

University of Idaho
Agricultural Experiment Station

I. Report of the Director for the two
years ending June 30th, 1900

II. Meteorological Records

JAMES A. MACLEAN, Director

ORGANIZATION.

BOARD OF REGENTS :

JOHN B. GOODE,	- - - -	President, Cœur d' Alene
MRS WM. H. RIDENBAUGH,	- - - -	Vice President, Boise
GEO. C. PARKINSON,	- - - -	Secretary, Preston
JOHN W. JONES,	- - - - - -	Blackfoot
H. E. WALLACE,	- - - - - -	Caldwell

EXECUTIVE COMMITTEE :

JOHN B. GOODE,	GEO. C. PARKINSON,	JOHN W. JONES
----------------	--------------------	---------------

OFFICERS OF THE STATION:

PRESIDENT JAMES A. MACLEAN,	- - - -	Director
WILLIAM L. PAYNE,	- - - - - -	Treasurer
HERBERT T. CONDON,	- - - - - -	Clerk

STATION STAFF:

JAMES A. MACLEAN,	- - - - - -	Director
LOUIS F. HENDERSON,	- - - - - -	Botanist
JOHN M. ALDRICH,	- - - - - -	Entomologist
JOHN E. BONEBRIGHT,	- - - - - -	Meteorologist
FRED A. HUNTLEY,	- - - - - -	Horticulturist
HIRAM T. FRENCH,	- - - - - -	Agriculturist
S. AVERY,	- - - - - -	Chemist
ARTHUR P. ADAIR,	- - - -	Acting Irrigation Engineer
HAL T. BEANS,	- - - - - -	Assistant Chemist

BULLETINS.

The regular bulletins of the Station are sent free to all who request them. Some bulletins issued during the past year are :

25. The Composition of Arsenical Insecticides.
26. (1) Crude Petroleum, (2) The Elm Louse, (3) The Pear Leaf Blister Mite.
27. Mushrooms or Toadstools; a Natural Food Product.
28. Some Idaho Soils.

Letter of Transmittal.

To His Excellency the Governor of Idaho, Boise, Idaho.

SIR:—I have the honor to submit herewith the report of the Idaho Agricultural Experiment Station for the biennium ending June 30th, 1900. This report includes the reports of the Agriculturist, Horticulturist, Chemist, Botanist, Entomologist and Meteorologist of the Station, and the financial reports for the fiscal years ending June 30th, 1899, and June 30th, 1900.

Very respectfully,

J. A. MACLEAN, Director.

Moscow, October 1st, 1900.

Department of Agriculture.

President J. A. MacLean, Director Experiment Station.

DEAR SIR:—I have the honor to submit the following condensed report of the Agricultural department for the two years ending June 30th, 1900.

I entered upon the work of this department September, 1st, 1898. At that time I found growing upon the Station farm several varieties of potatoes, beans, corn, grains, and forage plants. These were planted under the direction of the Horticulturist who was acting Agriculturist of the Station. Seeds were gathered from these crops and such as promised to become of value were preserved for future use. Many of the varieties under trial did not reach maturity owing to early frosts.

As there were no buildings on the farm suitable to accommodate stock, and no water supply, there was no effort made that year to use the rough feeds or grains produced.

In the spring of 1899 one hundred and sixty varieties of potatoes were planted and notes kept during the season, the results of which appear in Bulletin No. 24.

Other crops were tested such as millets, rape, cereals, buckwheat and root crops. The growing of corn suitable for silage was undertaken at this time. This was the first attempt of the Station to grow corn for this purpose.

In the fall of 1899 twelve head of steers were purchased for experimental feeding on grains and roughage produced on the farm. The results of this work were published in Bulletin No. 24.

In the spring of 1899 we began a line of experimentation in seeding land to clovers and grasses for pasturage and for hay. This work has been fairly successful and is being extended so as to cover the entire farm as rapidly as possible in a system of rotation of crops.

The farm was very much overrun with wild oats, thus requir-

ing considerable time and expense in cultivation without a proportionate return. The seeding of the land to clover, and cultivation of corn on the fallow, has in a large measure cleared the land of this troublesome pest.

In 1899 a test was made in growing field peas for hay and roughage. The experiment was again repeated in 1899 with very satisfactory results. Of several varieties tested, the black-eyed marrow fat pea gave the largest returns in yield of hay, while the Canada field pea is worthy of recommendation for this portion of Idaho.

The Russian millets sent to the Station from the Department of Agriculture at Washington, D. C., were first grown in 1899. They yielded well in seed and forage and after further trial in 1900 we are prepared to recommend them for a more extended trial on the farms of this section and other parts of the state.

COOPERATIVE EXPERIMENTS.

In the spring of 1900 the Agricultural department of the Station sent out some six hundred packages of seed potatoes for trial in the state. The returns are not all in for this work, but so far as received, the results are very satisfactory, indicating that by this means we have distributed many varieties of potatoes to the farmers of the state which surpass the varieties already grown. These samples were sent to every county in the state.

Other seeds such as millet, wheat, oats, rape, sorghum, buckwheat and alfalfa have been sent out from the department for a more extended trial on the farms of the state.

IMPROVEMENTS.

In 1889 a neat seven room farm cottage was erected on the farm. This was built to accommodate the help which is needed to perform the work of the farm.

A small silo was built in 1899, and filled with corn. This material was used in experimental feeding reported in Bulletin No. 24.

Considerable new fence has been built including portable fence used in carrying on pasture experiments with sheep and pigs.

Plans for a stock barn 60x70 with basement full size were submitted to the Board of Regents in June, 1900. The plans were adopted and the building has since been erected. A water system, including windmill and tanks, was provided for in the spring of 1900, and has since been put in.

WORK IN PROGRESS AND CONTEMPLATED WORK.

1. Experiments in feeding cattle, sheep and swine.
2. Experiments in growing grasses and forage plants.
3. Pasture experiments with clover and grasses.
4. Testing varieties of Russian cereals.
5. Testing and breeding varieties of corn with a view of getting one which will be well adapted to this section.

INSTITUTE WORK.

While this work is not strictly station work yet in this state it has been closely associated with it. Institute work has been the means of disseminating the results of experiments carried on at the Station. Many times it is of more importance in this direction than published reports, and especially in this state where the conditions vary so greatly.

The institute work was begun in 1898 and has been pursued with increasing interest until the demand of such work is beginning to tax the capacity of the Station staff. Institutes have been held in twelve counties of the state.

