DECEMBER 16, 1874.

The Board assembled at 9 o'clock.

Prof. Webb's request for sundry needs in the Engineering Department, was referred to the Regent and Business Agent, with power to act, and an appropriation of \$20 was granted.

Mr. D. Gardner made a report in regard to certain bills to the amount of \$140 72, due Mr. Peacock, of Champaign; in accordance with his recommendation the bill was audited and ordered to be paid.

The request of Judge Cunningham, for exchange of securities, not granted.

The account of Judge Cunningham for services, was referred to Mr. Gardner to settle.

The report of Head Farmer Lawrence was read and accepted. He was authorized to sell certain blooded stock recommended in his report.

TO EMORY COBB. ESQ., President of the Board of Trustees of the Illinois Industrial University:

SIR-I herewith present a statement of the operations of the Agricultural Department for the nine months ending November 30, 1874. In doing this I find it necessary to pass over a report made Sept. 1, as at that time the crops were in such a state that it was necessary to make estimates, rather than to state facts, which could not be ascertained, and go back to the annual report of March 1.

It may be well, in passing, to state where the difference is which makes this statement of profits

It has be well, in passing, to state where the unterence is which makes this statement of prome vary from the estimated profits of the last report. In the report of September I estimated 68 steers to be worth \$4,000. To make this amount, I al-lowed that 35 head then ready for market would bring $6\frac{1}{4}$ cents a pound in Chicago. The second week in September the cattle were ready and the price satisfactory, but as our county fair was in operation, I could not leave. The week after, desiring to go to the State fair, the cattle were ne-glected, and the next week the market broke and has not yet recovered. I sold, October 2, for 6 cents. This accounts for \$110 of the difference. The remainder, \$127 44 will have to be accounted

cents. This accounts for \$110 of the difference. The remainder, \$127 44 will have to be accounted for by the crop of corn not coming up to my expectations. I am able to report a balance of profits on every crop raised, and on every operation except a loss of about \$80 in grass seed sown, all of which was lost. This loss does not show itself in this report, but will have more of an influence on next year. For an account of the expenses of the year, see paper marked "B." The item of "Cost of la-bor and board, \$2,445 84." seems large, but nearly half that amount comes back in "Credits from other departments." For statements in detail of expenses, see vouchers on file in the Business Accept's office and numbered from 1 to inclusive. sent's office and numbered from 1 to inclusive. For an account of sales and credits see paper marked "B." The credit from other departments Agent's office and numbered from 1 to

has not all been audited by the Board, only that made up to Sept. 1. The items to make this amount will be laid before you.

amount will be laid before you. In the report of September 1, permanent improvements were accounted for to the amount of \$568 34. At that time a voucher for \$59 80 was overlooked, this was for lumber. It is now added. For a description of improvements since added see paper marked "C." All the improvements have been made on the Experimental Farm. It will be seen that \$75 is allowed for seeding pas-ture. Ordinarily this should come under the head of current expenses, but as there was no grass on the Experimental Farm, from which a profit could be made this year, a fair statement of the the year's profit could not be made by leaving this out. It must be classed the same as the fenc-time. The pasture was seeded in the spring to timothy and clover, which failed, in September timothy and rye were sown.

Nine hundred dollars is charged for care and keeping of the blooded stock. This is in accor-dance with an agreement made three years ago. That this stock was to be kept and the wages of one man allowed to care for them, and the department was to have credit for what they con-sumed, acc. \$12 was paid for advertising the Ayrshires for sale, and about \$6 for halters and bull rings. The receipts from the stock has been as follows:

From sale of Devon calf	\$40 00
" Short-horn cow	200 00
'' Avrshires	250 00
From premiums	66 00
" Bull service, cash	36 50
······································	150 00
Total	\$742 50

Of this amount \$59250 has been received and paid over, but is charged back to the department in the account shown on the paper marked "A" and the amount of \$150 is shown in the inventory on one side and charged back with the other.

The paper marked "D" shows the cost and value of the different crops.

The paper marked "D" shows the cost and value of the different crops. The experiments directed by Mr. Flagg were all undertaken and carried out as near as the sea-son would admit, together with a view suggested by myself, all of which will be shown in the re-port of Mr. Johnson, Superintendent of Experiments. I would call your attention to the fact that there has been no provisions made for giving the Agricultural Department credit for the time of the Head Farmer spent in superintending the field work of the experiments from March to Sep-tember. Whether or not, a part of the salary paid the Head Farmer should be charged over to ex-periments, Whot my province to decide. Had the season been such that we might have accom-plished more, I could have with a better grace asked that this might be done. Considerable time was also spent in directing and assisting in the work of grading the grounds about the New Uni-versity Building, for which no charge has been made. At the close of last year there was found a balance in favor of the Stock Farm of \$897 85, after paying all expenses and for all improvements. Taking this into the account and charging back to the farm the permanent improvements made the present year, gives a balance of \$1,562 73 to be carried to next year. As will be seen from the following statement there is also a surplus of \$1,340 in the present inventory above that of March 1st. Total expenses including improvements.

Total expenses including improvements	\$7,018 57	
Cash and Credit by blooded stock	742 50	
Balance found (to go to next year)	1,56278	
	\$9,323 80	
Balance from last year		\$897 85
Cash receipts and credits		7,525 96
Keeping blooded stock		900'00

\$9.323.80

REVIEW OF THE SEASON.

