,237	2,421,558	245,269	2,943,228	514,990	772,474	66,117	132,234
1900 ...	181,870	2,399,968	276,154	3,313,848	456,693	685,046	71,579	143,158
1901 ...	216,328	5,634,745	343,913	4,809,408	569,068	1,126,434	83,954	256,848
1902 ...	183,195	4,321,290	332,136	5,313,904	741,813	1,257,768	96,509	289,527
1903 ...	189,243	4,342,270	380,295	6,082,010	687,724	1,375,450	105,738	317,214
1904 ...	189,746	4,279,430	397,267	5,887,085	633,258	949,493	99,447	298,341
1905 ...	210,716	6,213,969	406,569	5,738,017	525,770	1,051,540	96,196	336,681

TABLE SHOWING NUMBER AND VALUE OF DOMESTIC ANIMALS IN WASHINGTON FOR THE YEARS 1905-1911, INCLUSIVE. COMPILED FROM ANNUAL REPORTS OF COUNTY ASSESSORS TO STATE BOARD OF EQUALIZATION.

(To get approximate actual values multiply valuation figures by 2½.)

Year	HORSES 1, 2 and 3 years old		WORK HORSES		STALLIONS		MULES AND ASSES	
	No.	Value	No.	Value	No.	Value	No.	Value
1906 ...	82,971	\$1,893,158	134,666	\$6,232,622	910	\$272,500	4,157	\$199,616
1907 ...	76,658	1,729,431	142,637	7,197,932	1,201	372,310	5,132	256,600
1908 ...	82,563	2,030,173	150,127	7,691,912	1,208	319,815	6,179	292,514
1909 ...	92,777	2,491,680	154,947	8,499,447	1,050	323,216	8,377	444,900
1910 ...	98,207	2,744,989	154,251	9,207,113	1,252	304,839	9,630	561,968
1911 ...	91,741	2,756,403	160,396	9,227,107	1,231	303,965	11,270	643,044

Year	STOCK CATTLE 1, 2 and 3 years old		MILCH COWS		BULLS, KEPT FOR BREEDING PURPOSES		STOCK SHEEP AND GOATS	
	No.	Value	No.	Value	No.	Value	No.	Value
1906 ...	264,851	\$2,655,108	133,706	\$2,654,120	4,759	\$118,715	489,244	\$1,101,400
1907 ...	209,926	2,050,320	137,539	2,750,780	4,526	113,150	478,925	1,197,327
1908 ...	184,305	1,893,945	148,085	2,926,806	4,606	93,944	415,661	961,785
1909 ...	166,960	1,837,617	149,449	3,183,958	4,514	98,288	396,329	930,420
1910 ...	144,883	1,752,867	186,006	3,145,034	4,619	101,553	355,374	805,079
1911 ...	120,524	1,512,542	136,934	3,140,412	4,540	103,248	382,528	776,178

Year	SHEEP—BUCKS, KEPT FOR BREEDING PURPOSES		HOGS		POULTRY	Total assessed valuation of livestock
	No.	Value	No.	Value	Value	
1906 ...	7,708	\$38,515	81,904	\$245,712	\$189,245	\$15,600,711
1907 ...	7,895	39,475	89,820	381,744	263,230	16,332,299
1908 ...	3,790	13,899	109,910	383,622	268,947	16,877,362
1909 ...	7,208	25,820	87,240	330,619	341,317	18,507,282
1910 ...	4,033	15,664	77,073	344,327	342,563	19,325,996
1911 ...	5,677	19,501	93,915	432,656	400,832	19,295,888

TABLE SHOWING NUMBER AND VALUE OF DOMESTIC ANIMALS IN WASHINGTON BY COUNTIES AS RETURNED BY COUNTY BOARDS OF EQUALIZATION FOR YEAR 1911.

(To get approximate actual values multiply valuation figures by 2½.)

