

“ Et conflagunt gladios suos in vomeres et lanceas suas in falces.”

Agricultural College,

ROSEWORTHY,
SOUTH AUSTRALIA.

Minister for Agriculture:
THE HON. C. GOODE, M.P.

The Staff.

Principal and Lecturer on Agriculture:

MR. W. J. COLEBATCH, B.Sc. (Agric.), M.R.C.V.S. (Edin.).

Housemaster, Secretary, Accountant, and Lecturer in Book-keeping:

Mr. H. C. PRITCHARD.

State Agricultural Chemist and Lecturer in Chemistry:

Mr. J. H. PHILLIPS, B.Sc.

Viticultural Instructor and Lecturer on Viticulture, Fruitculture, and Oenology:

Mr. H. E. LAFFER

(Diploma Roseworthy Agricultural College).

Lecturer on Physical Science, Mathematics, English and Botany:

Mr. A. J. ADAMS, M.A.

Lecturer on Dairying and Superintendent of Dairy:

Mr. R. BAKER

(Diploma Agricultural College, Roseworthy)

Lecturer on Veterinary Science, Physiology and Anatomy:

Mr. F. E. PLACE, B.V.Sc.,
M.R.C.V.S.

Assistant Experimentalist and Demonstrator in Agriculture:

Mr. R. C. SCOTT

(Diploma Agricultural College, Roseworthy)

Lecturer on Woolclassing:

Mr. HENSHAW JACKSON.

Lecturer on Surveying:

Mr. J. PAULL.

Lecturer on Aviculture:

Mr. D. F. LAURIE.

Supt. of Farm and Live Stock:

Mr. E. L. ORCHARD.

(Diploma Agricultural College, Roseworthy)

Clerk:

Mr. WHITTERS.

Teacher of Blacksmithing and Carpentry:

Mr. J. L. WILLIAMS

Poultry Superintendent:

Mr. F. W. GILBERT.

Old Collegians' Association.

President: MR. W. J. COLEBATCH.

Hon. Secretary and Treasurer: Mr. H. E. LAFFER.

COMMITTEE:

Messrs. H. B. ROBSON
R. H. MARTIN
W. MOTTERAM

W. C. KUHNE
H. SNOW

Hon. Auditors: Messrs. H. C. PRITCHARD and W. J. SPAFFORD

Office Bearers,

1917.

ATHLETIC CLUBS :

PRESIDENT—MR. W. J. COLEBATCH, B.Sc. (Agric.),
M.R.C.V.S.

VICE-PRESIDENTS—MESSRS. H. C. PRITCHARD,
H. E. LAFFER, and A. J. ADAMS, M.A.

Finance and General Management Committee :

MESSRS. V. T. O'GRADY, K. C. CATT, C. J. R.
NORTH, W. G. McNEIL, AND J. O. ROBINSON (Sec.)

Football Committee :

MESSRS. F. RIGGS (Capt.), R. C. SCOTT (Vice-Capt.),
C. J. R. NORTH, P. H. SCARLETT,
AND J. O. ROBINSON (Sec.)

Tennis Committee :

MESSRS. F. RIGGS, H. R. HAZELGROVE, AND
O. BOWDEN (Sec.)

General Sports :

MESSRS. F. RIGGS, K. C. CATT, M. C. MANUEL,
P. H. SCARLETT, AND C. J. R. NORTH (Sec.)

Dance Committee :

MESSRS. A. L. WARREN, M. C. MANUEL, AND
K. C. CATT (Sec.)

"STUDENT" COMMITTEE :

MESSRS. V. T. O'GRADY (Editor), F. RIGGS (Man-
ager), J. O. ROBINSON, W. N. HANNAFORD, AND
D. H. PRESTON.

SUB-LIBRARIANS :

MESSRS. G. SWEENEY, F. RIGGS, A. L. WARREN,
AND J. O. ROBINSON.

COUNCILMEN :

MESSRS. V. T. O'GRADY, C. J. R. NORTH, AND
W. G. McNEIL.

CONTENTS.

	Page
Current Events	5, 6
Short Notes on the more Common Types of Scottish Farm Practice 6, 7, 8, 9, 10, 11, 12, 13, 14, 15	
Vin "Extra"-ordinaire	15, 16
Harvest, 1916-17	16, 17, 18
A Summary of the Wheat Returns	18, 19, 20
Trip to Town	20, 21, 22
Old Collegians' Association	22, 23, 24

PRESENT STUDENTS.

JANUARY, 1917.



THIRD YEAR.

G. Sweeney
F. Riggs
V. T. O'Grady

W. H. Lewcock
K. C. Catt
F. F. Cobham

SECOND YEAR.

J. O. Robinson
A. L. Warren
O. Bowden

C. J. R. North
W. N. Hannaford

FIRST YEAR.

R. S. Cobham
V. M. Fairbrother
H. R. Hazelgrove
W. J. H. James
H. K. Lewcock
K. MacLeod

M. C. Manuel
W. G. McNeil
D. H. Preston
C. C. Ross
P. H. Scarlett
M. J. Shenton

The Student.

Published by the Old Collegians' Association, under the joint direction of Past and Present Students.

EDITED BY THE STUDENTS.

VOL. XVII.—No. 2.

JUNE, 1917.

Current Events.

Towards the end of February harvest operations were completed. The harvest included about 350 tons of hay which has unfortunately become infested with mice. This, however, is only in keeping with the remainder of the State.