CORRESPONDENCE.

The number of inquiries regarding farm operations and the growing of various crops of the farm, has greatly increased in the two years covered by this report. This is becoming an important means of rendering assistance to the farmers of the state, by giving them the results of Station work here and facts gathered from work of the other stations,

All of which is respectfully submitted,

H. T. FRENCH, Agriculturist.

Department of Botany.

Director J. A. MacLean.

SIR:—I beg leave to offer the following report of work undertaken or completed by this department during the years 1898–1900.

Two lines of work were undertaken during this period. The first had relation to some of our fungous diseases, and to apple scab in particular.

The second to grasses, introduced and native.

Under the first line a bulletin, No. 11, was prepared from data already in the possession of the Station on "Rusts and Smuts." This bulletin treated of the nature and life history of these diseases, of treatment by the "Blue Stone" and "Hot Water" methods theoretically, and of their practical application on the Station farm.

At the same time observations were being made upon the worst weeds in the state, and after considerable time spent in taking trips through the state to examine into this subject, as well as making observations in respect to fungous diseases a bulletin, No. 14, was prepared on "Twelve of Idaho's Worst Weeds." Contemporaneously with these two lines of work, special attention was being given to grasses, introduced and native. A plot of ground was set apart by the Regents for this work, and student and other labor was employed to get the ground into condition, the land was surveyed into plats, and these were then seeded. The results of this will appear in a bulletin in a short space of time. It is sufficient at this time to say that most of the plats are flourishing, and about fifty grasses in round numbers are now on the plats or have been, demonstrating without possibility of contradiction that these Palouse uplands are well adapted to grass growing, and consequently to dairying and stock raising.

The following year special attention was directed to the Apple

Scab, which is fast getting a foothold in this country. In fact scarcely an orchard throughout the Palouse, Potlatch and Lewiston districts in Idaho and adjacent Washington is altogether free from this disease. To give value to a bulletin on this subject, an orchard in Juliaetta, belonging to Mr. Aldrich of that place was selected as one in which the fungus had entrenched itself to perfection, and together with the Entomologist of the Station, Prof. Aldrich, spraying for this disease as well as for the Codlin Moth, was undertaken. Part of the orchard of ten acres was sprayed twice, and the larger part once. Distance from scene of operations, continuous wet weather that spring, and daily University duties rendered it impossible to do more than this, though, with this partial work, the results were gratifying and led to the publication of Bulletin No. 20 entitled "Apple Scab in the Potlatch."

This, together with college duties and attendance at farmers' institutes, constituted the work of this department for the period 1898-1900.

Very respectfully,

L. F. HENDERSON, Botanist.

Department of Chemistry.

President J. A. MacLean, Director of the Experiment Station.

DEAR SIR:—The following report is an outline of the work carried on in the department of Chemistry since September 1st, 1899. As the work is of a varied character, it can be discussed most conveniently by topics. In this report no attempt will be made to specify the parts performed by the different Chemists in the employ of the Station.

IDAHO WHEAT.

The chief agricultural industry of Northern Idaho is wheat growing. In view of this fact it was decided to collect data concerning the composition of many samples of wheat grown in this part of the state. At the same time it seemed desirable to study the composition of the straw, especially since straw and wheat-hay are so commonly fed to horses and to other stock.

Accordingly during the summer of 1899 a large number of samples of different varieties were secured. The sampling of wheat and straw was begun when the grain was just in the milk and continued till the grain was fully ripe. The greater number of these samples have since been analyzed. It is believed that the complete returns will show that wheat in Northern Idaho is richer in gluten than was commonly supposed; also that the ash content of the straw is remarkably high. A careful study of the changes that take place in the straw during the ripening process will be made.

The work has been delayed for nearly a year owing to the resignation of the former assistant chemist and the pressure of work demanding immediate attention. It is hoped that the work may be completed and published as a Station bulletin during the coming summer.

FOODS.

A number of samples of products used in human foods were analyzed. Only such data as will not appear in Station bulletins will be given here.

BAKING POWDERS.—All samples were purchased in the open market in Moscow.

	SCHILLING'S Per cent.	ROYAL Per cent.	PRICE'S Per cent.
Available carbon dioxide (CO ₂).....	14.00	13.08	13.09
Total carbon dioxide (CO ₂).....	14.55	13.52	13.75
Sodium oxide (Na ₂ O).....	11.80	10.75	10.71
Potassium oxide (K ₂ O).....	17.00	11.97	10.59
Tartaric acid (C ₄ H ₄ O ₅).....	51.78	40.60	36.74
Filler (Starch)	none	16.74	18.18
Water (by difference).....	4.87	6.42	10.03

These are all excellent samples of pure tartrate powders. The analysis of Schilling's shows that this had not required a filler to prevent decomposition up to the time of analysis.

CALUMET BAKING POWDER.

	Per cent.
Available carbon dioxide (CO ₂).....	11.57
Total carbon dioxide (CO ₂).....	13.01
Sodium oxide (Na ₂ O).....	13.05
Lime (CaO).....	2.48
Alumina (Al ₂ O ₃).....	4.28
Sulphuric acid (SO ₃).....	12.37
Phosphoric acid.....	3.58
Starch	38.78
Water (by difference).....	13.69

The analysis of this baking powder shows that it is a sodium alum, phosphate preparation.

WATER MELON SYRUP.—A sample of syrup made by evaporating the juice of water melons was submitted for analysis by Mr. R. Schleicher of Lewiston. The sample contained 65.14 per cent sugar (as dextrose.)

INSECTICIDES.

During the past two years very damaging reports about the purity of commercial arsenical insecticides have been in circulation. At the request of a number of orchardists, purchasers of Paris green and London purple were invited to send samples to the department for analysis. All samples received were excellent. A thorough study of soluble arsenic in Paris green was made; also the liability of arsenical compounds in general to burn foliage. The details of the investigation have been published in Bulletin No. 25 of this Station and in the February number of the Journal of the American Chemical Society for the current year.

SOILS.

From time to time requests for the analysis of soils have been sent to the Station. During the past six months twenty complete mechanical and chemical analyses have been made. The localities where samples have been taken range from Roseworth, Cassia county, to Coeur d'Alene. As these represent several typical Idaho soils, it has been decided to present the results obtained in a bulletin which will be offered for publication during the coming month.

FEEDING STUFF.