REVIEW OF THE SEASON. I took charge of the work on the Experimental Farm, by direction of the Board of Trustees March 16th. At this time the extra help needed was not engaged, and it was near the close of the month before the whole force was in working order. I had fears that we would be late with our work but spring proved so favorable that the lost time was soon gained. I think it a matter of yeast importance to always be in season with all farm work, "drive the work" and not let the work drive you, is a good motto. We commenced planting corn May let and commenced haying June 18th and finished before any of the crop was too ripe. The rye, oats and wheat were cut early, thus giving the best quality of straw. The chinch bug injured some of the corn on the Experi-mental farm but none on the stock farm. I think the stocking of farms heavily, and giving extile and horses the range of the whole farm in the fall and winter, will be found the best preventive of depredations of this pest. They will be eaten out of "house and home" and trodden to death in the bargain. In the four years that I have had charge of this farm chinch bugs have scarcely made a show, which I attribute to the fact that they have been kept in check by keeping the farm well stocked. Taking all things into the account. I am gratified with the result of our labors during the part.

stocked. Taking all things into the account, I am gratified with the result of our labors during the past year. The land is in the best possible condition for the next crop. All the manure on both farms has been hauled out, and a large amount has been hauled from the city. More fall plowing has been done than formerly, and we have all the experience of former years, in failures as well as success, as reserve capital, to use as the case may demand. In closing, I would express my appreciation of the interest taken by yourself and other mem-bers of the Board of Trustees in the welfare of the Agricultural Department. All of which is respectfully submitted.

E. L. LAWRENCE, Head Farmer Illinois Industrial University.

P. S.—Since the date of this report two Short-horn heifers have been purchased for \$285. This purchase was made more as an investment from which to realize, than with a view of having something to show as a representative of the breed. The latter is still needed, and the fund set apart for that purpose is yet sufficient to purchase something more desirable. A yearling Ayrshire bull has been sold for \$40, and a Jersey calf (bull) for \$50.

INVENTORY OF SALABLE PROPERTY.

		(
Dec. 1, 1874	33 steers, 35,530 lbs., 4c	\$1,421	20
•	46 hogs, 7,630 lbs., 6c	457	7 80
	30 shoats, \$5	150) 00 (
	9 breeding sows, \$15	135	5 00
	28 pigs, \$1,50	• 42	2 00
	1 boar	15	5 OO
	1,100 bushels corn, 50c	550) 00 (
	400 shocks corn, 75c	300) 00 (
	60 · · · · · 50c	30) 00 (
	60 tons of hay, \$11	660) 00
	400 bushels of wheat, 80c	320) 00 (
	20 tons of straw, \$ 4	80) 00 (
	3 tons of bran, \$17	51	00
	3 tons of beets, \$8	24	£ 00 £
	¹ / ₃ acre of parsnips	30) 00
	75 bushels of potatoes	75	; 00
	1 cow	60) 00
	1 young colt	40) 00
	10 acres of rye	30	00 (
	100 bushels of oats, 45c	45	, 0 0
	10 cider barrels	10	00 (
	1 pair of colts	300	00 (
	Accounts	410	26

1 Hereford bull	
1 Jersev bull	
1 Hereford cow.	
1 Devon cow	
1 Devon calf	
1 Jersey cow	
1 Jersey heifer	
1 Ayrshire bull	
2 calves, Jersey and Ayrshire	
	\$6,

Table "B."

AGRICULTURAL DEPARTMENT,

In Acct. with Illinois Industrial University.

1874	Dr.		
Dec. 1	To balance (inventory of March 1874.)	$\begin{array}{c} \$3,896\ 26\\ 1,588\ 30\\ 284\ 95\\ 137\ 24\\ 2,445\ 84\\ 737\ 00\\ 12\ 00\\ 62\ 00\\ 87\ 44\\ 49\ 30\\ 12\ 94\\ 106\ 17\\ 12\ 15\\ 57\ 47\ 95\\ 98\ 77\\ 1,052\ 75\\ 78\ 00\\ 592\ 50\\ 150\ 00\\ 900\ 00\\ 23\ 70\\ \end{array}$	
	Cr.	\$11,735 33	
- - - -	By sales of fat cattle	\$2,734 12 \$14 469 45	\$4,033 25 15 75 85 00 257 66 52 35 581 30 490 00 76 00 36 51,218 14 807 24 900 00 13 36 5,236 26
	T I I I I I I I I I I I I I I I I I I I	waa, 100 10	, 100 10

"C."-PERMANENT IMPROVEMENTS.

Toron have for home	A 17	~~
Lumber for oarn.	\$41	00
Nalls	4	50
Work-1 door, 4 bins and 500 feet sealing	20	00
Four days ditching, two men and team	17	00
Making road	. 9	00
Two days gathering stone	6	00
Seeding pasture.	75	00
In last report	568	34
Added lumber voucher	59	80
Total	\$807	24

"D."-STATEMENT OF COST AND VALUE OF FARM CROPS.

		1	
	BEEF CATTLE.		
то	inventory of March 1, 1874	\$2,393 26 1,588 30	
"	940 bu. corn, 40 cents	376 00	
44	7 months pasture	493 50	
	10 tons hay (old crop)	60 00	
	labor (estimated)'	20 00	
"	freight	93 60	
	Balance	379 79	
By	cash sales		\$ 4,033 25-
4.4	inventory December 1		1,421 20
	•	\$5,454 45	\$5,454 45
	CORN.		
то	inventory March 1	\$ 220 00	
••	purchases	913 09	
•••	cost of 115 acres in crib	805 00	
	Datance	100 00	
Bу	corn on hand		\$880 00
• •	940 bn, fed to steers, 40 cents		200 18
	amount fed teams.		320 00
	" hogs		656 91
	velue of stalk field	••••••	149 00
	value of stark neru		
	95 ACIDITE DWE	\$2,688 09	\$2,688 09
	20 ACRES NIL.		
To	harvesting, \$3.	\$75 00	
	stacking, \$1	25 00	
" "	marketing	8 00	
	Balance	122 48	
Bv	330 bus. sold		3 257 68
.".	45 bus. sowed, 78c		35 10
	15 bus. ground and fed, 78c	·····	11 70
	value of straw		40.00
		\$344 48	\$344 48
	30 ACRES SPRING WHEAT.		
То	seed, 45 bus., \$1	\$ 45 00	
	putting in crop	· 60 00	
	narvesung	75 00 80 00	
٢,	threshing 400 bus., 10c.	40 00	
	Profit	95 00	
Bv	400 bus, on hand, 80c.		\$320.00
-,,	value of straw		25 00
		\$345.00	3534 5 00

