SOUTH AUSTRALIA.

AGRICULTURAL BUREAU DEPARTMENT.

ANNUAL REPORT

OF THE

WORK AND PROCEEDINGS

OF THE

AGRICULTURAL BUREAU

FOR THE YEAR 1893-4.

ADELAIDE:
BY AUTHORITY: C. E. BRISTOW, GOVERNMENT PRINTER, NORTH-TERRACE.

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Agricultural Bureau, Adelaide.

Sir—I have the honor to present herewith the annual report of the Agricultural Bureau for the year 1893-4.

Our journal has been more extensively distributed and is more voluminous than previously. The numerous papers read, of which a list appears in the report, deal with very many subjects, and he who brings forward in such papers a matter heretofore undiscovered or unnoticed produces an additional testimony to our unbounded but not nearly developed natural resources, and adds to the general prosperity of the community. Although these papers may in many cases contain repetitions as read at the meetings of branches, they are not generally printed in the journal, and much work is required of the secretary, and sometimes of myself, to excise from them what appears to be unnecessary repetition. Not but that you may find some repetition. In ever so many instances it seems to be absolutely necessary to harp upon the same string until the tune is well known and generally adopted. The journal is doubtless a great incentive to members of branches to prepare practical papers, which are read, and read with avidity, over the length and breadth of the province. The rural population is, perhaps, little given to the reading of light literature, but the newspapers, in which many of our reports and papers appear, and our journal furnish much food for reflection, and doubtless have given a great impetus to many rural industries and to intense and improved cultivation. The mere hearing of a paper without having it in print is seldom of much value, and consequently a large proportion of the amount voted to the Bureau is spent in printing (see financial statement at end of this report).

The members of the Central Bureau are selected on account of a general knowledge of, or acquaintance with, a special branch of agronomy, and they are frequently requested to accompany the secretary on visits to branch bureaus and elsewhere. Their visits have always proved beneficial to the residents, as well as adding to their own knowledge, but during the year under review only a few of such visits could be made, chiefly on account of the necessity for economy so strictly enjoined upon us, and partly because members could not spare the time.

The Bureau hopes that it will be possible to hand over the Old Exhibition Grounds, with a small vote, to the Botanic Garden, so that Mr. Holtze may replant therein the vines (about 100 varieties), in his charge, and an assortment of correctly named fruit trees, by which means we may hope to put an end to the great confusion in the nomenclature of fruits which now exists. Wax models are expensive and not sufficient for the purpose.

In conclusion, I express the hope that, as Minister of Agriculture, you will acknowledge that the amount spent by the Bureau has advanced the general interests of the province, as well as of the rural population, and that the time is close at hand when a larger sum for "contingencies" can be voted to encourage by a subsidy of pound for pound the amounts collected by the branches for bureau purposes. Such a subsidy, in my opinion, would be as legitimate, and probably far more useful, than the grant to agricultural societies.

I have, &c.,

F. KRICHAUFF, Chairman Agricultural Bureau.

To the Hon. the Minister of Education and Agriculture.

MEMBERSHIP AND ATTENDANCE.

On January 6th, 1894, the Hon. Minister of Agriculture was pleased to appoint Mr. W. C. Grasby, F.L.S., editor of the *Garden and Field*, and now headmaster of the Roseworthy Agricultural College, as a member of the Central Bureau.

On January 29th Mr. Samuel Goode was granted six months' leave of absence on account of his projected visit to England.

During the year twenty-four ordinary meetings, with an average attendance of 7·5 members, have been held; in addition three special mettings have also been held.

The following is a record of the attendance of the different members at ordinary meetings during the year:—

Names of Members.	Meetings Present.
Mr. F. Krichauff, Cor. Memb. R.H.S. (Chairman)	23
Mr. A. Molineux, F.L.S., F.R.H.S. (Secretary)	23
Sir Samuel Davenport, K.C.M.G.	16
Mr. W. C. Grasby, F.L.S.	7
Mr. Samuel Goode	12
Mr. Thos. Hardy, J.P.	15
Mr. M. Holtze, F.L.S.	11
Mr. R. Homburg, M.P.	0
Mr. H. Kelly, J.P.	17
Mr. W. Lowrie, M.A., B.Sc.	4
Mr. A. J. Perkins	2
Mr. A. W. Sandford, J.P.	17
Mr. W. F. Snow	17
Mr. C. J. Valentine	16

On June 18th, 1894, it was decided, at the almost unanimous wish of the branches, to increase the maximum number of members allowed to each branch from twelve to fifteen.