COUNTIES	HORSES*			WORK HORSES			STALLIONS			MULES AND ASSES			STOCK CATTLE†			MILK COWS		
	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value
1 Adams	3,673	\$87,855	9,890	\$499,045	43	\$8,005	1,003	\$50,030	3,021	\$37,065	1,687	\$35,495						
2 Asotin	1,826	61,633	1,532	96,738	17	6,330	46	3,950	2,570	31,137	661	16,640						
3 Benton	1,767	31,745	3,363	141,085	13	4,370	223	10,745	581	6,310	992	26,305						
4 Chehalis	713	22,216	2,105	137,391	9	2,625	28	1,649	2,205	24,471	3,410	64,890						
5 Cowlitz	1,165	23,765	2,382	128,745	11	1,445	94	5,725	607	6,055	1,064	23,090						
6 Clallam	1,755	50,495	808	50,495	16	4,450	11	445	1,679	15,832	2,891	64,105						
7 Clark	1,013	36,695	8,917	232,140	16	5,500	44	3,015	3,267	31,225	8,854	184,725						
8 Clatsop	2,279	67,930	8,777	211,710	28	8,110	869	54,160	2,907	22,780	1,242	26,440						
9 Cowlitz	799	22,208	1,438	92,961	7	2,950	22	1,445	2,554	32,679	3,324	86,120						
10 Douglas	5,078	117,215	7,936	414,690	83	10,255	633	34,080	2,342	26,055	1,958	37,475						
11 Ferry	1,337	41,333	848	52,069	13	4,540	75	5,005	1,735	20,742	1,017	26,200						
12 Franklin	972	13,125	3,160	88,855	10	1,410	438	12,642	1,750	17,015	381	8,247						
13 Grant	3,962	101,983	2,366	143,808	27	5,976	508	23,900	4,406	53,357	1,473	21,295						
14 Grant	3,734	81,335	5,830	309,000	29	8,650	284	16,150	1,435	12,795	1,778	35,643						
15 Island	379	14,365	466	32,160	1	250	6	65	844	7,683	1,608	31,860						
16 Jefferson	136	4,510	510	32,840	2	70	2	65	708	8,713	1,778	35,643						
17 King	3,456	129,410	10,187	683,327	64	7,710	308	17,900	3,744	54,195	17,757	432,150						
18 Kitsap	696	19,822	261	19,600	7	800	7	945	438	4,555	1,925	38,989						
19 Kittitas	2,876	99,927	2,505	222,525	28	6,950	175	10,155	4,751	64,555	2,486	75,230						
20 Klickitat	2,362	66,005	2,773	195,510	29	11,700	259	17,990	2,983	32,201	1,808	41,990						
21 Lewis	2,665	99,788	2,675	211,679	15	3,260	70	6,318	6,608	74,949	6,892	151,311						
22 Lincoln	7,364	204,365	14,577	317,610	102	29,065	1,553	80,410	3,987	33,060	4,412	88,010						
23 Mason	331	10,379	514	32,131	4	1,150	192	12,680	11,283	166,790	3,415	23,976						
24 Okanogan	6,001	127,120	5,329	246,840	76	19,710	102	19,180	1,468	9,004	2,167	92,184						
25 Pacific	304	5,465	737	20,221	10	714	13	133	1,448	4,723	587	14,488						
26 Pend Oreille	324	10,290	942	37,729	5	1,100	15	1,143	8,126	146,292	5,228	106,178						
27 Pierce	3,258	123,419	3,760	262,095	14	3,680	76	5,393	2,869	25,385	5,380	30,940						
28 San Juan	1,580	8,134	844	51,935	3	3,510	39	1,200	2,969	25,385	5,380	30,940						
29 Skagit	1,562	46,855	2,292	137,720	14	2,130	7	270	3,535	30,940	10,279	242,540						
30 Skamania	113	3,680	379	23,700	7	2,275	35	2,475	4,839	45,610	7,901	14,860						
31 Snohomish	2,125	88,135	3,144	212,780	18	4,105	459	26,535	3,923	51,190	3,161	204,185						
32 Spokane	5,648	193,085	15,286	765,965	89	15,655	459	26,535	3,923	43,873	3,970	90,354						
33 Stevens	2,633	62,696	4,770	219,346	24	5,890	112	6,756	3,598	31,669	4,715	95,358						
34 Thurston	1,533	42,954	1,799	124,444	29	7,370	31	1,735	705	8,925	4,715	95,358						
35 Wankiatum	93	2,415	327	12,845	2	1,600	.....	.....	.....	.....	.....	.....
36 Walla Walla	3,119	79,510	8,376	454,522	68	17,005	1,970	135,355	3,131	36,410	2,278	49,690						
37 Whatcom	735	23,348	2,820	169,253	29	4,210	32	1,750	2,964	30,823	5,980	136,234						
38 Whitman	8,449	275,855	17,749	1,055,810	50	52,730	1,360	68,300	10,450	162,742	6,360	137,670						
39 Yakima	6,366	264,705	6,532	557,155	27	23,085	269	24,230	7,743	130,605	4,845	181,105						
Totals.....	91,741	\$2,736,403	160,396	\$9,227,107	1,231	\$303,965	11,270	\$643,044	120,524	\$1,512,542	136,934	\$3,140,412						

* All excepting work horses and stallions.
† All cattle excepting milk cows and bulls for breeding purposes.