The examinations passed off quietly. On the whole very good results were obtained, especially those of the third year. The students of that year have established a new record in the average they obtained, but perhaps it is as well to take into account the fact that only five sat for the examinations.

Early in March a large number of students and members of the Staff were invited by Mr. Alick Murray, to his residence at Mt. Crawford. A delightful day was spent, and we take this opportunity for again thanking Mr. Murray for his generous hospitality.

Little sport has been indulged in by us during the last session, but the difficulty of arranging matches, the hard work attached to harvest operations, and the proximity of the exams prevent much enthusiasm for cricket arising.

Members of the third year were treated, on the completion of the Diploma examinations, to a trip to Adelaide for the ostensible reason of receiving knowledge. This quest after facts did not prevent them from enjoying themselves in their own way. An account of the inspection of various establishments in Hindmarsh will be found in another portion of this issue. Two wine cellars, at Magill, were also shown to us, and we may say that this portion of our trip was even more interesting than the previous journey to Hindmarsh.

In conclusion, it is as well to say that some former contributors have developed a marked sympathy for the methods employed by the O.L.P. when it desires a higher minimum wage.



Short Notes on the More Common Types of Scottish Farm Practice

At the outset, I would desire to impress upon the reader that the following short notes are not in any way meant to represent the last word on the subject of "Scottish Farm Practice"; to attempt such a thing in so short a paper would be quite impossible. The idea has been to set before the young student of agriculture a few facts in regard to "Scottish Farm Practice," with the hope that they may prove of use to him in broadening his outlook on Agricultural practice generally, to give him some idea of what rotation of crops, their cultivation, and manuring, together with the feeding of stock, means in actual practice, apart from the common type of rotation he sees before him every day, of bare fallow and wheat with a minimum dressing of superphosphate, because there is not the slightest doubt that the time is fast approaching when the farmers of Australia will have to do more with their land than grow wheat for the English market.

Firstly, let us consider, briefly, the case of "Suburban Farms," that is to say, farms in the neighborhood of Edinburgh.

Generally speaking we find here a system of agricultural practice adopted, known as the "Intense Culture" and "Specialization." It embodies, on the one hand, the growing of bulky produce crops, for which can be found a ready market near at hand: crops which are grown and sold in the city; and on the other hand, crops which are more or less necessary in a rotation, and find a market at the door to the "Stock Farmer," the "Specialist in Dairying." There are then these two classes of specialists, one "the grower of large quantities of saleable crops," and the other, a "Dairyman," who purchases his feeding stuffs largely from the crop grower, and feeds cows for the production of milk. For such a system to be adopted, certain conditions are necessary, and moreover, certain other existing conditions make the system necessary. Considering the latter case first,

we find that in this case, owing to situation, rents are high, which necessitates the farmer extracting the largest possible return from his land, and it is found that where a ready market lies at hand, this can in no case be done so well as by the growing of crops.

To adopt the practice of "Mixed Farming" or "Stock Farming," must necessarily mean that considerable area must lie in pasture, a form of crop that could, in such instances, be more profitably replaced by a direct produce crop. We see then that the farmer is more or less driven to adopt a form of "Intense Farming" to obtain his rent.

The conditions necessary to make such a system practicable are, proximity to markets and soil conditions. Of course these two conditions of rent and possibility must, of necessity, strike a balance, otherwise the system could never exist.

Having justified the existence of the system, we will now consider the forms of rotation practiced, that is to say, the kind of crops grown, and the order in which they were grown. This will be settled largely by the ruling price of the crop, the cost and availability of labor, and the compatibility of the different crops. Taking into consideration the various modifications, the rotation usually adopted in "Suburban Farming" is either one form or another of the "East Lothian Rotation," or the "Mid Lothian Rotation."

Considering the "East Lothian Rotation" first, this rotation is of a six-course type, and will be something as follows :—

1. Potatoes.
2. Wheat.
3. Turnips.
4. Barley.
5. Grass (hay).
6. Oats.

As modifications of this type, we may mention :—

1. Wheat
2. Oats.
3. Roots.
4. Barley.
5. Seeds (hay).
6. Potatoes.

We may say that this form of modification is specially suitable where dung is somewhat scarce, and the potatoes are benefitted by coming after the hay crop.

1. Oats.
2. Fallow Crop (roots).
3. Wheat.
4. Beans.
5. Barley or Wheat.
6. Seeds (hay).

This form is more suited to stiff land, because we find heavy lands grow better grain crops, whereas roots and potatoes are light land crops.

Another possibility on stiff land would be to add "Timothy" to the rotation, and leave it down for four years, taking hay every year.

The "East Lothian Rotation" may be said to be practiced on all best and high rented land in Scotland. The reason it is adopted, as we have seen, is because it does not pay to leave high rented land in grass; moreover, East Lothian land is not suited to grazing on account of low rainfall, and considerable periods of drought, whereas in "Forfarshire" and "Fifeshire Modifications" the seeds are grazed with feeding stock, that is to say, cake fed cattle or fat lambs.

Generally it may be said that this rotation is a severe drain on fertility, and therefore we need must farm intensively as regards manure and labor. When practiced near a town, as in the suburban districts of Edinburgh, the difficulty is often in finding sale for barley, and again there may be far too many turnips for requirements, and therefore, generally, the "Mid Lothian Rotation" is better suited to "Suburban Farming."