At the request of the agriculturist, analysis have been made of corn silage, pea hay, chopped rye, shorts and barley. These analyses will be published in full in a bulletin to be issued by the agriculturist, giving feeding experiments in which these rations were used.

WATERS.

The following table shows the analyses of potabewaters:

Potable Waters.

SENT BY	LOCALITY	Total solids, Parts per million.	Volatile and organic, Parts per million.	Nitrogen as ammoni- um salts, Parts per million.	Nitrogen- albuminoid Parts per million.	Nitrogen as nitrites, Parts per million.	Nitrogen as nitrates, Parts per million.	Chlorine, Parts per million.	REMARKS
Frank Moore.....	Moscow.....	298.00	116.00	trace	.0454	trace	6.32	44.260	Turbid; slightly alkaline.
Dr. Carithers.....	Moscow.....	142.00	44.00	.0120	.1460	none	none	none	Turbid alkaline.
Abeling.....	Moscow.....	184.00	64.00	.2000	.2320	trace (heavy)	.40	8.472	Odor; very bad.
Lewiston Water & Power Co.....	Lewiston.....	246.00	46.00	.0242	.0560	none	trace	12.620	Clear; alkaline.
A. E. Gipson.....	Caldwell.....	578.00	466.00	.1396	.0372	none	11.649		Alkaline; odor unpleasant; contains large amount of organic sediment.

A sample of water was received from the Albion Normal School with request for analysis as the water corroded the pipes of the boilers. The water was found to contain in parts per million 5508, of which 852.41 were magnesium chloride. At the temperature reached in the boiler, magnesium chloride decomposes into magnesia and hydrochloric acid. The latter corrodes the boiler and flues.

A sample of water sent by Mr. B. G. Mullins of Bliss, Idaho, contained in parts per million:

Carbonate of soda (salsoda)	26739.5
Bicarbonate of soda	4295.9
Sulphate of soda (Glauber's salt)	3682.1
Chloride of soda (common salt)	3537.1
Sulphide of soda	61.0

This water shows a remarkable amount of salsoda in solution. It is an alkali water of the extreme type.

SUGAR BEET CULTURE.

Experiments in the culture of sugar beets have been continued. The results of the experiments of the past two years will be published in a bulletin soon to be issued. The cooperative tests carried on have shown that beets of good sugar content and purity can be grown in practically all agricultural parts of the state. On the other hand the yield has been in many instances disappointing. The Station has discontinued the practice of sending out indiscriminately seed but is willing to cooperate with any group of farmers desiring to test a given locality. Such an investigation is now in progress in the Payette valley where eighty farmers have expressed a desire to cooperate. These farmers have received four pounds of seed each with full directions for growing beets by irrigation.

PRUNE ANALYSIS.

A study of the composition of Idaho prunes, grown under different conditions and cured by different processes, was undertaken at the request of the state horticultural society. The plan of the

work and the analytical data have been published in a bulletin issued by the state horticultural society. It is the intention of the department to continue the analysis of fresh and of dried fruit. In the words of the state horticultural inspector, "The object in view is to help the fruit grower to produce the best prunes from a scientific and practical standpoint." In all, forty samples of prunes have been analyzed representing four hundred and eighty individual determinations.

MISCELLANEOUS ANALYSES.

It is not easy to explain to a citizen of the state that the analysis of a soil, for instance, represents work provided for by the Hatch Act, while the expense connected with the analysis of a mineral under the same soil is not provided for by the general government, the state, or the University. Recognizing the need, however, of making the University, of which the Station is a part, of service to all the industries of the state, the department has received for analysis many samples of minerals and other natural products. Some of these samples required only a superficial examination; the conclusions were reported orally and no record kept. In other cases complete quantitative analyses were made. This work was done during vacations and at other times when it could be attended to without interfering with the legitimate work of the Station. It is estimated that two hundred samples have been examined during the time covered by this report.

Very respectfully submitted,
S. AVERY, Chemist.

Department of Entomology.

To The Director:

I have the honor to submit the following report of my work for the two years ending July 1, 1900.

At the beginning of the period I was engaged in an extended trip through the southern part of the state, the object of which was to study the Codlin Moth and San Jose Scale in particular, while at the same time gathering facts that would be of value in my work on other insects.

The following winter I issued a bulletin on the San Jose Scale in Idaho, No. 16 of our series.

The season of 1899 was mainly occupied in studying the life history of insects affecting the apple and strawberry, and in carrying out a series of spraying experiments against the Codlin Moth at Juliaetta. The material accumulated was partly used in a bulletin on the Codlin Moth, while a series of drawings on the Apple Leaf-Roller, the Strawberry Leaf-Roller, and the Strawberry Crown Borer, with notes on their habits, are preserved for completion and publication at a later date.

As early in 1900 as the close of school work permitted my absence, I made a visit to those parts of the state where scale insects other than the San Jose species were known to occur. While the San Jose scale, *aspidiotus pemiciosus*, is by far the most injurious one, there are several others greatly resembling it, at least one of which has done much damage to fruit interests in some parts of the United States. This species, *aspidiotus osticaeformis*, had been found by the horticultural inspector at Mountain Home, and my visit showed the damage by it in one orchard to be rather serious. The towns of Blackfoot and Malad had both been slightly infested by another scale, *aspidiotus aucylus*, hence I visited both places,

finding, however, that in the latter the scale had entirely died out, while in the former only a small number were present. It does not appear at present that a bulletin on these forms of scale would be necessary.

During the two years included in this report, as for two years preceding, I have served as a member of the State Board of Horticultural Inspection. This office is without compensation, and occupies but little of my time. It is advantageous to my work, as I can both learn from the local inspectors and give them the benefits of my experiments and observation.

The collections in my department have greatly increased in the last two years, and much progress has been made in classifying them. The number of named species has been about doubled.

I have attended twelve or fifteen farmers' institutes within the time covered.

Respectfully submitted,

J. M. ALDRICH, Entomologist.

Department of Horticulture.

Pres. J. A. MacLean, Director Experiment Station.

DEAR SIR:—I have the honor to report as follows concerning the work of the Horticultural Department. This is but a brief general statement of the most important lines under investigation, and does not include the very many details concerning the general work of the department.

FRUITS.

Nearly fifteen-hundred fruit trees of our own propagating are now growing in the Station nursery. These are mostly apples of standard varieties, though pears, plums and prunes are included in the list. Some new varieties have been collected from various sources for test purposes. In this direction the Division of Pomology at Washington, D. C., is affording valuable aid in the way of donations of rooted trees and scions. Mr. A. F. Hitt, of Weiser, Idaho, has also made some valuable donations of new fruits.