TABLE SHOWING NUMBER AND VALUE OF DOMESTIC ANIMALS IN WASHINGTON BY COUNTIES AS RETURNED BY COUNTY BOARDS OF EQUALIZATION FOR YEAR 1911.—CONCLUDED.

(To get approximate actual values multiply valuation figures by 2½.)

COUNTIES	BULLS, FOR BREEDING PURPOSES		STOCK SHEEP AND GOATS		SHEEP BUCKS, FOR BREEDING PURPOSES		HOGS		POULTRY		TOTAL ASSESSED VALUATION OF LIVESTOCK	
	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value		
1 Adams	65	\$1,360	14,924	\$35,780	35	\$190	3,115	\$11,769	1	\$775,820	1	\$775,820
2 Asotin	38	886	24,196	54,441	132	660	1,762	9,375	2	283,710	2	283,710
3 Benton	19	420	51,860	100,360	101	360	325	5,055	3	337,275	3	337,275
4 Chelan	154	2,606	640	1,662	342	786	1,963	7,739	8	274,753	8	274,753
5 Chelan	26	570	153	300	3	5	513	2,195	2	198,990	5	198,990
6 Okanogan	110	2,660	1,289	2,629	15	70	1,136	4,957	1	171,653	6	171,653
7 Clark	264	5,005	1,644	4,045	5	25	2,824	15,395	6	524,150	7	524,150
8 Columbia	39	5,600	20,564	39,720	120	1,000	3,299	11,930	4	444,400	8	444,400
9 Cowlitz	136	3,915	903	1,415	44	99	1,722	7,239	2	253,662	9	253,662
10 Douglas	43	875	47	125	2	10	2,502	12,145	9,680	662,605	10	662,605
11 Ferry	26	910	232	480	.....	.....	279	1,414	2,037	154,890	11	154,890
12 Franklin	8	140	24,676	37,014	130	520	615	3,063	644	165,138	12	165,138
13 Garfield	57	906	13,969	29,018	55	275	4,120	11,585	3,095	375,050	13	375,050
14 Grant	25	510	11,221	20,330	1,784	3,670	2,049	7,905	5,480	487,120	14	487,120
15 Island	31	605	2,103	5,075	11	55	488	2,855	5,531	104,522	15	104,522
16 Jefferson	85	2,445	394	1,002	11	50	457	2,413	1,174	85,872	16	85,872
17 King	411	12,640	1,872	5,640	533	1,405	4,274	25,600	11,749	1,421,617	17	1,421,617
18 Kitsap	31	661	194	388	2	5	376	1,585	13,789	100,449	18	100,449
19 Kittitas	129	3,540	53,405	108,025	250	1,220	1,714	11,135	1,515	604,775	19	604,775
20 Klickitat	66	1,300	34,033	68,112	283	2,010	7,295	21,896	3,782	461,856	20	461,856
21 Lewis	152	\$5,524	2,552	5,693	.....	.....	4,059	19,633	19,348	586,798	21	586,798
22 Lincoln	82	1,740	135	240	30	75	3,751	12,900	11,005	1,279,410	22	1,279,410
23 Mason	52	1,150	339	701	.....	.....	224	1,587	5,721	84,588	23	84,588
24 Okanogan	197	5,450	5,528	12,668	57	350	2,012	8,074	1,140	682,342	24	682,342
25 Pacific	105	1,001	277	361	.....	.....	305	856	1,445	61,534	25	61,534
26 Pend Oreille	33	880	170	354	.....	.....	382	2,213	2,408	95,028	26	95,028
27 Pierce	234	6,623	8,651	170	378	2,336	12,101	42,019	42,019	716,188	27	716,188
28 San Juan	50	812	6,239	15,039	60	318	606	3,939	1,292	292,290	28	292,290
29 Skagit	194	1,086	1,086	2,905	5	1,425	5,510	1,090	352,495	29	352,495	
30 Skamania	26	575	205	965	85	100	304	1,530	520	32,000	30	32,000
31 Snohomish	299	5,790	843	2,530	148	730	1,728	9,425	15,370	629,900	31	629,900
32 Spokane	255	5,100	573	1,900	283	860	4,638	24,415	40,520	325,670	32	325,670
33 Stevens	103	9,080	2,462	5,317	465	1,651	2,066	10,582	14,014	461,365	33	461,365
34 Thurston	101	3,048	1,392	3,084	26	104	2,106	9,969	17,460	396,582	34	396,582
35 Wahkiakum	106	2,095	99	157	58	104	389	1,626	1,058	71,489	35	71,489
36 Walla Walla	80	1,550	25,936	51,925	42	140	3,973	17,110	3,435	846,015	36	846,015
37 Whatcom	239	4,967	1,390	2,971	.....	.....	1,462	7,339	388,803	97	388,803	
38 Whitman	200	5,855	19,127	46,082	111	910	16,127	75,324	26,506	1,890,034	38	1,890,034
39 Yakima	159	4,870	62,155	100,220	550	2,735	4,332	32,590	58,690	1,380,990	39	1,380,990
Totals	4,540	\$103,248	382,528	\$776,178	5,677	\$19,501	96,915	\$32,656	\$40,832	\$19,295,888		\$19,295,888