16 ACRES DATS		
To cost	\$136 00 20 75	
By 100 bus. on hand '' 114 bus. sold '' 86 bus. fed '' value of straw		\$45 00 52 35 34 40 25 00
120 ACRES MEADOW.	\$156 75	\$156 75
To hay as per inventory March 1 '' cost of new crop Profit	\$179 00 409 00 759 44	
By amount on hand		\$660 00 467 44 220 00
HOG CROP.	\$1,347 44	\$1,347 44
To inventory of March 1 '' corn	\$412 00 656 91 20 00 293 34	
By cash sales		\$582 45 799 80
•	\$1,382 25	\$1,382 25
120 acres pasture	$\begin{array}{c} \$528 & 00\\ 406 & 04\\ 179 & 28\\ 100 & 00\\ 379 & 79\\ 750 & 00\\ 122 & 48\\ 95 & 00\\ 20 & 75\\ 759 & 44\\ 293 & 34\\ \end{array}$	
Balance found, see statement "A" Salary of Head Farmer		\$3,634 12 900 00
	\$3,634 12	\$3,634 12

The representative of the firm of Crane, Breed & Co., presented his claim for balance of payment on heating apparatus, the time for testing having expired Dec. 22, 1874. After enquiring into the working qualities of the apparatus, and evidence having been presented of the full satisfactory working of same, it was voted that the retained 20 per cent. on contract amounting to \$3,465 be paid, the apparatus be accepted, and warrant be drawn on State Treasurer for the amount.

Mr. B. F. Johnson in charge of agricultural experiments made his report of the experiments of last year, and the plan for continuing and enlarging the same for next year.

TO EMERY COBB, ESQ., President Board of Trustees, Illinois Industrial University :

- 4th. Testing comparative value of No. of starks in a fill.
 5th. Root pruning the corn crop, either by spade or plow.
 6th. Common and extra collection.
 7th. Different widths of rows in drills.
 9th. Planting varieties of potatoes.

IN DEALERY CORE, ESQ., Freshence Dours of Trustees, Juniois Industrial University: Sim—The undersigned having been put in charge of Farm Experiments, Sept. 1, 1874, found the following programme laid down by Mr. Flagg: 1st. To ascertain the comparative value of Plats, this being the fourth year. by planting corn on 72 plats, 2x4 rods each without manure; with a future view of testing fertilizers. 2nd, Planting 40 varieties of corn. 3rd. Testing the value of different depths of plowing and of no plowing. 4th. Testing comparative value of No. of stalks in a hill. 5th. Root pruning the corn cron. either by smale or plow

In addition to these, Mr. Head Farmer Lawrence had made the following experiments: Ist. With Spring wheat. In the preparation of the seed, one-tenth of an acre for each test, the seed being prepared in the following manner: a, soaked in a strong solution of blue vitriol (sulphate of copper); b, seed moistened with water, and then rolled in plaster of Paris; c, soaked in a solution of common potash; d, soaked in a solution of common soda; e, soaked in manure water from barn yard; f, one barrel leached ashes applied to the land; g, no preparation in any way; h, one-half a bushel of salt sown broad cast on the plat; i, seed sown at the rate of one bushel to the acre, the other plats having been sown at the rate of one and one-half bushels. 2d. To try how much corn could be grown on an acre with cxtra preparation and cultivation. The above embrace the experiment ordered by Mr. Flagg and undertaken by Mr. Lawrence. I have, with the advice and assistance of Mr. Lawrence, put the following experiments in train : lst. Sowing six varieties of winter wheat; one variety of winter rye, and one of rye and wheat mixed (metis). 2d. To label of salt box between the rate of the salt is one variety of the solution one of rye and wheat mixed (metis).

mixed (metrs). 2d. Fall planting of potatoes. 3d. Experiments in feeding stock. a, Feeding breeding sows and keeping an account of the food and the weight, both of the original stock and the increase, so as to ascertain the cost in corn from beginning to ending; b, to test the relative value of the fattening qualities of the different breeds; c, to test the relative value, on young cattle, of ear corn and wheat bran, fed with wheat and oat straw.

In addition to these experiments, something has been one in the way of fall plowing, and

In addition to these experiments, something has been cone in the way of fall plowing, and hauling manure from town to prepare for the coming spring. The results of these different untertakings, so far as ascertained, have been as follows: In regard to the corn experiments of Mr. Flagg, the excessive drought and chinch bugs rendered them almost valueless. Notwithstanding, it is thought best to report in detail, what the results were. For outcome of experiments with 72 plats, see table marked "A," attached to this report. As for Experiment No. 2, "Varieties of Corn," from causes stated, no conclusion could be drawn as to report of the set of t

As for Experiment No. 2, varieties of corn, from causes stated, no conclusion could be drawn as to value of different varieties. Experiment No. 3. The comparative results of different depths of plowing, 100 being the unit, was found to affect the yield of corn per acre, as follows:

Not ploy	ve	d	
Plowed	3	inche	s
4.4	5	64	
	9	• •	
" "	9	• •	and subsoiled to 16 inches170

Experiments Nos. 5 and 6, relating to number of stalks in a hill and to root-pruning, might mis-lead if reported, on account of the disturbing causes above referred to. The result of Experiment No. 6, as to comparative value of common and extra cultivation of the corn crop were as follows:

 $\frac{1}{2}$ half acre cultivated 5 times, gave 715 lbs; $\frac{1}{2}$ half acre cultivated 3 times, gave 562 lbs; the results being 22 per cent. in favor of extra cultivation. The outcome of experiments No. 7 and No. 8 may be classed with Nos. 4 and 5. For result of 9th experiment viz: planting varieties of potatoes, see table *B* attached to and

made a part of this report.

made a part of this report. Mr. Lawrence's experiments in preparing seed for sowing resulted as follows: At harvest the appearance of the plats were so nearly alike that three only were reserved and threshed specially. Plat F, "ashes applied," yielded at the rate of 10 50-100 bushels per acre. Plat G, "no preparation," gave 10 33-100 bushels per acre. Plat I "seed sown at rate of 1 bushel per acre," gave yield of 9 33-100 bushels.

gave 10 33-100 bushels. Plat I "seed sown at rate of 1 bushel per acre," gave yield of 9 33-100 bushels. In regard to experiment No. 2, as to "how much corn can be grown on an acre with extra preparation and cultivation," the following notes were made at the time by Mr. Lawrence. Previously let it be stated, however, that the land was tile drained, and heavily manured from the stable the previous winter: April 30, plowed 6 inches and harrowed; May 1, planted ½ bu. of Thomas corn in drills, north and south, four feet apart; May 9, harrowed; May 1, planted ½ bu. of Thomas corn in drills, north and south, four feet apart; May 9, harrowed; May 1, planted ½ bu. of Thomas corn in drills, north and south, four feet apart; May 9, harrowed; May 1, harrowed again; May 25, cultivated; May 27, hoed; June 5, thinned to from 8 to 12 inches in row, corn stands 1 foot high; June 17, hoed, corn stands 3 feet high; June 27, crows average 190 stalks to 166 feet; July 1, corn stands from 6½ to 7 feet, the uppermost blades and portions of the tassels are wilting and turning white; July 26, cultivated and laid bye, heat and drough excessive, and prospects discouraging; September 1, fully ripe and dry; September 20, gathered and found yield to be 41 bushels. Up to June 25, the prospect could not have been better. Though not too thickly seeded for a summer like that of 1874, one-half the stand would have yielded considerably more. Coming down to the operation of the undersigned, the experiments in sowing wheat and ry were as follows: Six varieties of winter wheat, consisting of Senece or Clowsere, Drehl and Sapahannech, (white) and Treadwell and Fultz, (red) having been obtained from New York, together with one variety of swamp or Mediternaean, (red) from Indiana, and donated by Mr. James M. Parker, of Champaign, were one-half bushel each, sown on three-tents of an acre of corn stubble, which had been cleaned off and thoroughly harrowed, but not plowed. It was sown in drills September 21st, immediately thereafter rolled, and notwith-s

ingly at this date.

ingly at this date. October 10—Experiments were made to arrest the ravages of this insect, by means of Paris Green, the with the expectation that its effects would show themselves during spring and sum-mer growth, than that they would be immediately apparant. The one-half bushel of rye sown was that known as White Rye, and obtained from abroad, partly for the purpose of securing a change of seed; and the sowing of the bushel of half and half, each of rye and white wheat, the gift of Mr. John Busey, of Champaign, was undertaken to show whether or not, as it has been frequently claimed, that under certain circumstances, both wheat and rye do better in each other's company, than either separately. The experiment in "fall planting potatoes," was begun Nov. 17, on a few rods square only, the Early Rose and Peach Rlow being the varieties planted. This experiment was undertaken for the purpose of testing, under our climate and on our soils, a method of cultivation much in use in continental Europe, and from which the best results have been obtained. As to Experiment No. 3, "with breeding sows," no satisfactory result is expected to be ob-tained within the year.

tained within the year.

One of the feeding experiments has resulted as follows: Two Poland Chinas and two Berk-shires, a sow and farrow of each, were put into separate pens Oct. 1, 1874:

Weight October 1 of Polands	
" Berkshires	
'' December 1 of Polands	
" Berkshires.	
Corn consumed in 61 days:	
Poland Chinas	
Berkshires.	
Polands on 8 13-100 bushels made Berkshires '' 3 89-100 '' ''	
Polands 1 bushel of corn madeBerkshires ''	
Polands farrowed	
Berkshires '	

Berkshires '' April 15, 1874. These pigs were fed on corn of present year's crop, gathered October 1st. It was of average quality for the season, 80 pounds in the ear having been taken for a bushel, that being the market weight at the time. The corn was placed in separate bins for each pair—the Polands consuming the whole of theirs, and the Berkshires about one-half only, the balance uneaten being weighed back, after drying, at the rate of 75 pounds to the bushel. The Poland barrow was killed and dressed December 1, having a live weight of 175 pounds, at 207 days old, and dressed 184 pounds, shrinking 41 pounds, or 23 4-10 per cent. While it is the province of the persons in charge of experiments to state facts only, perhaps it may be well to caution the reader not to draw definite and final conclusions until this experiment, as well as others, has been repeated and extended. The experiments projected for the coming year will be submitted in another report. And now, then, this is respectfully submitted to the Board of Trustees. B. F. JOHNSON, In charge of experiments.

In charge of experiments.

CHAMPAIGN, ILL., December 1, 1874.

Table A.