The new Station orchard was laid out in the spring of 1898, and now contains 140 trees and 70 varieties of pears, apples, quinces, plums and cherries. Other varieties are now being planted. When this orchard has developed to a more mature condition excellent provision will have been attained for the speedy testing of other fruits by means of top grafting and budding, and for the demonstration of methods of pruning and training.

FORESTRY.

The forestry nursery contains about a thousand little trees of walnut, butternut, hickory, pecan, chestnut, buckeye, oak, ash, willow, maple and Kentucky coffee. These are nearly all seedlings raised on the grounds. This stock is intended for use in establishing experimental timber cultures.

PLANT PRUNING.

In the management of young trees and shrubs many opportunities are afforded for testing methods of pruning. Several ideas are being worked out to demonstrate the effects of various systems. Prominent in this line is an experiment to study the effect of root pruning in the establishment of the growth of young fruit and forest trees at the time of transplanting. A practice known as the "Stringfellow system" of root pruning has been on trial here for two years. It is claimed by the advocates of the practice that a more perfect root development can be reproduced on transplanted trees by the removal of the original root growth and causing a new root system to be produced from a short stub root at the base of the stem. This also contemplates a shortening of the top to a single short stem, thereby reducing a small tree to a mere cutting, with the advantage of preserving the rooting habit by a root base. This matter is deemed of sufficient importance to command the attention of a number of well known horticulturists, and for this reason is worthy of some research. Our trials here have shown that almost as great a per cent in the number of plants will survive this treatment as by ordinary methods of pruning for transplanting, but the size of growth attained has not shown as satisfactory results. Observations will be extended over a longer period.

VEGETABLE GARDENING.

Quite a number of experiments have been undertaken in vegetable gardening. A study of the cultural requirements of the tomato, including transplanting, fertilizing, pruning and training, have indicated some advantages. The transplanting of onions, the use of fertilizers, and the effect of humus in the soil in maintaining moisture for the promotion of continuous growth in a dry season, have shown good practical results. These experiments have been applied to various root crops, notably with sugar beets, with most excellent results. Home grown seeds of various species of plants are being produced, selected and tested for a number of

seasons in succession to show what are the advantages of acclimatizing annual plants by continuous reproduction of seeds, in comparison with the same varieties produced under other climatic conditions.

FIELD WORK

In horticulture has resulted beneficially, at least to some extent. The hardiness and adaptability of varieties to certain conditions of climate and cultivation have been recorded. Enough has been done in this line to indicate that a proper amount of field work extended to the horticultural sections of the state would aid fruit growers to systematize their work and to harmonize the fruit-growing interests in general.

Very respectfully,

F. A. HUNTLEY, Horticulturist.

Department of Meteorology.

Pres. James A. MacLean, Director of the Experiment Station.

DEAR SIR:—I herewith submit the following report for the Department of Meteorology for the past two years. During 1898-99 and 1899-00 meteorological records were taken at Moscow at 7:00 a. m. and 7:00 p. m. Readings were taken of the wet and dry bulb thermometers, maximum and minimum thermometers, barometer, the direction and velocity of the wind, condition of weather, precipitation and soil temperatures at depths of 1 inch, 3 inches, 6 inches, 9 inches, 1 foot, 2 feet, 3 feet, 4 feet, 5 feet, 6 feet. Records were kept of the latest killing frosts in the spring and the earliest killing frosts in the autumn.

The work as outlined above will be continued during the coming year. In April, 1900, the department published Bulletin No. 23. This bulletin was divided into two parts, first—Meteorological Records, second—Prediction of Frosts. The records given in the bulletin cover the more important meteorological data and summaries taken as given in the above outlines. The records cover the years 1898 and 1899 and also a five years' summary, 1895-99.

The second part of the bulletin is devoted to a discussion of the prevention of frosts by smudges and the description of electrical apparatus to give warning of a fall of temperature.

This report is accompanied with meteorological records for 1900.

Respectfully submitted,
J. E. BONEBRIGHT, Meteorologist.

MOSCOW, IDAHO, 1900.
JANUARY.

DATE	TEMPERATURE				PRECIPITATION		BAROMETER		WEATHER
	7 a.m.	7 p.m.	max.	min.	Rain	melted snow	7 a.m.	7 p.m.	
1	39	38	42	35	.05	..	27.18	27.23	cloudy
2	38	40	41	34	.20	..	.06	.08	cloudy
3	36	34	40	31	.05	..	.11	.13	cloudy
4	37	34	37	32	...	...	.20	.17	cloudy
5	35	45	46	34	..	...	.09	.15	cloudy
6	40	42	47	38	..	...	.35	.17	cloudy
7	41	40	47	35	.32	..	.22	.15	cloudy
8	35	35	39	28	..	..	.26	.53	cloudy
9	30	34	39	28	.22	...	.52	.34	cloudy
10	35	35	44	31	1.15	..	.40	.44	clear
11	33	34	43	32	1.05	...	.20	.25	cloudy
12	39	40	51	38	..	...	.18	.12	cloudy
13	39	38	40	32	..	.05	.22	.17	cloudy
14	35	33	42	28	..	...	.49	.29	clear
15	28	34	38	28	..	...	.16	.24	cloudy
16	37	36	41	31	.43	..	.27	.37	cloudy
17	40	39	46	36	...	...	.43	.47	clear
18	40	40	51	38	...	...	.26	.26	clear
19	39	35	44	27	...	...	.48	.48	clear
20	30	33	38	29	...	...	.39	.39	fair
21	34	38	40	33	...	...	.40	.24	clear
22	35	40	47	34	...	...	.27	.03	cloudy
23	35	32	36	22	...	.01	.25	.30	cloudy
24	23	31	34	22	..	..	.50	.46	clear
25	25	32	38	18	..	...	.43	.47	clear
26	19	30	35	17	..	...	.43	.53	clear
27	20	23	29	18	..	...	.46	.51	cloudy
28	22	20	32	18	...	...	.49	.51	clear
29	19	28	26	18	..	...	.32	.40	clear
30	32	31	44	21	..	..	.40	.45	clear
	20	32	40	20	..	...	.44	.44	cloudy
Summary	1006	1084	1145	865	3.47	.06	846.71	846.41	
Average	32.3	34.9	36.9	27.9			27.31	27.27	

MOSCOW, IDAHO, 1900.
FEBRUARY.