When practiced, the manuring and yield will be something as under:—

The potatoes are heavily manured, both with dung and artificials, the dung being obtained both from the dairy farmer and from the city, and is applied at the rate of about 20 tons per acre. The quantity of artificials applied will be between seven and eight cwts. of good potato manure, giving on analysis about 5 per cent. potash, 5 per cent. ammonia, and 24 per cent. soluble phosphate. This may be obtained by mixing together 1 cwt. sulphate of ammonia, 2½ cwt. superphosphate (33 per cent. soluble), and ½ cwt. steam bone flour, with 1 cwt. potash salts (30 per cent. K₂O). The yield that may be expected from this crop will be between 8 to 10 tons per acre.

Wheat follows potatoes, and does this particularly well, and usually, without manure, the yield will be about 6 qurs. per acre.

Turnips follow wheat, and are manured, usually with artificials only, at the rate of 8 to 9 cwts. per acre of good turnip manure, containing 4-5 per cent. ammonia, 30 per cent. phosphatic acid, 4-5 per cent. potash. This may be obtained by mixing one cwt. sulphate ammonia, 3-4 cwts. super phosphate, 2-3 cwts. steam bone flour, and 1 cwt. potash salts (30 per cent. K_2O). The yield will be about 24 tons per acre, and go to supply the dairyman.

Barley follows turnips, and is not manured. The yield will be about 6-7 qrs. per acre, and finds its market usually with the brewers.

Hay follows barley, and is usually sown out, the mixture used consists generally of Italian rye grass and English red clover. The practice as regards manuring is to apply either nitrate soda or sulphate ammonia in two top dressings, of say, 1 cwt. each. For yield we may expect 2 to $2\frac{1}{2}$ tons for the first cut, and if the aftermath is not grazed with lambs, but cut as a second crop, the yield will be about 1 to $1\frac{1}{2}$ tons per acre.

Oats follow hay. The manuring consists in the application of 1 cwt. sulphate ammonia, with 2-3 cwts. superphosphate per acre, and the yield will be from 8-10 qrs. per acre. These are largely used as food for farm horses.

The dairyman usually rents part of the farm and buildings from the farmer, and purchases hay, straw, and turnips from him, and at the same time, pasture, in the shape of a small field, in which to run his cows. Large quantities of cake and brewers' grains are also purchased for feeding purposes, and the milk sold to supply the city.

I pass on now, to a consideration of the "Mid-Lothian Rotation," which, as I pointed out, was the rotation most commonly adopted and best suited to "Suburban Farming."

In this rotation the object aimed at is specialization in the direction of the production of human food, and is only possible where a good market lies at hand, that is to say, in the neighborhood of a large town or city. The crops grown and the order in which they are grown will be something as follows :—

1. Oats.
2. Potatoes (2-3rds.), Turnips (1-3rd.)
3. Wheat. Oats.
4. Seeds (Hay cut twice).

The manuring is heavy, the potato crop will receive 5-6 cwts. of good potato manure, and as much as 40 tons per acre of dung.

The method adopted is, during the slack part of the year, to cart from the city to the manure heap in the field, or under cover; the manure from the dairy is mixed in this heap, and there the whole is left to decompose until required. Usually it is applied to the oat stubble before ploughing; the field having been previously laid out in 6 yard squares, by means of a plough and marker. The dung is carted from the heap and dropped with one hut to the square, gauging the number of huts to the load; this ensures regularity of distribution, and enables a comparatively accurate estimate of the quantity of manure to apply.

Wheat again, as in the "East Lothian Rotation," follows potatoes, and is not manured. In fact the tendency here, which becomes a defect, is that you are inclined to get over-manuring, bringing about the lodging of the crop after roots, and causing great difficulty in harvesting. On the other hand the oat crop is often left unmanured, though the hay crop is treated as in the "East Lothian Rotation." In short, too much dung is applied at one time, and the oats are too far removed from the dung. As a remedy for this we might suggest using less dung, and more artificials, particularly in the case of the oat crop. In citing other draw-backs in connection with this rotation, we might mention also that you get the separation of crop growing, from stock keeping and dung production. Important interests are separated, as in the making of manure on the dairy farm, where straw is limited, owing to high prices, and therefore you get excessive waste going on. Moreover, a large amount of carting is entailed, both in the carting of crops from the farm to the dairy, and of dung from the city to the farm. From what has been said, it will be readily seen that you step from this rotation into market gardening.

In England, usually you have a much larger proportion of land under permanent pasture; this will vary from $\frac{1}{2}$ to 2-3rds. of the farm. The winter being shorter, less winter keep is required, and also there is a great deal of dependence upon meadow hay for wintering stock, with the result that limited quantities of roots are grown, and where grown, cabbages and mangolds are more extensively used than turnips. The former are better suited both to the drier climatic conditions of England, and the heavier character of the land.

We will now turn our attention to a consideration of what may be called a "Stock Farm," that is to say, a farm where the first and main consideration is the raising and feeding of stock, and the production of crops for this purpose. As we did in the case of the "Suburban Farm," we will first of all look at the conditions that tend to make this type of farming the profitable type as above the last. We saw that in order to be able to grow crops of bulky produce to profit we needed certain conditions, as proximity to market, since freight on such produce are comparatively speaking high. We saw, also, that where the crop was sold off the land in bulk, it was necessary that we should be near a centre, where manure might be readily obtained at moderate cost of carting, and lastly, that the soil and climatic condition should be favorable to the production of these crops.