LIST OF COUNTIES, CITIES, AND INCORPORATED TOWNS AND
THEIR POPULATION AS GIVEN BY THE 1910 CENSUS
REPORTS.

(ARRANGED ACCORDING TO COUNTIES.)

Population for entire state.....			1,141,990
ADAMS COUNTY	10,920	GRANT COUNTY	8,698
Cunningham	308	Coulee City	276
Hatton	161	Ephrata*	323
Lind	831	Hartline	237
Othello .....	.....	Krupp	293
Ritzville*	1,859	Quincy	264
Washucna	300	Warden	739
ASOTIN COUNTY	5,831	Wilson Creek	405
Asotin*	820	ISLAND COUNTY	4,704
Clarkston	1,257	Coupeville*	310
BENTON COUNTY	7,937	JEFFERSON COUNTY	8,337
Kennewick	1,219	Port Townsend*	4,181
Prosser*	1,298	KING COUNTY	284,638
Richland	721	Auburn	957
CHEHALIS COUNTY	35,590	Bothell	599
Aberdeen	13,060	Issaquah	628
Cosmopolis	1,132	Kent	1,908
Elma	1,532	Kirkland	532
Hoquiam	8,171	North Bend	299
Montesano*	2,488	Pacific	413
Oakville	465	Renton	2,740
Ocosta	127	Seattle*	237,194
CHELAN COUNTY	15,104	Skykomish	238
Cashmere	625	Snoqualmie	279
Chelan	682	Tukwila	361
Lakeside	222	KITSAP COUNTY	17,647
Leavenworth	1,551	Bremerton	2,993
Wenatchee*	4,050	Charleston	1,062
CLALLAM COUNTY	6,755	Port Orchard*	682
Port Angeles*	2,286	Poulsbo	364
CLARKE COUNTY	26,115	KITTITAS COUNTY	18,561
Camas	1,125	Cle Elum	2,749
LaCenter .....	.....	Ellensburg*	4,209
Ridgefield .....	.....	Roslyn	3,126
Vancouver*	9,300	South Cle Elum .....	.....
Washougal	456	KLICKITAT COUNTY	10,180
Yacolt	435	Goldendale*	1,203
COLUMBIA COUNTY	7,042	White Salmon	682
Dayton*	2,389	LEWIS COUNTY	32,127
Starbuck	761	Centralia	7,311
COWLITZ COUNTY	12,561	Chehalis*	4,507
Castle Rock	998	Little Falls	631
Kalama*	816	Pe Ell	838
Kelso	2,039	Toledo	375
Woodland	384	Winlock	1,140
DOUGLAS COUNTY	9,227	LINCOLN COUNTY	17,539
Bridgeport	431	Almira	368
Mansfield .....	.....	Creston	308
Waterville*	950	Davenport*	1,229
FERRY COUNTY	4,800	Harrington	661
Republic*	999	Odessa	885
FRANKLIN COUNTY	5,153	Reardan	527
Connell	877	Sprague	1,110
Kahlotus	132	Wilbur	757
Pasco*	2,083	MASON COUNTY	5,156
GARFIELD COUNTY	4,199	Shelton*	1,163
Pataha	176	OKANOGAN COUNTY	12,887
Pomeroy*	1,605	Brewster	296
		Conconully*	357