DATE	TEMPERATURE				PRECIPITATION.		BAROMETRR		WEATHER
	7 a.m.	7 p.m.	max.	min.	Rain	melted snow	7 a. m.	7 p.m.	
1	35	29	41	24	...	0.50	27.43	27.43	clear
2	26	30	37	25	T.	...	.17	.11	fair
3	34	31	42	29	..	...	.16	.17	fair
4	31	28	35	26	...	0.50	.18	.23	cloudy
5	29	30	44	27	...	.20	.19	.00	cloudy
6	30	28	31	19	...	...	26.75	.04	cloudy
7	23	25	28	20	...	.50	27.11	.12	cloudy
8	22	24	28	20	..	...	.08	.04	cloudy
9	26	33	35	25	...	...	.36	.45	cloudy
10	34	35	43	30	...	..	.43	.24	cloudy
11	32	30	36	20	...	...	.29	.29	clear
12	22	30	32	21	...	...	.25	.18	fair
13	24	20	27	9	..	..	.06	.13	clear
14	10	14	21	-2	...	T.	.14	.18	cloudy
15	-1	5	11	-2	...	..	.39	.62	clear
16	2	20	25	2	...	...	.74	.63	clear
17	5	35	28	4	...	..	.49	.36	fair
18	24	32	35	17	...	0.30	.29	.41	cloudy
19	25	35	37	22	...	0.50	.67	.17	cloudy
20	35	38	42	30	...	...	.65	.17	clear
21	36	40	45	27	1.40	...	.15	.15	cloudy
22	30	40	45	30	...	...	.36	.49	clear
23	31	35	47	30	..	..	.53	.46	clear
24	37	43	48	32	..	...	.36	.33	cloudy
25	36	37	43	29	...	..	.40	.22	cloudy
26	33	34	43	32	...	...	.27	.35	clear
27	32	41	47	31	13	..	.41	.30	clear
28	36	40	40	34	...	...	16	30	cloudy
Summary.	741	622	1020	591	1.55	2.50	763.17	767.11	
Means.....	26.4	22	36.6	21.1			27.22	27.22	

MOSCOW, IDAHO, 1900.
MARCH.

DATE	TEMPERATURE				PRECIPITATION		BAROMETER		WEATHER
	7 a.m.	7 p.m.	max.	min.	Rain	melted snow	7 a.m.	7 p.m.	
1	35	40	50	34	...	.	27.32	27.25	clear
2	37	39	50	37	...	...	.14	.15	cloudy
3	40	41	49	35	.61	...	.23	.41	cloudy
4	36	40	45	32	...	..	.43	.41	fair
5	32	34	40	30	...	.11	.01	.13	cloudy
6	33	38	43	32	.30	..	.10	.04	cloudy
7	41	37	50	34	.40	...	26.95	.00	cloudy
8	43	45	50	39	.18	..	27.04	.29	cloudy
9	41	47	54	41	...	...	.35	.31	cloudy
10	45	51	58	44	...	..	.30	.32	fair
11	47	50	61	34	...	..	.23	.35	fair
12	37	48	66	31	...	...	.43	.41	clear
13	38	49	58	35	...	...	.54	.56	clear
14	40	51	62	33	...	...	.60	.49	clear
15	36	55	63	33	..	...	.31	.35	clear
16	38	50	61	34	..	..	.30	.21	clear
17	43	51	60	35	..	..	.17	.15	clear
18	44	49	58	40	..	..	.20	.13	clear
19	40	50	55	39	...	...	.45	.22	clear
20	44	49	62	41	trace	..	.39	.45	clear
21	42	48	45	32	...	..	.08	.16	clear
22	44	40	48	32	.38	.	.20	.27	clear
23	35	43	49	33	...	...	.22	.20	cloudy
24	37	47	56	32	...	..	26.99	.16	clear
25	34	38	43	32	.30	...	26.97	.16	fair
26	33	35	42	29	..	T	27.16	.03	fair
27	33	36	50	32	...	T	.32	.29	cloudy
28	35	40	50	38	...	...	.40	.33	fair
29	38	40	56	41	.20	..	.25	.35	clear
30	42	47	66	33	...	..	.41	.36	fair
31	47	49	68	46	...	...	.32	.33	clear
Summary...	1211	1368	1664	1093	2.37	1.1	844.91	845.26	
Means.....	39.3	44.1	53.8	35.2			27.25	17.29	

MOSCOW, IDAHO, 1900.

APRIL.

DATE	TEMPERATURE				PRECIPITATION		BAROMETER		WEATHER
	7 a.m.	7 p.m.	max.	min.	Rain	melted snow	7 a.m.	7 p.m.	
1	54	52	75	46	...	...	27.20	27.11	clear
2	47	48	50	39	.80	...	.08	.00	cloudy
3	40	43	43	39	.13	...	.04	.22	cloudy
4	42	49	51	38	trace	...	.30	.32	clear
5	43	56	61	42	...	...	.28	.22	clear
6	50	50	65	35	.38	...	.11	.12	fair
7	38	42	45	25	...	trace	.12	.27	cloudy
8	30	36	42	28	...	trace	.27	.27	cloudy
9	33	45	49	33	...	..	.36	.35	fair
10	39	54	60	38	.	..	.38	.34	fair
11	45	55	65	45	...	.	.42	.20	clear
12	52	51	59	39	...	...	.10	.00	fair
13	39	49	50	37	trace	..	.00	.05	cloudy
14	39	42	48	33	40	..	.16	.29	cloudy
15	38	49	55	35	trace	...	.40	.46	fair
16	43	53	62	39	...	..	.46	.36	clear
17	43	51	67	43	..	...	.29	.14	clear
18	51	50	62	43	..	...	.11	.01	cloudy
19	45	47	58	42	.07	..	26.95	26.90	cloudy
20	44	48	57	35	..	.	.98	.99	fair
21	42	46	53	38	...	...	.90	.87	cloudy
22	42	45	53	28	...	...	27.09	27.20	fair
23	38	46	55	31	.	...	.32	.29	clear
24	43	52	59	40	...	..	.22	.02	clear
25	42	35	45	31	..	.03	.03	.01	cloudy
26	32	39	42	32	..	...	.13	.21	clear
27	38	42	49	32	...	...	.33	.39	fair
28	46	50	70	44	..	..	.48	.41	clear
29	57	65	76	45	...	..	.41	.29	clear
30	56	60	73	42	.	..	.28	.20	clear
Summary..	1291	1447	1609	1126	1.76	3 in.	819.20	815.62	
Means.....	43.	48.2	56.6	37.5			27.30	27.16	

MOSCOW, IDAHO, 1900.