13	115 24	80 22	75 29	70 28	50 18	60 14		Lbs. Stalks. "Corn.
12	157 59	160 56	$125'_{52}$	105 38	180 45	100 36		Lbs. Stalks. '' Corn.
11	$\begin{smallmatrix}168\\76\end{smallmatrix}$	170 89	192 76	180 62	105 60	130 47		Lbs. Stalks. " Corn.
10	168 69	207 67	175 61	165 65	180 48	120 41		Lbs. Stalks. " Corn.
9	175 68	$\begin{array}{c}145\\56\end{array}$	165 56	175 64	200 59	130 51	_	Lbs. Stalks. "Corn.
8	150 53	$\begin{array}{c}160\\53\end{array}$	150 50	215 57	$\begin{array}{c} 135\\ 48\end{array}$	100 38	_	Lbs. Stalks. '' Corn.
7	$\begin{array}{c}153\\55\end{array}$	110 32	120 51	140 35	130 44	· 170 30	ROAD	Lbs. Stalks. " Corn.
6	160 53	125 46	150 52	145 31	115 32	$\begin{array}{c} 140\\ 28\end{array}$	•	Lbs. Stalks. " Corn.
5	125 48	130 41	115 37	120 41	115 38	90 29	-	Lbs. Stalks. " Corn.
4	127 40	$\begin{array}{c} 122\\ 38\end{array}$	· 70 17	90 26	100 37	110 33		Lbs. Stalks. " Corn.
3	125 47	100 40	90 28	95 30	100 26	145 41	-	Lbs. Stalks.
2	110 · 28	95 31	95 26	100 37	98 36	135 36	_	Lbs. Stalks. " Corn.
1	105 35	90 38	140 \$1	125 42	120 38	135 52		Lbs. Stalks. '' Corn.
<u> </u>	A	B	C	I	E	F	1 1	

BOAD WAY

T	ab	le	B.

No.	Variety.	D	Yield.		
		an acre.	Lbs.	Bushels per acre.	
$1 \\ 2 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 10 \\ 11 \\ 12 \\ 13 \\ 14 \\ 15 \\ 16 \\ 17 \\ 18 \\ 19 \\ 20 \\ 21 \\ 22 \\ 23 \\ 23 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 1$	Peach Blow Rough and Ready Orono Calico	1-100 	$\begin{array}{c} 16\\ 28\\ 23\\ 18\\ 73\\ 12\\ 5\\ 22\\ 13\\ 34\\ 53\\ 27\\ 68\\ 33\\ 35\\ 14\\ 36\\ 14\\ 8\\ 8\\ 16\\ 25\\ \end{array}$	$\begin{array}{c} 26.66\\ 46.66\\ 38.33\\ 30.00\\ 121.66\\ 20.00\\ 40.00\\ 8.33\\ 36.66\\ 21.66\\ 56.66\\ 88.66\\ 45.00\\ 103.33\\ 23.33\\ 23.33\\ 23.33\\ 23.33\\ 26.66\\ 2$	

The above 23 varieties were planted the 23d of May, on low, black prairie soil-were plowed three times, hoed once, and bugs kept off by Paris Green, applied twice. Distance of rows, three feet 10 inches, and 18 inches in the row. Two pieces were planted, of the usual size, in each hill. To the excessive heat and drought must be attributed the meagre yield.

FARM EXPERIMENTS.

To HON. EMORY COBB, President of the Board of Trustees of the Illinois Industrial University:

To Hon. EMORY COBB, President of the Board of Trustees of the Illinois Industrial University: SIR—At your suggestion made at the last meeting of the Executive Committee, I have prepared an outline of a programme of farm experiments, together with an estimate of expenses for seeds and labor, with the expectation, however, that the Board of Trustees will alter and amend, and perhaps reduce both in number and extent.
Members of the Board should fully endorse the plan here laid down. It is quite probable that better advice and further information, together with season circumstances and accident, might absolutely require a material modification of it before the time had arrived to put it in operation. I have put the Farm Experiments under seven heads, namely: 1, the Cereals: 2, the Clovers and Grasses; 3, the Industrial and Commercial Plants; 4, Roots; 5, Vegetables; 6, Manures and Fertilizers; 7, Feeding.
And first of the cereals, in the order of the alphabet, I name Barley.
Though grown far north in this country and much further south in southern Europe and north-ern Africa, as a winter crop, however, barley, in this latitude, is a very doubtful one. Being the earliest of the Cereals, it is first attacked by chinch-bugs, and from some unexplained causes, on our rich soils, it is very liable to rust, blight, and fall down before maturity. For the purpose, then, of trying to succeed with Barley—and if we do not succeed, to learn the reason why —I propose employing seed obtained from abroad to sow— One acre 4-rowed Barley.
Buckwheat is also a very doubtful crop, partly, it is believed, because it is sown too late in the season to germinate successfully. It is proposed to try one acre each of two leading varieties, and anticipate the usual time of sowing by one or two weeks. I put down these— One acre common Buckwheat.
One acre silver-hulled Buckwheat.
Next in order, but first in importance, is Corn, for which I have laid down the following rather tiberal

Next in order, but first in importance, is Corn, for which I have laid down the following rather liberal plan :

1. One-half an acre each of the large varieties from South America, introduced by the way of France—the Caragua and the Curco. The Caragua is quite unlike any variety we cultivate, and is, where known, greatly preferred for sailing. The Curco is a giant kind; and if we should suc-ceed in crossing it with home grown ones we might invigorate and enlarge our own varieties by an infusion of new blood from abroad.