"Stock Farms," then, we find, are situated at a more or less high altitude, an altitude at which many crops do not produce to the best advantage, and where oats is the principal cereal grown, both because it is the cereal that does best under these conditions of high altitudes and wet, and also because it does best after lea. A field that after pasture, cannot be brought to a fit state of tilth to produce the best crops of wheat, but remains more or less rough, will invariably yield better crops of oats; the oats, too, may be used for feeding stock. Besides the condition of altitude, we find also that a "Stock Farm" is one that is a considerable distance from a market, a distance, that from the price of carriage of bulky produce, more or less prohibits its growth to profit; we must seek then, to produce a more concentrated form of produce, and so reduce the cost of carriage, and we do this by the production of stock. By this means also, we do away with the necessity of carting on to the farm, large quantities of farm yard manure, as we have on the place all that produced by the stock during the process of feeding.

The question of labor may also be of importance here, for generally speaking, we need far less labor to run a "Stock Farm" than a "Suburban" type of farm, and the difficulty of obtaining labor may often be the means of forcing a farmer to adopt a system of agriculture where less labor is needed, that is to say, stock is kept in preference to the production of crops.

In this instance, we have referred in particular, to hand labor, but horse labor on a stock farm is also naturally reduced: fewer horses are kept.

The crops grown, as we have seen, are crops that can be used as feed for stock, and the system of Rotation adopted, may be the "East Lothian," with any of its modifications, or the "Aberdeen 5-Course Rotation," with any of its modifications.

Having already considered the "East Lothian Rotation," we will pass on to a consideration of the "Aberdeen Rotation."

This is the simplest shift in Scotland.

1. Oats (Lea Oats).
2. Roots (Turnips—very few Potatoes).
3. Oats and Barley (depending on the nature of the land. On stiff and high land, oats. Barley is best nurse crop).
4. Seeds (Hay and Pasture).
5. Seeds (Pasture).

It is common in Aberdeenshire, Lanarkshire, and some dairy districts, and generally the poorer districts of Scotland, where the choice of crops is limited, and the best grain crop grown is oats. We find it also on the higher lands, for oats will grow up to an altitude 1,500 feet, and in the North, where, owing to the climatic condition, the grain is often damaged and discolored, and therefore pays better to feed to stock.

It is necessary that we have roots for the purpose of manuring and cleaning the land, and usually the turnip crop will receive artificials, and about 12 tons per acre of farm yard manure. We see then, that the arable part of the farm consists practically, of two crops, roots and oats. The seeds must come after the oats, as this is the only preparation.

As regards manuring, it may be said that this rotation is almost self-sufficing, since we are feeding practically the whole of the produce of the land to stock, and if this is fed to full grown animals, you will need little artificials, in fact it may be said that superphosphate for turnip culture is the only essential.

As regards the modifications of this system, they consist in the main, as to the extent of the farm that shall be in pasture. Usually $\frac{2}{5}$ ths of the land will be under pasture or grass, of which probably, about $\frac{1}{10}$ th, that is to say, half the young grass, will be made to hay, and $\frac{3}{10}$ ths remain as pasture. This is common in Aberdeenshire, where the feeding season comes in the winter. In Ayrshire the

bulk of the feed is required in the summer for dairy purposes, and the farmer calculates to carry his cows through the winter, with very little additional food; all he wants, therefore, is sufficient arable land to carry his cows through the winter. To do this the pasture is extended in duration from 2 to 4 years or more.

It may be questioned here as to whether it would not be better to lay down part of the farm in permanent pasture, as is done in England, and work the rest on a 5-course shift, but the idea in Scotland is to keep all the land under the plough, though the question depends mainly on the behaviour or character of the land, and the climatic condition. In Ayrshire it is quite possible to establish permanent pasture, and it is down to some extent, in which case, turnips are grown to a minimum; you have a milder climate and a better rainfall. On the other hand, some lands, particularly the poorer lands, in the drier East of Scotland, begin to fail in grass at the 3rd or 4th year, and for this reason, breaking up is resorted to.

In Stirlingshire again, and on clay land generally, the grass may be dangerously thin during the 2nd and 3rd year, and after this it tends to improve quickly, and consequently we see permanent pasture indicated.

We get yet another modification in the Border Districts of Scotland, associated with the feeding of lambs. Here again we find the summer season the heavily stocked season, in fact the stocking in summer is almost double or more with lambs.

With sheep feeding there is very little farm yard manure produced, and moreover, sheep-keeping is so much favored on the Borders, that the straw is even frequently wasted, hence the crying need of Border land in organic matter. The method adopted for overcoming this difficulty, is to sow deep rooted drought resistant grasses, with the idea of establishing a sod. Here, too, Barley is often substituted for oats after roots, partly because the climate is better suited to barley than to oats, the rainfall being less, and partly because the straw is less and less is required.

A good deal of feeding stuff is required for the ewes in winter, that is to say, more roots are required, hence, often you find the oat shift left out altogether, and a premium set on roots and pasture, in which case, the rotation will take somewhat the following form:—

1. Roots.
2. Oats.
3. Seeds.
4. Pasture for 4 years or so.

The difficulty here is to secure for the root crop after pasture, a proper mechanical condition of the soil. This may be overcome to some extent on the more suitable land by ploughing the lea early, and increasing the tillage by cross ploughing. The following of pasture by roots has here a farther advantage, since, in this modification, there is little farm yard manure available, hence we wish to avoid, if possible, taking the roots after oats.

There are several other modifications of the "Aberdeen Rotation" that are adopted, but those considered are the principal, and therefore we will now leave this Rotation and pass on to a consideration of city and suburban dairies, and in this connection, what one must keep in mind is the fact that large yields of milk are required for the city markets, and also that in many instances the cows do not leave the byres, practically speaking, till the end of their milking period.