MAY.

DATE	TEMPERATURE				PRECIPITATION		BAROMETER		WEATHER
	7 a.m.	7 p.m.	max.	min.	Rain	melted snow	7 a.m.	7 p.m.	
1	54	64	74	49	...	..	27.25	27.23	clear
2	57	65	78	53	...	..	.27	.35	clear
3	59	66	79	52	..	..	.24	.10	cloudy
4	57	60	72	51	.33	...	.10	..	clear
5	54	...	..	..	..	...	...	.19	clear
6	...	57	...	..	..	...	.30	.22	cloudy
7	52	65	68	27	...	..	.39	..	clear
8	59	62	70	55	...	..	..	..	cloudy
9	56	68	65	50	..	...	..	..	cloudy
10	61	58	73	58	...	..	..	..	cloudy
11	59	52	77	48	.08	...	..	..	cloudy
12	39	46	49	38	..	...	..	...	cloudy
13	47	55	48	38	1.02	...	...	..	cloudy
14	50	60	56	41	1.00	...	..	..	fair
15	53	68	63	52	..	...	..	..	fair
16	42	51	72	41	..	..	..	...	clear
17	49	56	74	35	...	...	.56	.37	clear
18	48	60	59	41	...	...	.37	.24	clear
19	51	59	64	40	...	...	.45	.28	clear
20	54	63	64	41	...	...	.30	.31	cloudy
21	52	49	66	41	.25	...	.30	.28	cloudy
22	44	51	56	39	.04	...	.23	.27	fair
23	45	52	56	38	..	...	.21	.00	fair
24	49	61	68	43	trace	..	.14	.21	cloudy
25	39	49	56	43	..	...	.31	.11	cloudy
26	45	48	61	38	.45	...	.24	.32	fair
27	43	50	66	38	..	...	.30	.35	fair
28	44	57	61	41	...	...	.40	.39	fair
29	54	54	56	37	..	...	.33	.39	fair
30	49	64	60	40	..	..	.38	.30	clear
31	45	55	64	41	..	...	.14	.31	clear
Summary	1500	1624	1745	1248	3.27	...	600.18	699.02	
Average	48.3	55.4	65.2	43.0			27.22	27.53	

MOSCOW, IDAHO, 1900.
JUNE.

DATE	TEMPERATURE				PRECIPITATION		BAROMETER		WEATHER
	7 a.m.	7 p.m.	max.	min.	Rain	melted snow	7 a.m.	7 p.m.	
1	56	65	66	40	...	...	27.21	27.13	clear
2	68	60	71	40	...	...	.19	.22	fair
3	62	66	72	46	...	...	.27	.25	clear
4	66	66	74	46	...	...	.29	.26	fair
5	62	58	74	50	...	...	.23	.25	clear
6	52	66	70	48	...	...	.45	.39	clear
7	54	70	67	43	...	...	.41	.12	clear
8	54	68	73	52	...	...	.13	.19	clear
9	49	65	63	35	...	...	.27	.26	clear
10	59	68	67	35	...	...	.13	.17	cloudy
11	61	67	75	42	...	...	.20	.20	fair
12	60	60	74	38	...	...	.26	.11	clear
13	63	77	78	43	...	...	.15	.05	clear
14	66	75	82	56	...	...	.11	.10	cloudy
15	63	56	86	65	.2	...	.22	.17	cloudy
16	51	55	72	57	.05	...	.18	.26	cloudy
17	59	65	64	57	...	...	.34	.38	cloudy
18	59	66	72	65	.03	...	.33	.36	cloudy
19	66	72	73	65	...	...	.31	.29	clear
20	66	72	88	66	...	...	.26	.06	clear
21	60	70	82	60	...	...	.29	.21	clear
22	62	78	82	60	...	...	.27	.21	clear
23	71	76	81	63	.04	...	.24	.12	clear
24	69	74	84	62	...	...	.21	.03	cloudy
25	59	70	74	64	.15	...	.24	.23	cloudy
26	61	79	72	51	...	...	.37	.32	clear
27	63	74	72	60	...	...	.31	.16	clear
28	65	69	81	56	...	...	.13	.22	clear
29	57	63	81	55	...	...	.17	.13	clear
30	49	57	66	49	...	...	.17	.21	cloudy
Summary..	1812	1936	2186	1527	.47		817.57	816.06	
Means.....	66.5	64.5	72.3	50.9			27.25	27.29	

MOSCOW, IDAHO, 1900.
JULY.

DATE	TEMPERATURE				PRECIPITATION		BAROMETER		WEATHER
	7 a.m.	7 p.m.	max.	min.	Rain	melted snow	7 a.m.	7 p.m.	
1	52	65	64	47	...	..	27.21	27.16	clear
2	51	68	67	46	...	...	.17	.19	clear
3	57	71	70	52	.10	...	.33	.18	cloudy
4	61	64	69	55	.25	..	.17	.14	cloudy
5	54	61	69	54	...	...	.19	.20	clear
6	57	67	66	49	..	..	.27	.32	cloudy
7	56	75	69	51	..	...	.38	.20	clear
8	65	76	80	64	...	..	.14	.21	clear
9	57	78	78	50	...	...	.31	.20	clear
10	65	86	90	67	...	..	.16	.24	clear
11	67	76	74	52	...	..	.23	.19	fair
12	55	78	70	46	...	...	.39	.33	clear
13	57	72	69	47	...	...	.26	.18	clear
14	62	75	78	50	...	...	.21	.09	clear
15	62	81	85	58	..	...	.12	.14	clear
16	68	84	86	60	..	..	.19	.08	clear
17	63	73	89	60	...	..	.24	.29	clear
18	60	77	77	60	..	..	.42	.35	clear
19	65	83	80	60	...	...	.30	.25	clear
20	72	90	81	68	..	..	.29	.64	clear
21	72	90	93	63	...	..	.15	.14	clear
22	71	88	93	65	...	..	.22	.19	clear
23	71	90	93	61	...	...	.31	.23	clear
24	71	92	93	66	...	..	.24	.15	clear
25	66	77	98	71	...	...	.18	.19	clear
26	59	73	83	64	..	..	.26	.14	cloudy
27	60	79	83	63	...	...	.33	.30	clear
28	69	83	83	58	...	...	.34	.32	cloudy
29	75	90	86	65	..	..	.33	.21	clear
30	74	90	91	65	...	..	.22	.29	clear
31	75	89	92	65	...	...	.23	.21	cloudy
Summary...	1970	2441	2449	1754	.35	..	844.69	843.35	
Means.....	63.5	78.7	79.0	96.5			27.24	27.20	

MOSCOW, IDAHO, 1900.
AUGUST.