The following return gives the number of meetings held by each branch, average attendance of members, number of visitors at meetings, and number of papers read and discussed:—

Branch.	No. of Members.	Meetings Held.	Average Attendance.	Total No. Visitors.	Papers Read.	Branch.	No. of Members.	Meetings Held.	Average Attendance.	Total No. Visitors.	Papers Read.
Aldgate	12	12	6	54	5	Mount Pleasant	12	10	6	*—	1
Angaston	11	11	6	9	4	Mundoora	12	11	9·1	6	—
Appila-Yarrowie	12	7	9	7	3	Nantawarra	12	12	8·5	*—	1
Arden Vale	11	11	7·36	7	6	Naracoorte	11	9	6·5	*—	7
Arthurton	12	10	9·2	*—	1	Narridy	12	13	8·15	10	—
Auburn	12	8	7	1	Nil	Orroroo	—	6	9·6	6	3
Balaklava	12	8	7·3	1	3	Paskeville	12	12	7·75	—	—
Baroota Whim	12	9	7·6	17	4	Penola	12	4	5	4	2
Burra	9	3	5	4	Nil	Petersburg	12	11	8·5	19	2
Bute	12	13	9	45	4	Pine Forest	12	10	7·2	6	2
Carrieton	12	6	7	*—	2	Port Broughton	12	11	8	*—	2
Caurnamont	12	9	6	4	3	Port Elliot	11	12	6·5	7	2
Cherry Gardens	12	14	10·5	*—	1	Port Germein	12	6	9	15	2
Clare	12	11	9	7	1	Port Lincoln	12	8	9	*—	5
Clinton Centre	12	9	5	6	2	Port Pirie	12	5	6·8	2	—
Colton	8	4	6	2	2	Punyelroo	10	3	14·3	1	—
Davenport	9	7	5	3	1	Quorn	10	4	6·25	1	2
Dawson	12	10	7	4	2	Redhill	10	9	7·5	*—	1
Eudunda	12	11	6·4	7	2	Renmark	10	5	5	*—	1
Finniss	10	12	5·9	2	Nil	Richman's Creek	12	8	9	*—	Nil
Gawler River	11	11	8	*—	2	Riverton	12	12	7·5	2	1
Gladstone	12	11	6	*—	1	Robertstown	10	12	7·1	*—	—
Golden Grove	10	10	6·1	8	1	Snowtown	12	1	10	*—	—
Gumeracha	12	10	7·8	2	6	Stansbury	12	11	8·7	15	—
Hanhdorf	12	4	9·25	*—	—	Stockport	12	12	6·5	17	3
Hartley	12	8	7·25	68	1	Strathalbyn	12	9	8	8	4
Hawker	11	10	5	2	1	Tanunda	12	12	10	6	7
Jamestown	12	9	6·46	1	1	Tatiara	12	11	6·4	*—	2
Kadina	12	6	6·5	2	1	Terowie	†—	†—	†—	†—	†—
Kanmantoo	12	9	5·8	1	2	Upper Sturt	‡—	‡—	‡—	‡—	‡—
Lyndoch	12	8	7·25	*—	2	Warooka	10	9	5·44	3	—
Maitland	12	10	7·2	5	4	Warrow	11	9	6·1	3	1
Mannum	10	1	7	*—	—	Wasleys	12	10	7·5	*—	4
Meadows	12	10	7·6	26	4	Watervale	12	9	9	*—	2
Melrose	†—	†—	†—	†—	†—	Willunga	12	1	6	1	—
Milang	12	9	7·6	6	1	Wilmington	12	8	8	—	—
Millicent	12	11	6·6	1	Nil	Woodside	12	8	7·75	6	4
Minlaton	12	11	8·4	11	1	Woolundunga	12	3	6	—	1
Mount Bryan East	10	9	5·66	*—	1	Yacka	10	12	5·75	1	2
Mount Gambier	12	12	9	12	5	Yorketown	10	8	6·5	—	—

* Not recorded. † No meetings held. ‡ No meetings held. Branch re-formed.