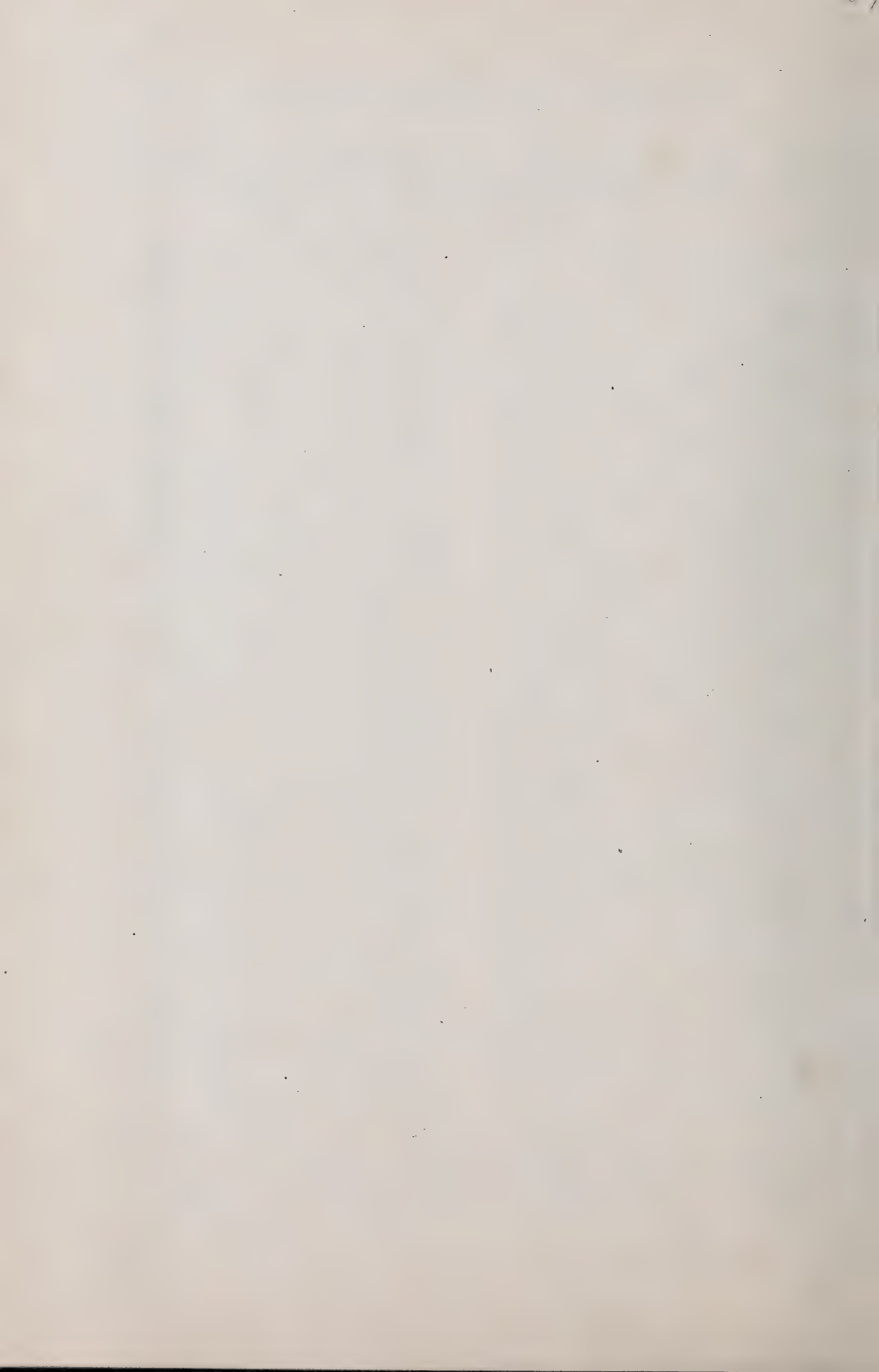
*County seat.