DATE	TEMPERATURE				PRECIPITATION		BAROMETER		WEATHER
	7 a.m.	7 p.m.	max.	min.	Rain	melted snow	7 a.m.	7 p.m.	
1	69	80	92	61	...	..	27.62	27.55	clear
2	55	67	93	60	...	..	.58	.50	clear
3	52	70	91	49	..	..	.49	.32	clear
4	55	70	82	49	...	...	.31	.22	cloudy
	65	68	80	50	..	..	.23	.20	cloudy
6	51	63	72	50	..	...	.34	.31	clear
7	51	69	70	50	...	..	.36	.26	cloudy
8	53	50	74	50	trace	..	.22	.28	cloudy
9	49	60	62	50	..	...	.24	.49	clear
10	54	65	69	50	...	..	.30	.25	cloudy
11	54	70	68	47	.05	...	.31	.38	clear
12	56	71	73	52	..	...	.37	.23	clear
13	53	78	78	54	..	...	.24	.22	clear
14	55	80	83	56	..	...	.29	.22	clear
15	60	75	85	60	..	...	.30	.18	cloudy
16	54	60	82	60	.43	..	.29	.29	clear
17	47	66	67	50	...	...	.28	.29	cloudy
18	51	71	70	49	...	...	..	..	cloudy
19	63	79	75	51	...	...	..	..	cloudy
20	60	79	85	60	...	...	..	..	cloudy
21	58	68	85	61	10	...	..	..	cloudy
22	53	60	70	60	trace	...	..	..	cloudy
23	58	55	70	59	.37	...	..	..	cloudy
24	55	62	59	59	...	..	..	..	cloudy
25	59	61	65	58	.26	...	..	..	clear
26	50	60	65	48	..	...	..	..	clear
27	50	70	66	47	..	...	..	..	cloudy
28	52	58	77	54	trace	...	..	..	cloudy
29	49	70	72	54	..	...	..	..	cloudy
30	52	65	75	54	..	..	..	..	clear
31	50	66	68	53	..	...	..	..	clear
Summary	1694	2086	2323	1665	.78	...	464.77	464.19	
Average	54.6	67.2	78.2	53.7			27.22	27.30	

MOSCOW, IDAHO, 1900.
SEPTEMBER.

DATE	TEMPERATURE				PRECIPITATION.		BAROMETER		WEATHER
	7 a.m.	7 p.m.	max.	min.	Rain	melted snow	7 a.m.	7 p.m.	
1	48	66	68	53	...	...	.....	.....	clear
2	53	70	70	52	...	...	.....	.....	clear
3	53	75	77	59	..	...	.....	.....	clear
4	53	80	82	59	...	...	.....	.....	clear
5	50	60	83	67	...	...	.....	.....	clear
6	56	70	69	57	.03	...	.....	.....	fair
7	54	60	76	57	..	...	.....	.....	fair
8	50	62	78	57	...	...	.....	.....	clear
9	53	63	77	57	...	...	.....	.....	clear
10	44	72	67	50	.50	..	.....	.....	cloudy
11	50	71	75	53	...	...	.....	.....	clear
12	51	76	79	55	...	...	.....	.....	cloudy
13	55	60	83	59	..	..	.....	.....	cloudy
14	41	55	83	51	...	...	.....	.....	cloudy
15	50	60	83	51	...	..	.....	.....	cloudy
16	46	45	83	52	...	...	.....	.....	cloudy
17	45	45	83	52	..	..	.....	.....	clear
18	45	54	56	50	...	...	.....	.....	clear
19	46	60	62	51	...	..	.....	.....	clear
20	45	55	71	51	...	...	.....	.....	clear
21	47	56	71	51	..	...	.....	.....	cloudy
22	50	50	70	50	...	...	.....	.....	cloudy
23	40	42	75	50	..	..	.....	.....	cloudy
24	43	40	70	50	..	...	.....	.....	cloudy
25	...	...	...	...	.26	..	.....	.....	cloudy
26	..	..	..	..	...	...	.....	.....	cloudy
27	...	..	...	..	...	..	.....	.....	cloudy
28	60	65	67	45	...	..	27.44	27.44	clear
29	50	64	65	45	...	..	.19	.14	cloudy
30	44	46	55	45	...	...	26.90	.10	cloudy
Summary.	1322	1572	1978	1429	.79				
Means.....	48.9	57.8	73.2	52.9					

MOSCOW, IDAHO, 1900.
OCTOBER.

DATE	TEMPERATURE				PRECIPITATION		BAROMETER		WEATHER
	7 a.m.	7 p.m.	max.	min.	Rain	melted snow	7 a.m.	7 p.m.	
1	48	61	...	..	..	..	26.94	27.41	
2	...	..	..	..	..	...	27.20	26.93	
3	...	..	..	..	.40	...	26.94	.96	cloudy
4	..	...	...	..	...	..	27.53	27.16	cloudy
5	..	...	53	43	.50	...	.33	.12	cloudy
6	...	...	...	...	..	..	.17	.23	
7	..	...	..	...	..	...	.23	.15	
8	..	..	..	...	...	..	.05	.06	
9	..	...	64	44	..	...	.10	.07	clear
10	50	50	60	41	.14	..	.21	.32	cloudy
11	41	54	55	38	...	..	.06	.39	clear
12	42	52	61	39	...	...	.32	.30	clear
13	50	58	62	42	..	...	.20	.04	clear
14	54	60	67	48	...	...	26.95	.11	cloudy
15	48	53	64	44	...	...	.13	26.69	clear
16	51	61	70	47	..	..	27.08	27.11	clear
17	55	61	70	50	..	..	.07	26.92	clear
18	60	42	70	54	.20	..	.05	27.00	cloudy
19	43	50	..	..	.22	...	.17	.21	cloudy
20	52	45	65	45	.28	..	.18	.26	cloudy
21	51	56	55	44	.05	..	.07	.12	cloudy
22	45	45	60	45	.08	..	.15	.10	cloudy
23	35	42	51	33	.10	...	.11	.09	cloudy
24	38	40	50	35	...	..	.09	.05	clear
25	40	40	48	33	.30	...	.17	.16	cloudy
26	40	45	44	34	..	...	.17	.02	cloudy
27	30	40	42	36	...	...	.09	.22	clear
28	40	38	38	35	.73	...	...	...	cloudy
29	38	39	49	35	.05	..	...	..	cloudy
30	39	41	44	32	.01	..	..	...	cloudy
31	41	40	43	22	.18	...	...	...	cloudy
Summary...	1031	1113	1285	916	3.24	...	731.76	732.30	
Means.....	44.8	48.4	55.6	39.1			27.1	27.12	

MOSCOW, IDAHO, 1900.
NOVEMBER.