During the year under review branches of the Bureau have been established at Milang, Mount Bryan East, Bute, Baroota Whim, Hartley, and Woolundunga—an increase of six during the year. There are now eighty-two branches of the Bureau, but of these four—namely, Melrose, Onetree Hill, Stirling East, and Terowie—have ceased working and one or two others are "sleeping."

THE BUREAU AND THE PRESS.

The Bureau has again been greatly indebted to the proprietors of the Adelaide daily and weekly papers, who have published in their pages such of the doings of the Bureau as are of interest to their readers. The proprietor of the *Garden and Field* has again allowed us to distribute through the means of his paper reports of our work free of charge, and the Bureau is greatly indebted to him for allowing us this privilege. Most of the country papers now take an interest in the work of the Bureau, and many of them publish reports of the meetings of the branches held in their respective districts.

PUBLICATIONS.

We now receive and exchange publications with the Departments of Agriculture in New South Wales, New Zealand, Queensland, Tasmania, Victoria, Western Australia, United States of America, Canada, British Columbia, Nova Scotia, and Sweden; the State Board of Horticulture, San Francisco; the Royal School of Agriculture

Agriculture, Portici, Italy; the Nebraska University Agricultural Experiment Station, U.S.A.; Agricultural College, Wageningen, Netherlands; Chamber of Rural Industries, Melbourne; Agricultural Board, Cyprus; and Board of Viticulture, Melbourne. We also exchange publications with twelve intercolonial and foreign agricultural papers, as well as with a number of scientists and others throughout the world who are interested in agronomy.

During the year we have printed and distributed the following publications:—

The journal of the Bureau issued each month, with an average circulation of 1,150 copies, is also printed as portion of the *Garden and Field*, with circulation of.....	Above 2,000 copies monthly
Annual Report for 1892-3	2,000 copies
Ensilage	2,500 "
Insect and Fungus Pests	5,000 "
Fifth Congress Report	2,000 "
Select List of Fruit Trees.....	3,000 "
Report of Branch Conferences	1,650 "
Profitable Pig-breeding	650 "
Destruction of Rabbits	650 "
Lemon-curing for Market.....	750 "

We have distributed the greater portion of these, but have some of each still available for distribution. Copies will be posted to anyone desiring same on receipt of stamp to cover postage. We have also still on hand about 1,000 copies of "The South Australian Vinegrower's Manual," which are for distribution. All publications printed by the Bureau are for free distribution, but when persons desire to have them posted they are required to pay the postage, as our funds are too small to allow of our posting them free. To do this would mean an additional expenditure of probably over £20 per annum.

During the year 130 papers upon practical subjects have been read and discussed at meetings of the Central and Branch Bureaus against ninety-eight last year, and sixty-eight the year before. The majority of these papers have been printed either in full or in abstract in the Bureau journal, and many of them in the daily and weekly papers. Some of them have also been reprinted in the agricultural papers in different parts of Australia.