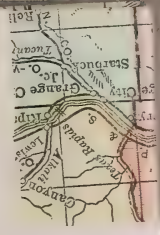
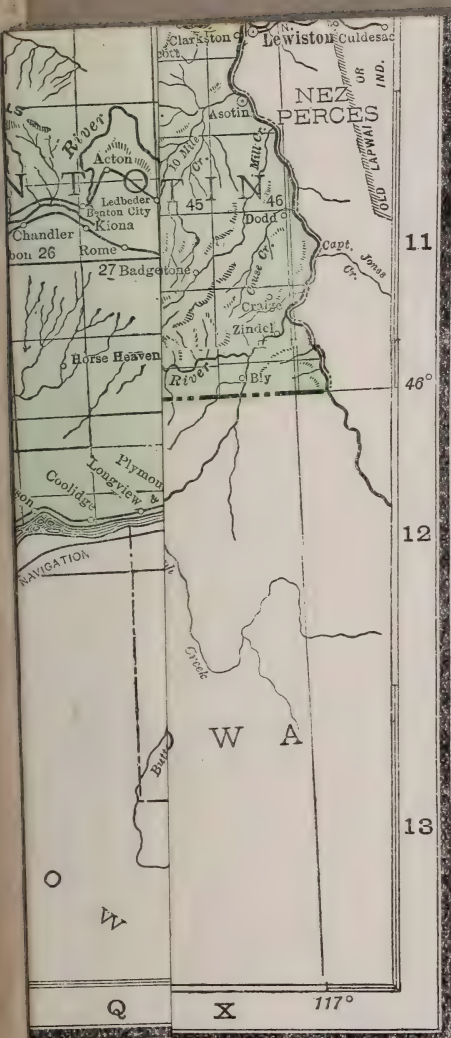
LIST OF COUNTIES, CITIES, AND INCORPORATED TOWNS AND
THEIR POPULATION AS GIVEN BY THE 1910 CENSUS
REPORTS.—CONCLUDED.

OKANOGAN COUNTY— <i>Cont.</i>		SPOKANE COUNTY— <i>Cont.</i>	
Okanogan	611	Latah	339
Omak	911	Medical Lake	1,730
Oroville	495	Rockford	663
Twisp	227	Spangle	299
PACIFIC COUNTY	12,532	Spokane*	104,402
Ilwaco	664	Waverly	318
Raymond	2,450	STEVENS COUNTY	25,297
South Bend*	3,023	Chewelah	823
PEND OREILLE COUNTY † .....	....	Colville*	1,512
Ione	634	Kettle Falls	377
Metaline Falls	238	Marcus	481
Newport*	1,199	Northport	476
PIERCE COUNTY	120,812	Springdale	251
Buckley	1,272	THURSTON COUNTY	17,581
Dupont .....	....	Bucoda	855
Eatonville	754	Olympia*	6,996
Milton	448	Tenino	1,038
Orting	799	Tumwater	490
Puyallup	4,544	WAHIAKUM COUNTY	3,285
Roy	315	Cathlamet*	352
Ruston	780	WALLA WALLA COUNTY	31,931
South Prairie	264	Prescott	502
Steilacoom	430	Waitsburg	1,237
Sumner	892	Walla Walla*	19,364
Tacoma*	83,743	WHATCOM COUNTY	49,511
Wilkeson	899	Bellingham*	24,298
SAN JUAN COUNTY	3,603	Blaine	2,289
Friday Harbor*	400	Ferndale	691
SKAGIT COUNTY	29,241	Lynden	1,148
Anacortes	4,168	Sumas	902
Burlington	1,302	WHITMAN COUNTY	33,280
Concrete	945	Albion .....	....
Hamilton	405	Colfax*	2,783
LaConner	603	Colton	393
Lyman	441	Elberton	330
McMurray	563	Endicott	474
Mount Vernon*	2,381	Farmington	489
Sedro Woolley	2,129	Garfield	932
SKAMANIA COUNTY	2,887	Lamont .....	....
Stevenson*	387	Malden	798
SNOHOMISH COUNTY	59,209	Oakesdale	882
Arlington	1,476	Palouse	1,549
Edmonds	1,114	Pullman	2,602
Everett*	24,814	Rosalia	767
Gold Bar	246	St. John	421
Granite Falls	714	Tekoa	1,694
Index	417	Uniontown	426
Marysville	1,239	YAKIMA COUNTY	41,709
Monroe	1,552	Grandview	320
Snohomish	3,244	Granger	453
Stanwood	544	Mabton	666
Sultan	576	North Yakima*	14,082
SPOKANE COUNTY	139,404	Sunnyside	1,379
Cheney	1,207	Toppenish	1,598
Deer Park	875	Wapato	400
Fairfield	308	Yakima City	263
Hillyard	3,276	Zilla	979

*County seat.