DATE	TEMPERATURE				PRECIPITATION.		BAROMETRR		WBATHER
	7 a.m.	7 p.m.	max.	min.	Rain	melted SNOW	7 a. m.	7 p.m.	
1	35	42	47	33	...	...	27.26	27.18	fair
2	46	41	49	34	.75	...	.16	.31	cloudy
3	41	42	47	38	.06	...	.38	.40	cloudy
4	40	41	44	34	...	...	.43	.40	clear
5	39	41	50	33	...	...	.35	.40	cloudy
6	36	42	44	32	.02	...	.39	.36	fair
7	41	36	50	30	.01	...	.24	.26	fair
8	36	43	43	32	.02	...	.40	.30	cloudy
9	41	45	45	32	...	...	.59	.66	clear
10	46	43	48	32	...	..	.42	.43	clear
11	42	39	52	31	...	...	.44	.40	clear
12	40	46	51	32	...	...	.46	.36	clear
13	36	47	55	31	..	..	.39	.22	clear
14	32	41	53	27	...	...	.18	.11	cloudy
15	41	41	45	30	.03	..	.12	26.80	cloudy
16	41	43	45	30	.03	...	26.79	.75	cloudy
17	41	39	45	33	.15	..	.71	.63	cloudy
18	32	30	47	28	.30	...	.68	.64	cloudy
19	25	29	32	23	...	..	.70	.72	cloudy
20	20	08	32	8	...	...	.64	.68	cloudy
21	05	08	25	-5	..	...	.79	.78	cloudy
22	15	22	23	2	...	...	.90	.96	clear
23	32	35	35	17	..	..	27.05	27.23	fair
24	33	39	39	22	..	...	.26	.17	fair
25	37	48	41	30	.34	..	.12	.11	cloudy
26	37	37	42	33	.05	...	.17	.29	cloudy
27	32	37	43	29	...	..	.36	.33	fair
28	31	38	40	30	...	...	.38	.28	clear
29	55	38	42	31	...	..	.40	.25	fair
30	41	44	45	35	.31	...	.27	.27	fair
Summary.	1069	1125	1299	827	2.07		815.53	814.66	
Means.....	35.6	37.4	43.3	27.9			27.18	27.15	

MOSCOW, IDAHO, 1900.
DECEMBER.

DATE	TEMPERATURE				PRECIPITATION		BAROMETER		WEATHER
	7 a.m.	7 p.m.	max.	min.	Rain	melted snow	7 a.m.	7 p.m.	
1	36	42	47	34	.12	.	27.51	27.70	cloudy
2	35	37	47	32	.59	...	.54	.51	cloudy
3	39	42	43	33	.11	...	.50	.46	cloudy
4	41	43	43	36	.05	..	.48	.53	cloudy
5	43	47	44	38	...	...	.61	.60	clear
6	40	50	50	40	..	..	.60	.55	clear
7	50	45	52	36	..	...	.48	.44	clear
8	48	49	51	32	...	..	.50	.55	cloudy
9	39	36	50	28	.03	...	.43	.48	cloudy
10	33	32	36	30	.03	..	.50	.50	cloudy
11	32	33	34	30	...	..	.43	.46	fair
12	33	38	38	28	...	...	.28	.18	cloudy
13	35	36	40	30	.07	...	.30	.24	cloudy
14	40	34	43	33	...	...	.30	26.90	cloudy
15	39	39	45	34	.42	...	.04	27.30	cloudy
16	41	41	44	34	.48	..	.25	.11	fair
17	32	35	46	30	.10	..	.00	.32	cloudy
18	33	39	38	17	.03	..	.32	.47	cloudy
19	39	37	44	30	...	...	.50	.40	cloudy
20	35	47	40	32	.88	..	.46	26.80	cloudy
21	35	35	40	30	.40	..	.27	27.25	cloudy
22	27	33	39	24	...	.	.27	.50	fair
23	30	33	36	26	...	...	.14	.27	cloudy
24	34	35	34	30	...	.97	.16	.27	cloudy
25	35	36	39	28	...	...	.01	.05	cloudy
26	33	33	38	30	..	.14	.07	.03	cloudy
27	29	30	34	21	...	...	.02	.02	cloudy
28	24	29	30	22	...	...	.03	.17	clear
29	27	29	32	22	..	..	.04	.01	cloudy
30	20	18	27	17	..	.1	.04	.04	cloudy
31	8	16	24	7	...	.1	.02	.05	fair
Summary...	1065	1124	1248	894	3.31	2.3	845.84	846.19	
Means.....	34.7	36.2	40.2	25.6			27.28	27.29	

JULY 1, 1899-JUNE 30, 1900.

RECEIPTS.

To Hatch Installment for 1899-1900.....\$15,000.00

\$15,000.00

DISBURSEMENTS.

(As per Government Report, approved.)

By Salaries.....	\$ 6,208.33
“ Labor.....	3,461.39
“ Publications.....	537.82
“ Postage and Stationery.....	113.10
“ Freight and Express.....	203.90
“ Heat, Light and Water.....	497.44
“ Chemical Supplies.....	150.09
“ Seeds, Plants and Sundry Supplies.....	406.87
“ Fertilizers	15.20
“ Feeding Stuffs.....	43.05
“ Library.....	114.00
“ Tools, Implements and Machinery.....	279.39
“ Furniture and Fixtures.....	204.00
“ Scientific Apparatus.....	230.00
“ Live Stock.....	1,203.57
“ Traveling Expenses.....	391.25
“ Contingent Expenses.....	190.60
“ Building and Repairs.....	750.00

Total.....

\$15,000.00