2. To obtain from a single acre the largest possible yield, and in order to do so, spare neither

manure, labor, nor watchfulness. 3. In a patch of five acres, to give every alternate eight or ten rows deep and thorough cultiva-tion from the start, to be continued up to full maturity of the plants, and giving the other alter-nate rows, of an equal number, the common cultivation of the country, and "laying by" at the

usual time. It is an unsettled question among farmers, whether corn should be laid by after two or three plowings, and before the ear and tassel begin to show, or whether cultivation should be continued through the whole growth of the plant. To help to settle this question this experiment

Continued through the whole growth of the plant. It is proposed. 4. Five acres to be laid off in alternate rows in a similar manner to the above, and one-half laid by with earth thrown to rows and roots, and a high ridge left in the middle, by use of a single-horse turning plow, or a large single shovel; and the surface of the other alternate rows left as smooth and level as possible

5. Five acres more to be divided in a like manner, to one-half of which shall be applied deep and to the other half shallow cultivation during the season.

and to the other half shallow cultivation during the season. 6. To plant 1½ acres more or less with four or five of the largest and best varieties, of as many kinds and colors, and from the product to select, for next year's seeding, the best and largest ears regardless of color or complexion; and continuing the experiment so as to ascertain, if possi-ble, what the true tendency is in color, size, and quality, when nature makes the selection. 7. To plant one or more acres as remote as possible from other confields with one of the best kinds common to the country to test if it is possible to maintain one kind or variety in a pure

state.

state. Why experiment should be made with one or more kinds of Spring Rye, two or more kinds of Spring Wheat, and twice that number of kinds of Oats, it is hardly necessary to give a reason for. Spring Rye, in this State, is rather a rare crop. Spring Wheat in Central Illinois, to say the least, is a doubtful one; while Oats are second only in importance to Corn. To render a rare crop more general, a doubtful crop more certain, and to attempt to improve a crop that is popular, general and profitable are certainly proper subjects for Farm Experiments. Clover and Grasses. The drought of last summer taught us the imperative need there is of some one or more forage plants which will stand drought and furnish pasturage or green fodder during the extreme heat from July to September. Alfalfa and Lucerne clovers, for they are different, the first having been naturalized in Chile and introduced thence to California, and the other is from France and the south of Europe, promise better for the purpose than any I find recommended ; and L therefore surgest trial be made and alternate string sown on the rye field southwest of the

and I therefore suggest trial be made, and alternate strips sown on the rye field southwest of the University. And in addition to these, the other grasses named below-

One	acre	(more	or less)	Alfalfa or Chile Clover.
One	acre			Lucerne or French Clover.
One	acre		" "	Italian Ray Grass.
One	acre	" "		Orchard Grass.

This rye field having a low and rich soil, which is at the same time well tile-drained, is recom-mended for these clovers and grasses, since those of them very tender while young would be less hable to burn out in summer and thaw out and chill out in winter than if sown on a higher and

drier and less mellow rich soil. The next in order is Commercial and Industrial Crops, and first among commercial plants is The next in order is commercial and industrial crops, and installing commercial plants is Cotton. Half a century ago it was considerably grown as far north as Sangamon county; but changes of climate and some other causes have rendered a crop always uncertain, still more so, and unless the seed of some unusually early variety be obtained, the experiment of growing it is not recommended. Nevertheless the cultivation of Cotton is slowly moving north, and if at the end of another half century Cotton growing is beth common and profitable as far north as 40°, it

end of another hair century Cotton growing is both common and profitable as far north as 40°, it would not be a surprising thing. The growing of Flax for seed is increasing in Illinois, for this reason, that the cultivation is not difficult, the chances of success reasonable, and the cash returns for labor and money comes back in shorter time than from any other seed crop. But there is a great difference in the product of Flax, as well in yield of seed as good fibre. To embrace all these excellencies, special and otherwise, I advise—

One acre of White Flowering Flax, One acre of Piermont French Flax, One acre of Calcutta Flax,

One acre of Common Flax.

Hemp has pretty much gone out of fashion the last ten years in Illinois, not because the soil Hemp has pretty much gone out of fashion the last ten years in lilinois, not because the soil does not suit the crop, not because a successful return is not as certain, but mainly for the reason it has been found almost impossible to get the right kind of labor to harvest and cure it at the busiest and most trying time of the year. But the labor market is believed to be now so well supplied that, near towns, at least, there will be no difficulty in that direction for some years to come. Under such a condition of things then, with such a profitable crop as Hemp waiting to be tried, tested, and reported upon, I offer the following recommendations:

One acre Italian Hemp.

One acre Kentucky or Missouri Hemp.

Trials with Hops have, on the whole, resulted unprofitably in this neighborhood. Nevertheless there have been large yields harvested and profitable sales made. But the failures have been largely in excess of the successes. Whether it will be worth the while for the Experimental De-partment of the Illinois industrial University to ascertain to what these failures are owing, is left

partment of the Hilmots Industrial University to ascertain to what these failures are owing, is left to the judgment of the Board of Trustees. The problem of the profitableness or unprofitableness of the culture of Tobacco on the prairies of Illinois is yet to be determined. There is now scarcely a limit to the demand for good quali-ties, and a constantly necessary one for all, even the poorest. Leaving out of view the moral side of the question which might lead to its rejection, as for the same cause Barley and Spring Rye would be rejected, since they are almost exclusively manufactured into beer and whisky. The undersigned offers the advice that trials of different kinds of Tobacco be made, namely: One-eighth of an acre of White Ohio Tobacco.

Common Seed Leaf.

... " Cuba Tobacco.

.. Kentucky or Missouri Tobacco.

For the other Industrial Plants named below, I make the suggestion that experimental trials be made with them, or as many of them, as when the time comes for it, the means, information and opportunities at hand will warrant the Experimental Department in undertaking. The list as made up reads as follows : Castor-Oil Beans; Peanuts; Saffron; Teazles; Poppy, for Opium; Peppermint, for Oil; Sun-

flower.