†Organized in 1911; previously a part of Stevens county.







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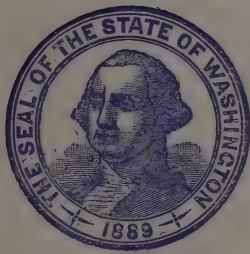
EXPLANATION:

State Capitals shown thus County Seats thus

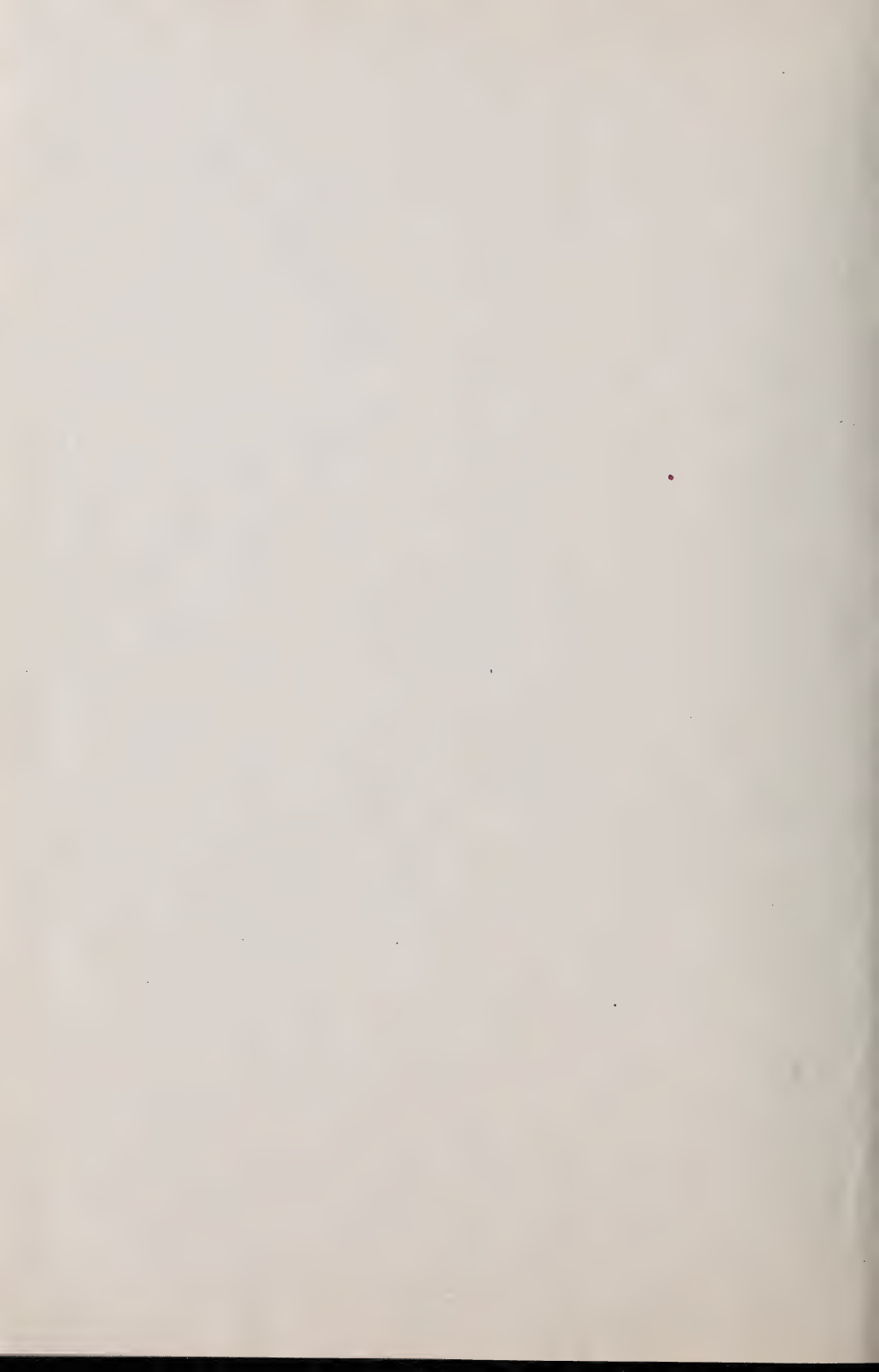
SCALE

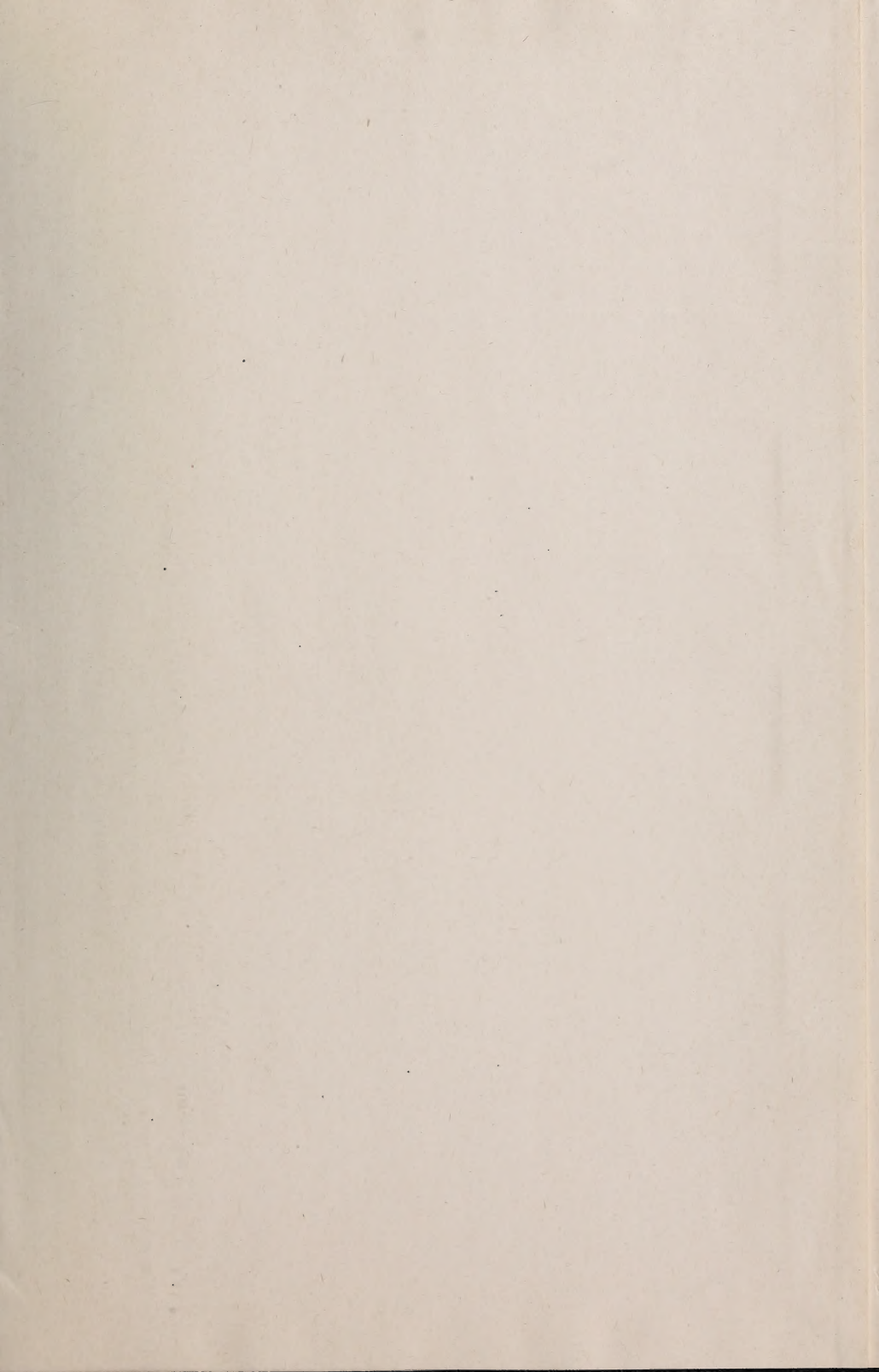
Statute Miles. 16-1 inch.

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