The practice is to buy a large-framed cow, in good condition, at about her 3rd calf, being usually of Shorthorn breed. These cows then are heavily fed and forced to produce large quantities of milk, and are not as a rule calved, rather they are milked until the yield begins to fall too low to be profitable, when the cow is dried off, fattened, and sold for beef.

It is estimated that the dairyman loses about £5 or £6 on each cow, a comparatively large sum to be made up on the milk yield before any profit can be obtained. The great disadvantage of the system lies in the fact that the cow is killed long before she has passed her best as a milk producer, also that she produces but an inferior quality of beef, however, to maintain this system means an enormous wastage of cows. It would perhaps be better for the welfare of the dairy industry, if the cows could be kept and bred from, using selected bulls of good milking strain; not only would this keep up the supply, thereby reducing the cost of cows by adding considerably to the young members, and keep the mothers longer at the pail, but at the same time would tend greatly to improve the strain, from a milking point of view.

The feeding of these cows will be something as follows :—

30 to 40 lbs. Draff.

70 to 80 lbs. Turnips.

9 lbs. Concentrated Food.

The concentrated food may consist of say 3 lbs. treacle, 3 lbs. bean meal, 3 lbs. linseed cake ; besides this, hay and straw are given, and of straw usually, as much as the cow will eat.



Vin "Extra"-ordinaire.

We left Adelaide by a Burnside car at about 10 a.m., on Thursday, the 29th day of March.

We are indebted to Mr. Laffer, our lecturer on Oenology, for the pleasure and knowledge obtained in this inspection of various wine cellars. Accompanying Mr. Laffer were the three students of the science of wine making, and one extra. This extra, however, is teetotal.

Leaving the car at the most convenient point we struck across country to the Stony Fell vineyards. Coming over a low hill we were confronted with the opposite slopes of the gully. It is there that most of the vines are placed. A little further up the gully, but on the opposite side, the quarries of Dunstan, Ltd., are situated. Vines growing within a stone's throw of a stone crusher.

Mr. Martin, owner of the Stony Fell vineyards, welcomed us and proceeded to conduct us around his spacious cellars. We were able to inspect several tanks in different stages of fermentation, and also noticed the press at work. A point of interest was the sherry casks, placed as close to the roof as possible. We saw, for the first time, big vats holding several thousand gallons, in which blending is carried out.

The connoisseurs among us greatly appreciated the hock poured out for our benefit, and wish to again record their delight in their visit. And so after an hour and a half, which passed all too quickly, our visit came to an end, and we passed on to the next place of interest.

Auldana being next on the list, we stepped it out and soon arrived at our destination. The manager kindly placed his time at our disposal, and after a general tour of the ground floor, supplied us with candles and proceeded to lead the way through the champagne vaults. To us these were

the main points of interest, and wonderful things they are. The entrance and exit are both on the ground level, and aided by a shaft, this conduces to splendid ventilation. The vaults have been hewn out of solid rock: bottles of champagne fairly stud the sides, and these caused one of our number to copiously water his mouth in anticipation.

From the vaults we passed to the finishing room and noted the different machines essential to the manufacture of sparkling wines.

Naturally, after seeing so much of the manufacture, we were anxious to discover the effect of a sparkling wine upon the palate. The generosity of the manager allowed our desire to be satisfied, and very good wine we found it.

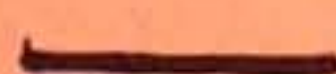
It was now so late that we had to forego the pleasure of visiting other cellars, although we have no doubt that they would also have extended the "glad hand."

It remains to us to enter our appreciation of the treatment we received at both Stony Fell and Auldana, and we wish that their present success in the wine industry, justified as it is, may continue and increase as fresh batches of "third years" roll up annually to be treated on the same lavish scale.

V. O'G.



Harvest, 1916-17.



The growing period of our grain and hay crops was characterised by an abundance of rain. Rain fell early in Autumn, and thus enabled most of our crops to make a good start before winter set in. This season of the year, however, was remarkably mild and wet; the cereal plants never received a real check, and therefore grew continuously from germination. In the month of June alone, over five inches of rain fell, and during this month, on three occasions only, did the temperature fall below freezing point. It follows then that the crops had splendid conditions for their development. The early spring was somewhat warm and dry, and maturity was therefore hastened, but the wet and cold weeks in the first half of November provided a check on this, and incidentally added enough moisture to the soil to make high yields certain. Storms occurring at the same time caused nearly all the crops to lodge very badly. Notwithstanding this, the average yield was high and the grain plump.

Fungoid diseases were conspicuous by their absence.

ENSILAGE CROPS.

The quantity of cereal ensilage made this season was less than it is customary to manufacture. In all 103 tons 11 cwts. 28 lbs. were weighed into the pits. Most of this amount was Calcutta Oats from No. 3, the remainder consisting of the headlands in 6A. Begun on the 20th of October the silage harvest was completed on the 31st of that month.

Details are as follows :—

Field.	Area in Acres	Total Yield.			Acre Yield.		
		Tons	Cwts	Lbs	Tons	Cwts	Lbs
No. 3	... 8.694	83	4	2	9	11	45
No. 6A.	... 3.749	20	7	26	5	8	70
Totals	... 12.443	103	11	28	8	6	51

THE HAY HARVEST.