Root Crop. The problem of the value of roots for cattle feeding as compared with corn and other grains, or as compared with each other, has never been determined for Illinois, notwith-standing the interest and importance of the question. To throw if possible some light on the subject, it is recommended that two or more acres be planted, as follows:

One ½ acre Lange Simproved Sugar Beet. One ½ acre Large Turnip Carrot. One ½ acre Large White Parsnip. Vegetables. I now come to vegetables, and first among them of importance as a crop ranks the potato. I think cultivators will admit that no general crop is more uncertain than this, in these latitudes, and they will agree to the proposition that to teach or to suggest how to grow it, under all reasonably fair condition of soil, situation and season, would be a valuable addition to our agricultural knowledge. For proof that this can be done I point to the fact that occasionally a farmer is to be found who seldom fails in securing a crop—while his neighbors, with the same means at hand and equally good inclinations, fail three times where they succeed once. For the purpose of throwing some light on the different ways and manners of cultivation, and the good or bad effects of manners and commercial fertilizers, I have laid down a pretty extensive programme for notices as follows: for potatoes, as follows:

for polatoes, as follows: 4 of an acre of Early Rose. 4 of an acre of Peach Blows. 4 of an acre of Late Rose. 4 of an acre of Extra Early Vermont; and experiments for the purpose of learning compara-tive value of kinds by trial on a small scale of 30 or 40 distinct varieties.

tive value of kinds by trial on a small scale of 30 or 40 distinct varieties.
In order to determine which is the best summer and the best winter Cabbage among five or six of the leading kinds, and the cost and profitableness or unprofitableness of the Cabbage as a feed crop, and perhaps, going far enough to learn, if possible, the value of Cabbages, compared with oats, as cattle feed, it might be well to lay outOne-eighth of an acre of Early Winningstadt.
One-eighth of an acre of Early Schweienfrutt.
One-eighth of an acre of Marblehead Mammoth; and, perhaps,
One-eighth of an acre of some large forage kind.
With a respectful invitation to the Board of Trustees to make such additions, amendments and curtailments to these several lists as their indoment warrants. I pass on to experiments to be made

curtailments to these several lists as their judgment warrants, I pass on to experiments to be made with commercial and other fertilizers

There is no question but Artificial Fertilizers will be called upon to play an important part in the agriculture of the future. They will, in the nature of things, be first used in the extensive culture of the neighborhood of cites and large towns—indeed they are now, to a much greater extent than is generally known. If then, in the judgment of the Board, tests of the value and comparative value of Fertilizers ought to be made, in advance of their general use, by the farmers of Illinois, I suggest the purchase of the following, or others which will answer the same purpose-

Two tons of Ground Bone Dust. Two tons of Super Sulphate of Lime. One ton of Peruvian Guano.

Two tons of Plaster of Paris.

Five hundred pounds of Crude Potash. Leached and Unleached ashes.

Common Hard or Soft Coal Ashes

Refuse Gas Lime and Amonia Water from Gas Works.

Stable Manure.

Stable Manure. These are large quantities to be purchased, it is admitted, and perhaps the same is true of areas recommended for experimental crops. But to be of real value and to inform the public, trial crops and experiments with Fertilizers must be sufficiently broad, pronounced, and determined to show to the unassisted eye and judgment whether they are a success or a failure at a glance. Moreover, nothing is more fallacious than to conclude that because one has succeeded or failed with a rod square of this, or two rods square of that, that therefore such a course is to be pursued and such another disallowed, when it is proposed to apply either to fixed crops. Because, in our circumstances, and under our climate, and on our soil, we cannot control absolutely the condi-tions, whether favorable or unfavorable, and therefore experiments on a very small scale are of little or no value. To extend the area of an experiment is to lesson the chances for disturbing causes, whether for or against success, and to secure, in the same ratio, a valuable and trustworthy result. result.

But it may be asked of me why I advise such extended experiments with Commercial and In-dustrial Crops, and Plants, Roots and Vegetables. I reply that it is possible that insects which have already entailed losses to the extent of many millions on the Cereals and Commerce Crops

have already entailed losses to the extent of many millions on the Cereals and Commerce Crops we grow, may develop into a plague of still more formidable dimensions, and compel a change in our whole system of Agriculture, as they have done and are now doing in Europe. But on this head let me borrow the words of a distinguished French Agriculturalist and public man, M. Drougn de Lhuys, to be found in an opening address delivered by him at the Wine Growers' Con-vention held at Montpelier, October 26, 1874. "In contemplating the ravages caused by the destroyer of our vines, (the *phyllocera*.) our thoughts involuntarily turn to two analogous plagues—the silk-worm cholera in France, and the potato-rot in Ireland. The first broke ont when our cocooneries had suddenly increased to an ex-tent before unknown, and was especially severe at or near those places where great masses of silk-worms had been brought together. Neither hygienic cures nor the most minute precautions suc-ceeded in arresting it or causing it to disappear. It constantly reappeared wherever there were large numbers of silk-worms massed, and small colonies only, each remote from the other, es-caped contagion. caped contagion.

In 1846 the potato had become the principal crop of Ireland It took the most cool soil, which The basis the potent had become the principal crop of related in those tools the most cool soft, which was at the same time sufficiently warm, marvelously. Potatoes were as abundant as they were incomparable in quality; they fed the whole population who had for them given up the cultiva-tion of the cereals. All at once the famous Potato Rot broke out. You know the results, a famine and a vast exodus of the Irish population were the sad consequences. Since that time the potato has been cultivated as an accessory crop only—the cereals have taken possession of the soil of Ire-land and the potato rot is losing little by little its intensity and virulence. In France the vine occupied a year or two ago, five million acres-the whole southern portion of the Republic was becupied a year of two ago, nye million acres—the whole southern portion of the Republic was about to become a vast vineyard. At this moment the *phyllocera* appeared. Investigating these terrible phenomena, have attributed to them a common origin—according to them an unknown mutual law of equilibrium, and opposed to the multiplication of species. to a limit equally un-known. From these hypothetical considerations we may draw the conclusion that it will be necessary to restrain the cultivation of the vines by banishing it from the plains and lowlands of France.