The following is a list of the papers read during the year:—

"A Plea for Green Fodder against Bare Fallow," Mr. Krichauff (Central)
"Artificial Manures," Mr. H. Schmidt, Tanunda
"Thrashing Machines," Mr. L. Judell, Orroroo
"Cost of Wheat-growing," Mr. W. H. Hawke, Arthurton
"How to Make Farm Life Attractive," Mr. W. G. F. Plummer, Caurnamont
"Takeall," Mr. R. Rankine, Stockport
"Sheep on Farms," Mr. R. H. Williams, Jamestown
"Vines for Raisins and Currants," Mr. C. G. F. Bauer, Appila-Yarrowie
"Gumming of Cherry Trees," Mr. T. G. Oinn, Aldgate
"New Pruning of Vines and Phylloxera," Mr. F. Krichauff
"Profitable Pig-keeping," Mr. G. T. Griggs, Meadows
"How to Make Farming Pay," Mr. J. Downing, Kanmantoo
"Commercial Manures," Mr. J. Brock, Tanunda
"The Agricultural Outlook," Mr. R. Caldwell, Woodside
"Best Fruits for Mount Gambier District," Mr. A. J. Wedd, Mount Gambier
"Codlin Moth," Rev. H. T. Hull, Mount Pleasant
"Pruning," Mr. J. Johnson, Gawler River
"Fallowing," Mr. D. G. Stribling, Stockport
"Pigs and Frozen Pork Export," Mr. Krichauff
"Pickling Wheat," Mr. F. J. Provis, Port Lincoln
"Tree Planting," Mr. S. Valentine, Port Lincoln
"Suggestions for Increasing the Usefulness of the Bureau," Mr. W. Forrest, Wasleys
"Payable and Attractive Farming," Mr. W. G. Mills, Kanmantoo
"Cost of Wheat-growing," Mr. J. Andrewartha, Arthurton
"Best Dairy Breed," Mr. S. Potter, Lyndoch
"Flax Cultivation," Mr. J. G. Dickson, Port Germein
"Plants for Green Fodder," Mr. Krichauff
"Fallowing," Mr. M. Eckert, Arden Vale
"Improvements in Fords and Crossings," Mr. A. Hannemann, Arden Vale
"Cost of Wheat Cultivation," Mr. W. Laidlaw, Warrow
"Vine Planting and Pruning," Mr. E. J. Hector, Port Pirie
"Potatoes," Mr. J. Brock, Tanunda
"Potatoes," Mr. F. Wheaton, Redhill
"Future of Fruit-growing in South Australia," Mr. F. J. Fisher, Renmark
"Vine-growing," Mr. J. B. Barrand, Port Lincoln
"Notes on Bees," Mr. W. G. Clough, Aldgate
"Necesssity for United Yeomanry," Mr. J. Smith, Hawker
"Fruit-growing from a Factory Standpoint," Mr. George Sage, Angaston
"Co-operation," Mr. N. Hannagan, Appila-Yarrowie
"How to Keep Up the Milk Supply," Mr. J. McGilchrist, Naracoorte
"Farmers Co-operative Union," Mr. W. H. Byerlee, Carrieton
"Manures," Mr. D. Connor, Meadows
"Bare Fallow," Mr. W. Sharman, Bute
"Grafting Vines," Mr. J. C. Gelly, Tanunda
"Sisal Hemp," Mr. F. Krichauff
"Improvement of Cattle," Dr. F. Ockley, Penola
"Ensilage," Mr. G. Touchell, Pine Forest
"Increasing Usefulness of Branch," Mr. W. L. Brown, Colton
"Alderney Cows and the Separator," Mr. E. Goodridge, Petersburg
"Best Breeds of Dairy Cattle," Hon. J. L. Stirling, Strathalbyn
"Preservation of Manure," Mr. J. Tucker, Maitland
"Freezing Works," Mr. R. Fawcett, Davenport
"Vegetable Growing," Mr. H. Wright, Meadows
"Wheat-growing," Mr. J. Brown, Port Elliot
"Summer Fodder," Mr. J. Magarey, Naracoorte
"Rape Cultivation," Mr. F. Krichauff
"Mixed Farming," Mr. J. L. Watson, Baroota Whim
"Manures," Mr. H. R. Antuar, Aldgate
"Leguminous Plants," Dr. F. Ockley, Penola