There were approximately six-hundred tons of hay on hand when hay-making commenced. Consequently a small area only was set apart for hay, and this, exclusive of headlands, was contained in three home paddocks, Nos. 3, 7A, and 7B. These fields comprise about eighty acres. The estimated yield was exceeded by about fifty tons. In all three-hundred and seventy-four tons were carted in, of which two-hundred and eighty came from the three fields mentioned. Speaking generally, the sheaves were stooked close up behind the binder. The hay was carted promptly, and a minimum of loss from the weather sustained. Two stacks were built, and the balance placed in the hay shed. The binders started on the last day of October, and the last load was carted by the 4th of December.

Details are as follows :—

Field.	Area in Acres	Total Yield.			Acre Yield.		
		Tons	Cwts	Lbs.	Tons	Cwts	Lbs
No. 7A	... 21.064	77	12	73	3	13	80
No. 7B.	... 22.443	75	19	82	3	7	80
No. 3	... 39.236	126	5	5	3	4	40
Headlands	... 38.984	94	19	72	2	8	82
Totals	... 121.727	374	17	8	3	1	66

THE WHEAT HARVEST (GRAIN).

All the early and mid-season varieties matured splendid crops, and were characterised by plump grain. The highest yield we obtained was a block of King's White, two acres in extent, and situated in the Permanent Experimental Field. This went nearly fifty bushels to the acre. It is noteworthy that over and above a dressing of two cwts of super to the acre, five cwts. of lime are drilled in before seeding. The plot is sown in alternate years.

Great difficulties had to be faced in most of the harvest fields. Some of the crops were quite flat, and were only garnered by means of the reaper-thresher. In spite of all we could do, however, much grain was lost. In all there were 211.512 acres of wheat for grain.

All crops were sown at the rate of one hundred lbs. of seed to the acre. Two cwts. of super to the acre were applied at seeding time.



A Summary of the Wheat Returns, 1917.

	Area in Acres.	Total Yield Bush. Lbs.	Acre Yield Bush. Lbs
Farm Crops	211.512	4,887 2	23 6
Experimental Crops (1 acre and over) ...	119.425	3,297 20	27 37
Experimental Crops (under 1 acre)	18.857	473 58	25 8
Totals	349.794	8,658 20	24 45

FIELD No. 5B.

King's White, Selection 6, was sown here for a hay crop, but circumstances permitted us to harvest it for grain. Off a total of 78.393 acres, 1,994 bushels 40 lbs. were garnered, equal to 25 bushels 27 lbs. per acre.

EBSARY'S C.

Four selections of Gluyas were sown in this field, and all of them made luxuriant early growth; eventually the crop became lodged very badly. In addition to this the harvesting of the different crops was left late in the season. Much grain was therefore lost, but the acre yield of over 30 bushels is eminently satisfactory.

Details are as follows :—

Variety.	Sel.	Area Acres.	Total Yield Bush. Lbs.		Acre Yield Bush. Lbs	
Gluyas	... 10	1.819	43	26	23	53
Gluyas	... 9	15.345	508	2	33	6
Gluyas	... 8	14.041	426	46	30	22
Gluyas	..... 7	4.156	97	37	23	29
Totals	...	35.371	1,075	51	30	25

DAHLITZ.

Seeding in this field was carried out with College bred or selected wheats. Those harvested for grain yielded only fair returns, but it is necessary to say that this district is not best suited for the class of wheat grown this year in Dahlitz—mid-season. Added to this, the land was too well worked preparatory to seeding and a proportion of white heads resulted.

Details are as follows :—

Variety.	Sel.	Area Acres.	Total Yield Bush. Lbs.		Acre Yield Bush. Lbs	
Cad.	... 3	2.431	41	48	17	12
College Eclipse	... 7	4.396	68	24	15	34
Basil	... 1	9.147	139	53	15	18
Caliph	... 1	2.144	32	13	15	2
Sevens	...	2.166	27	55	12	53
Marshall's No. 3B.	3	2.890	35	5	12	8
Daphne	... 3	2.083	24	15	11	45
Anvil	... 3	0.775	7	46	10	1
Eureka	... 2	1.084	9	8	8	26
Totals	...	27.096	386	27	14	16

NOTTLE'S C.

Different selections of King's Red and Queen Fan were sown in this field, and rape and mustard stubble being Autumn ploughed. King's Red went down badly, but the Queen Fan stood up well

Variety.	Sel.	Area Acres.	Total Yield Bush. Lbs.		Acre Yield Bush. Lbs	
King's Red	... 10	3.248	98	58	30	28
King's Red	... 9	9.092	272	7	29	56
King's Red	... 8	4.332	109	3	25	10
Queen Fan	... 6	3.163	71	39	22	39
Queen Fan ...	... 4	6.303	131	3	20	48
Totals for field	...	26.138	682	50	26	7

DALY'S A.

A kale stubble was Autumn ploughed and King's Red, Selection 7, sown. Rain interrupted seeding operations: a poor germination resulted. The yield for the 50 acres works out at 16 bushels 17 lbs. per acre.

THE OAT HARVEST.

Only 6.356 acres of oats were harvested for grain. This area comprises Grainger's Sheep field, 3.528 acres, with a yield of 35 bushels 37 lbs. per acre, the variety being Scotch Grey. Included in the oat harvest were three plots in No. 6B, Sunrise, Scotch Grey, and Algerian Tartar. These did not yield well.

THE BARLEY HARVEST.

Some good crops were obtained, but 100 acres in Daly's B and C turned out very poor. No. only was the crop poor in itself, but we were unable to harvest fully half of the grain owing to its being deposited on the ground.

Shorthead at the rate of 70 lbs. per acre was sown along with 2 cwt. of super.