France. An unknown law of nature seems to have stepped forth and proclaimed : "Thus far shalt thou go and no farther."

shalt thou go and no farther." It is possible that insect domination may compel a change in our whole system of agriculture, perhaps given too much to the cereals, and if such should prove to be the case it would certainly be desirable to be prepared as well as may be for the change. In regard to experiments in feeding hogs and cattle, it is proposed in addition to those described in a previous report, to feed a certain number of cattle out of doors, on shock corn, in the usual way; also to feed in the barn one on corn and clover hay, two on middling and clover hay cut up and mixed, and to carry out such other experiments as the Board of Trustees may suggest and direct, together with such a time fixed as opportunity may offer to the Superintendent of the Stock Denartment. Stock Department.

And now comes the question of cost and expense, which, with the assistance of Mr. Head Farmer Lawrence, who also agrees to the foregoing report and recommendation, I put down, as follows:

2	acres	of	4 and 6 row barley	\$20	00
2			buckwheat	20	00
20	• •		corn	200	00
4			clovers and grasses	30	00
5	" "		spring wheat and rve	50	00
4	"		flax	80	00
3	" "		hemp	60	00
1/2			tobacco	30	00
2	4.4		other commercial crops	40	00
2	" "		root crops	50	00
5			potatoes	100	00
1%	<u> </u>		cabbages	50	00
5΄	• • •		special crops	150	00
			n an	\$880	00
*2	tons	gro	und bone-dust\$64 00		. •
*2	tons	sur	perphosphate		
*1	ton 1	ber	uvian guano		

*1 ton peruvian guano	. 50	00	
*2 tons ground plaster	. 30	00	
*500 pounds potash cononees	. 35	00	
··· · · · · · · · · · · · · · · · · ·		- 1	249 OC

Hauling leached and unleached ashes, coal ashes, manure, refuse from gas works, etc... 100 00 Cattle feeding...... 100 00

\$1,329 00

* Estimated at Chicago prices.

Concerning beginnings for the creation of an Agricultural Museum, the matter having been sug-gested, Mr. Gardner consenting, it was thought best to move at once in order to get the benefit of the annual collection made at county fairs. Circulars accompanied with sheet notes were accord-ingly sent to each secretary of a county society in the State, and also to members of the State Board of Agriculture and other prominent gentlemen. Responses from ten secretaries have been received, and packages from no more than *five*, though as many more are promised. It has been ascertained, and the same has been the experience of Mr. Garland, of the State Board of Agricul-ture, that while these gentlemen are quite ready to help us they do not feel called upon to go so far as not only to make collections, but to do the packing gratuituosly and at some expenditure of money.

A suggestion from the Board of Trustees might show the way out of the difficulty. All of which is very respectfully submitted to the Board of Trustees,

B. F. JOHNSON, In Charge of Experiments.

The report was accepted and approved, and \$100 appropriated for purchase of certain seeds and grains, as recommended therein.

The Regent's report was now taken up.

The following appropriations were made, in accordance with the recommendations thereon: \$20 for Calisthenic apparatus; \$300 for periodicals, to be decided and ordered by the Faculty.

Mr. Kenis was employed to give instruction in modeling and composition to the class in Architecture, two hours per day, at \$40 per month, for three months, during the winter term of 1875.

The Regent was authorized to provide for a certain recommended lecture course for the Senior class, and \$250 was made the limit of expense to be incurred.

Prof. Burrill submitted his report of Horticultural expenses, which was accepted.

The Executive Committee and Regent were requested to memorialize the Legislature for the following wants of the University:

For	taxes on lands	\$6.0	000
	library cases and furniture	2.5	500
4 4	cabinets wards Paleentology casts	2.1	500
	Physical Laboratory apparatus	1.0	000
	Agricultural Museum	1.5	500
	Agricultural and Horticultural experiments	3.0	000
	srounds around new building	2.0	000
	Jibrary \$1,000 per annum	-2.0	000
	Sentorical Cabinat	- 2'F	500
	deological cability	±,0	,000

\$23,000

The following resolutions were passed:

Resolved, That the Faculty be authorized to receive students for special studies in Architectural Drawing and similar practical branches, under such conditions as they may deem expedient; *Provided*, that the conditions of the law shall be observed, and that all students thus received be reported to the Board of Trustees.

Resolved, That the Corresponding Secretary be authorized to arrange for Farmers' Institutes, without expense to the University, and to call upon Professors of the University for such services as lecturers as they may be able to render without detriment to their work with their classes; *Provided*, that the traveling expenses of such Professors, and all lecturers, shall be paid by the localities benefited by such institutes, or without charge to the University.

The following, offered by Mr. Sabin, was passed:

WHEREAS, We have heard, with sincere sorrow, of the death of the late Hon. Ezra Cornell, of N. Y., the eminent philanthropist and founder of Cornell University; therefore,

Resolved, That we express, as Trustees of a kindred institution, our sense of the eminent services rendered by the deceased to the cause of education, and especially our appreciation of his wise and noble use of the great wealth which he possessed. When other men equally wealthy but less wise shall have been forgotten and their riches with them, the name of Ezra Cornell will be remembered with honor and gratitude, and the wealth he so generously gave to mankind will still remain a blessing to his country and his kind.

Resolved. That we tender to his bereaved family and friends, as also to the officers and friends of Cornell University, this expression of our sympathy with them in the irreparable loss which has fallen upon them.

Resolved, That copies of these resolutions be sent to the family of the deceased, and that they be published in the "Illini" and elsewhere.

Mr. Gardner was authorized to settle with Mr. Gehlman.

Mr. Gardner was authorized to sell the remaining 160 acres of the Griggs Farm, at \$60 per acre.

Adjourned.