"Best Varieties of Fruits," Mr. G. Hunter, Watervale
"Agriculture," Mr. Hogan, Stockport
"Drainage," Mr. W. Cornish, Gumeracha
"Farming," Mr. A. Wight, Bute
"Cultivation of Scrub Lands," Mr. W. G. F. Plummer, Caurnamont
"Locust Oil," Mr. A. A. Wicksteed, Golden Grove
"Manufacture of Brandies from Potatoes, Beetroot, and Molasses," Mr. J. C. Gelly, Tanunda
"Possibilities of Flax-growing," Mr. J. G. Dickson, Port Germein
"Hemp and Ramie," Mr. J. G. Dickson, Port Germein
"Crops for Hay and Green Feed," Mr. W. H. Hughes, Aldgate
"Potatoes," E. Esau, Woodside
"Artificial Manures," Mr. J. O'Shanahan, Port Lincoln
"Forest Tree Culture," Mr. J. Watson, Mount Gambier
"Dairy Farming," Mr. W. Hannaford, Gumeracha
"Agricultural Shows," Mr. G. A. Dicker, Yacka
"Harvesting," Mr. J. Smith, Stockport
"Improvement of Dairy Cattle," Mr. T. E. Yelland, Bute
"Rape Cultivation," Mr. T. Best, Mount Bryan East
"Rotation of Crops and Manuring," Mr. F. Krichauff
"Hedges and Fences." Mr. F. W. Stephen, Petersburg
"Horticulture," Mr. C. H. Meyers, Dawson
"Renmark and Mildura," Mr. J. C. Gelly, Tanunda
"Creameries and Butter Factories," Mr. W. Brook, Hartley
"How to Clear Land of Wild Oats and Weeds," Mr. J. Correll, Minlaton
"Bunted Wheat," Mr. A. Hannemann, Arden Vale
"Co-operation," M. D. Sissman, Wasleys
"The Present Aspect of Farming," Mr. W. G. F. Plummer, Caurnamont
"Packing Grapes for Export," Mr. H. J. Davidson, Gilberton
"Mixed Farming," Mr. J. H. Yelland, Milang
"Cultivation of Asparagus," Mr. F. Krichauff
"Co-operation Amongst Producers," Mr. C. Ricks, Cherry Gardens
"Bee-keeping," Mr. H. Roediger, Gawler River
"Pigs and Pig-breeding," Mr. E. T. Knoth, Eudunda
"The Sheep for the Farmer," Mr. E. Barrett, Lyndoch
"Bee-keeping," Mr. G. Schick, Tanunda
"The Most Profitable Fruits for Naracoorte District," Mr. A. Johnstone, Naracoorte
"Drilling Wheat," Mr. D. McNaughton, Orroroo
"Black Rust in Wheat," Mr. McEckert, Arden Vale
"Pigs," Mr. W. G. Clough, Aldgate
"Articles for Home Use which can be Produced on the Farm," Mr. J. L. Watson, Baroota Whim
"Marketing and Utilisation of Fruit," Mr. S. Ridler, Gumeracha
"Comparative Values of White and Brown Bread," Mr. C. W. Smith, Stockport
"Management of Pigs," Mr. H. Knight, Tatiara
"The Advantages of Creameries," Mr. N. Rogers, Woolundunga
"The Most Useful Mutton Producing Sheep for the South-East," Mr. Thos. Brown, Naracoorte
"The Benefit of the Land Roller," Mr. J. M. Cadzow, Orroroo
"How to Procure and Retain Good Clean Wheat for Seed Purposes," Mr. C. Pearce, Arden Vale
"Harrowing," Mr. A. Hannemann, Arden Vale
"Judging Stallions," Mr. H. S. Mackley, Pine Forest
"Composition of Soils," Mr. N. Opie, Dawson
"Poultry," Mr. J. G. Folland, Wasleys
"Tree Culture," Mr. W. R. Whittaker, Port Broughton
"A Few Things that should be Grown on every Farm," Mr. W. Bennier, Port Broughton
"Kale and Mangolds," Mr. H. C. C. Schmidt, Tanunda
"How to make our Bureau Attractive and of Benefit to the District," Mr. M. S. W. Kenny, Colton
"Destruction of Rabbits," Mr. T. Watson, Gumeracha
"Dairying in Victoria," Mr. R. Caldwell, Woodside
"Profitable Pig-breeding," Mr. T. E. Yelland, Bute
"Gum Resin of Grass Tree," Mr. A. Molineux
"The Effect of Mildura and Renmark upon Our Markets," Mr. S. O. Smith, Angaston
"The Farming of the Future," Mr. M. Searle. Arden Vale
"Lathyrus Silvestris," Mr. E. Feuerheerdt, Naracoorte
"Fallowing," Mr. J. Tonkin, Gladstone
"Codlin Moth," Mr. A. Molineux
"Lemon-curing for Market," Mr. A. Molineux
"Tuberculosis," Mr. C. J. Valentine
"Takeall," Mr. J. C. Meyers, Nantawarra
"Crossbreeding of Stock," Mr. E. Esau, Woodside
"How to Occupy Land Profitably," Mr. J. M. Grant, Appila-Yarrowie
"Poultry," Mr. A. Dixon, Baroota Whim
"Co-operation," Mr. H. A. Davis, Riverton.