Details are as follows:—

Field.	Area Acres	Total Yield Bush. Lbs.	Acre Yield Bush. Lbs
Nottle's A	24.491	500 48	20 23
Daly's B and C	97.778	1,025 2	10 24
Experimental Field	5.929	49 47	8 21
Totals	128.198	1,575 47	12 15

THE PEA HARVEST.

One field, No. 1, was harvested for grain. It had been intended to graze it, but the abundance of feed elsewhere allowed us to harvest it for grain. There are 11.46 acres of a light limestone character. A yield of 30 bushels 44 lbs. per acre was obtained.



A Trip to Town.

—————

It has been the custom of the third-year students during the last year of their course to visit and inspect the manufacture of superphosphate at the Adelaide Chemical and Fertilizer Co., Ltd., works, situated at Thebarton. The present third-year students, who at the time of this outing, were nearing the completion of their course, had given up

all hopes of this trip and others, but on the conclusion of the diploma examinations, having several days to spare before Speech Day, the opportunity arose of making this much desired trip.

On March 27th we departed for the City; examinations were concluded the day before. We were accompanied by Mr. Phillips, lecturer in Chemistry, and Mr. Hodgson, Assistant Chemist. On our arrival at the Adelaide Railway Station we were met by the Manager, Mr. R. Burns Cuming, who had made arrangements for our procedure to the works by motor car.

On our arrival at the works we were met by the Chemist, Mr. J. G. Mossop, who immediately began the task of giving us the information we were seeking. He carefully and thoroughly explained the process from start to finish; illustrating every detail very instructively. We were all extremely interested in this complicated process; complicated no doubt it is, as was proved to us on this occasion, although when reading our lectures on this subject it appears simple and easily understood.

We were shown throughout the whole of the works, inspecting the different qualities of rock phosphate, resulting supers and bi-products. The works are large and up-to-date, and everything being carried out skilfully. One could not fail to be impressed with the attention everything is given, so that the farmer may receive an article complying with the chemical analysis, and another important point an article that is easily managed in its application to the soil.

The farmers of this State should feel grateful to have such works as this, wherein every possible consideration is given solely for their benefit.

Other places of interest were inspected such as the chemistry laboratory, engine rooms, etc. A great deal of interest was shown in the lead burning; several trying their hand at it, but absolutely unsuccessful.

We feel very grateful to have had the opportunity of making this instructive visit, and desire to thank the Company through these columns for their kindness in allowing us to inspect the works, and placing at our disposal their motor car.

We again thank Mr. Mossop for the kindly and instructive way he showed us around, and the interest he took in the party.

After lunch we visited Messrs. John Reid & Sons' tannery, and Messrs. G. H. Michell & Sons' woolscouring works at Hindmarsh.

At both places great interest was shown in the proceedings. At the tannery we were instructively shown throughout the whole process, inspecting every step, each being explained at length, from the treatment of the hides to the finished leather. No doubt we were given a good idea of the tanning industry. Our time was rather short at the wool-scouring works, and we would have liked a little longer stay, but a great deal of information was given on the subject. Mr. Michell hurriedly explained the different points in the process and kept us very interested. He also gave us other information outside the actual process of scouring, concerning the industry. We take this opportunity of again thanking these people for the interest they showed towards us; and we feel grateful to have had such an insight into the tanning and wool scouring industries.

In conclusion, I desire to thank Mr. Phillips and Mr. Hodgson, on behalf of the third-year students, for the interest they bestowed in showing us around.

F.R.

*

Old Collegians' Association.

Since the publication of the last number of the "Student," there has been considerable movement upon the Western Front of the battle line. Old Roseworthy boys have been distinguishing themselves in the fighting, two Military Crosses falling to Captains Malpas and Sandford, and the Military Medal, with a subsequent commission, to G. K. Henderson. Unfortunately, Captain Malpas, in gaining the coveted decoration, was disabled in both arms, the left one seriously. Although it may be a long time before he regains the use of this member, we wish him every hope of ultimate recovery. Captain Malpas was in command of B. Company, 27th Battalion, and the report recommending him for the Military Cross stated "That he showed great dash and resource in getting his men into an almost impossible position." He is now on duty at the Mitcham Camp, and ready to return to the front if his arm mends satisfactorily.

We heartily congratulate these recipients of the decorations.

Ivan S. Young has recently gained his commission in the Australian Flying Squadron.

Geoff. Wells also has obtained his Lieutenancy.

Lieutenant Frank Treloar has been invalided home, and we look to his complete recovery from his injuries.

D. G. Quinn still writes characteristic letters from the front, though the latest advices say that he has been hit, though but slightly.

Names of those who have enlisted are still coming to light, many having gone early in the war, others quite recently. Those which have come to me since the last publication of the "Student" are: J. Tassie, H. J. Reynolds, R. K. Lawrence, C. J. Landseer, C. F. Stephen, N. Brookman, G. K. Henderson, G. E. Roberts, K. Gardiner, F. F. Cobham, F. J. Kuhne.

Unfortunately the list of those who have paid the supreme price is lengthening, the latest addition being that of Sgts. R. M. T. Richards and R. C. Hardy, who were killed in action early in May.

W. K. Tamblyn was reported missing at about the same time.

The following is a list of those who have fallen in battle or died on service:—

W. B. Blue	A. F. McIntosh
D. A. Byard	K. D. Gordon
R. C. Hardy	R. M. T. Richards
E. M. Judell	A. H. Morphett
P. D. Killicoat	F. Inglis
A. C. Sandland	F. F. Berry
J. A. B. Stevenson	J. L. Thomson (missing)
L. G. Morrison	W. K. Tamblyn (missing)
M. Hains	

News has been received that Basil Fuller, after more than two years in the firing line, has gone into the officers' school in England. His mate, Syd. Reed, was there a few months before him, the first time they had been parted since they left South Australia.