FIFTH CONGRESS.

The fifth congress of the Bureau was held in the library of the Chamber of Manufactures, North-terrace, on February 28th and March 1st, 1894. The Hon. the Premier (Hon. C. C. Kingston, M.P.) opened the proceedings, and the chairman of the Bureau gave an introductory address. There were present nine members of the Central Bureau, thirty-four representatives of twenty-five branches, together with a number of visitors.

The following papers were read and discussed:—

"The Sparrow Nuisance, and its Remedy"
"Binder cum Stripper"
"Changing Seed"
"Progress of Dairying in South Australia"
"Manufacture of Condensed Milk"
"How to Clear Land of Wild Oats and Weeds"
"The Advisability of Prohibiting the Importation of Vines, Fruit Trees, and other Plants"
"The Condition of Agriculturists and the Possibility of Improvement"
"A Point of Central Bureau Government"
"How Best to Increase the Usefulness of the Bureau"

The subject of the fixing of the weight of the standard bushel of wheat was also discussed.

BRANCH

BRANCH CONFERENCES AND SHOWS.

During the year under review several local conferences of branch bureaus, with shows of farm and orchard products and home manufactures, have been held.

On March 7th and 8th a conference of the Mount Gambier, Millicent, Naracoorte, Penola, and Tatiara branches was held at Mount Gambier, when the following papers were read and discussed:—

"Dairying"
"Root Crops and their Cultivation"
"Insects and Insect Life"
"Viticulture"
"Root-growing in the South-East"
"Co-operation"
"Marketing and Utilisation of Fruit."

On March 13th a conference of branches was held at Gladstone, when representatives from the Central, Gladstone, Port Pirie, Petersburg, Appila-Yarrowie, Carrieton, and Yacka bureaus attended. Papers on the following subjects were read and discussed:—

"Bunt in Wheat"
"Dairying and Ensilage"
"Disease of Vines"
"Articles that can be Produced on the Farm"
"Marketing and Utilisation of Fruits"
"Experiments with Wheat."

On March 15th a conference of Far Northern branches was held at Quorn, when representatives from Central, Davenport, Woolundunga, Richman's Creek, and Arden Vale bureaus were present. Papers on the following subjects were read and discussed:—

"Ensilage"
"Spaying Cattle"
"Summer Treatment of the Vine in the North"
"The Farmer of the Future"
"Irrigation and Water Conservation"
"Dairying"
"Value of Tree Leaves as Fodder"
"Preserving and Marketing Fruits"
"Change of Seed."

On April 11th a conference of the Yorke's Peninsula branches was held at Kadina. Representatives from the Central, Arthurton, Bute, Kadina, Paskeville, Port Broughton, and Pine Forest bureaus attended. Papers upon the following subjects were read and discussed:—

"The Agricultural Bureau: its Uses and Value"
"Preparation of Seed for a Wheat Crop"
"Farmers' Co-operative Union"
"Bureau Government"
"Vine-planting and Early Crops"
"Fruit Tree Planting"
"A few Evils the Farmer has to Contend with."