A. J. Whiting, writing from the front, sends the accompanying paragraph, which may be of interest to those who knew the men he mentions.

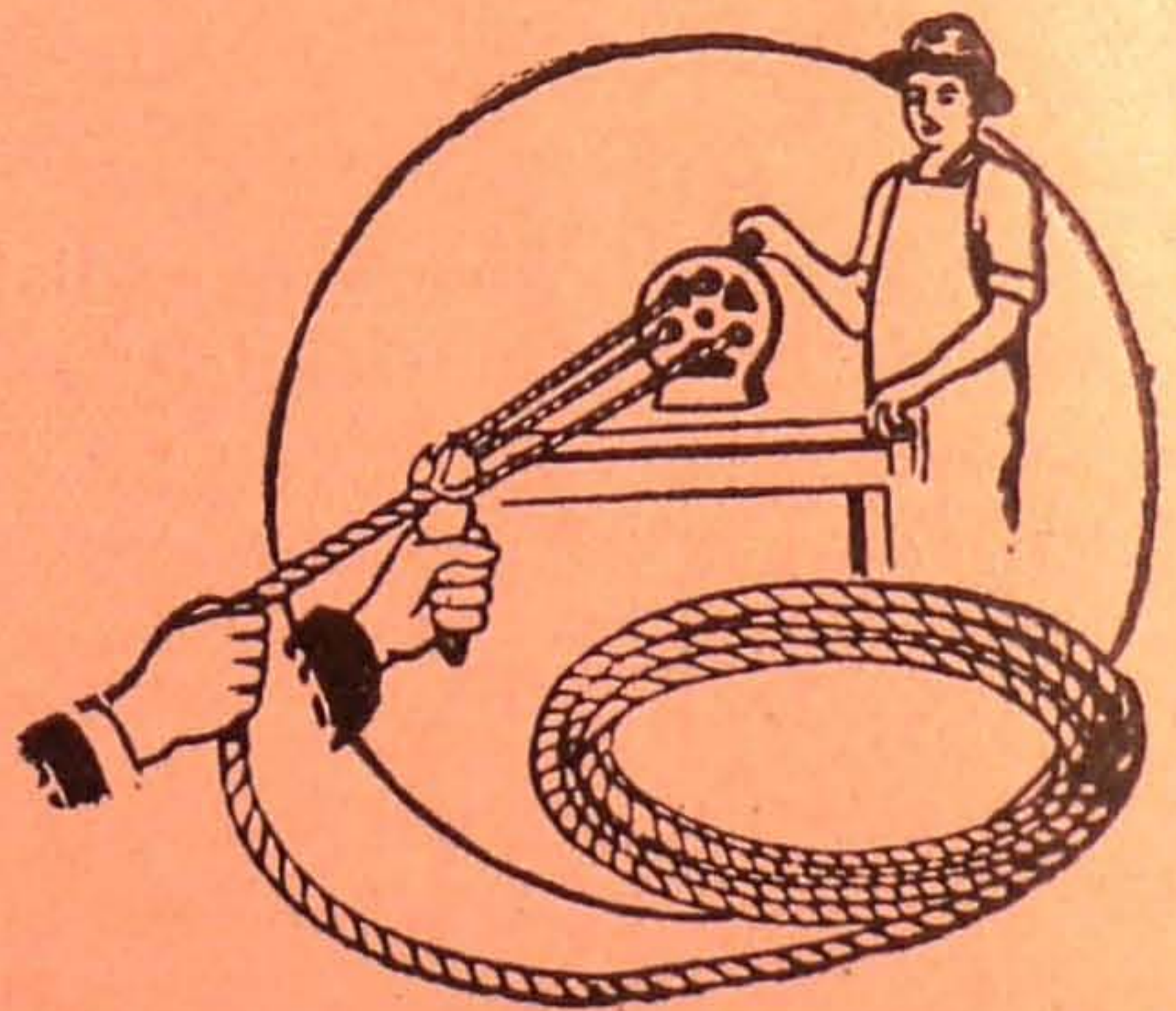
"On Friday I received a wire from Trooper W. H. Chapman, and was bewildered for the time. The only Chapman I knew I thought was in Egypt. However, it turned out to be Sandy. He has been sent to England to go in an officers' school. He met Bradshaw in Tugerschall, a small town round here, so he wired me to meet him in Tidworth. I went in on Saturday and had a great time. Sandy is a great size now, he has filled out splendidly. He has been having a great time since he enlisted. He liked Egypt very much, saw action there. He was sent to Heliopolis Hospital to get over some illness. It was great meeting him again. We had a good walk around, and went to the pictures in the evening. We were all wondering what had become of Paddy (Padman), have not been able to locate him at all.

FARMERS!

Buy a "New Era"
Rope Machine and
make your own rope

Price 21/-

All twine used for binding
your hay can be re-made
into strong rope.



The "New Era" is a great money saver. It enables you to make from binder twine all the rope you need on the farm. Instead of throwing away tangled pieces of twine or allowing odd pieces left over from harvest to dry out and depreciate, you can manufacture them into serviceable rope at a cost FAR BELOW MARKET RATES

Write for particulars.

Full directions with each machine.

A. W. DOBBIE & CO., LIMITED,
Gawler Place, Adelaide.