On April 30th a conference of the Southern branches of the Bureau was held at Strathalbyn. Representatives from the Central, Strathalbyn, Hartley, Kanmantoo, Port Elliot, Cherry Gardens, Finniss, Milang, and Woodside bureaus were present. Papers upon the following subjects were read and discussed:—

"Frozen Meat Trade"
"Sparrow Pest"
"Separation of Milk by Horsepower"
"Hints to Farmers"
"Ensilage."

On March 21st a conference of the Lower Northern branches was held at Auburn. A show of products and industries was held in connection with this, and addresses upon various subjects were delivered. In addition to these united meetings the branches at Nantawarra, Narridy, Meadows, Clare, Port Lincoln, and Port Broughton, Mundoora and Pine Forest (combined) have held local shows of farm products and home manufactures. In most cases social gatherings have been held in connection with these shows.

The branches at Arthurton, Minlaton, and Port Broughton, Mundoora and Pine Forest (combined), have held public trials of stump-jump paring ploughs and other implements. The Stansbury branch held a public trial of spray pumps.

VISITS BY THE BUREAU.

During the past year the visits paid by members of the Central Bureau to farms, gardens, factories, &c., for the purpose of giving advice on practical matters have not been so frequent as they should be owing to the smallness of the funds at the disposal of the Bureau.

The practice of holding meetings of branches at members' homesteads is being adopted by many of the branches. Some meet regularly at members' homes, while others make it only an occasional practice. Such meetings are bound to prove beneficial, and might be adopted by other branches with advantage. A number of members of the branches have also visited the Roseworthy Agricultural College, and invariably come away impressed with the advantages of farming on scientific principles.

MARKETING AND UTILISATION OF FRUIT.

It is satisfactory to be able to state that a firm in Adelaide has commenced the manufacture of fruit crates as used in California, and has also opened up a trade in the berry baskets which are so universally used in the large cities of Europe and America for packing the more tender fruits. By the adoption generally of these berry baskets and crates bruising of fruit is prevented, and by avoidance of losses through bruising the growers are able to sell at lower prices with profit, whilst the consumers enjoy the flavor of sound cheap fruit, and use it regularly. As there is every probability that there will be an enormous increase in the quantity of sound good fruit next season—owing first to the fact that the majority of growers have nearly conquered the fungus and insect pests which formerly destroyed their crops, and secondly to the

circumstance

circumstance that last year's crops in one of the principal centres of production were destroyed when half grown by a hailstorm, thus reserving the vital energies of the trees for the next season—it involves anxious consideration as to what shall be done with the surplus.

First, we have to look to outside markets to relieve us of a deal of our surplus, and here we are confronted with prohibition in some of the colonies on account of a pest which has never yet existed in South Australia—the phylloxera, and which we have been very strict in the endeavor to exclude, and on account of excessive protective duties. The more distant markets are open to us, but the freight, agencies, and risks are much against us. These difficulties, however, may be overcome to some extent. There seems to be every probability that fruit, if properly graded and packed, can be sent in the hold of the vessel as ordinary cargo, provided that the hold is thoroughly ventilated. We can pack fruit in our cellars and keep it in perfect condition for several months, and we fail to see why the same fruit should suffer in the hold of a vessel if it is not subjected to heat, foul air, and a close moist atmosphere.

It has been stated that good fruit pulp is saleable at satisfactory prices in the large towns of Great Britain, where it is used by confectioners, pastry cooks, and others. This is worthy of inquiring into.

Canning of fruit for export does not appear to offer very bright prospects. If very select and superior there is money to be made in the business, but a second-grade stuff will not sell at profitable rates. Home-made jams, jellies, and preserves are being made on a moderate scale by a few farmers and fruitgrowers, and, being of very superior quality, the local demand exceeds the supply.

By using the American paring, coring, and slicing implement it is easy and economical to treat large quantities of apples, pears, peaches, and quinces for drying, either by sun or fire heat. Very young children, even, can be employed in this work, and if ordinary care and cleanliness is observed, and the fruit nicely graded and packed, there should be a profitable outlet for a large quantity of fruit in this form.

Plums, raisins, and currant grapes, and several other fruits can be utilised by desiccation. Several tons of so called "prunes," but chiefly plums, have been put upon the market from last year's crops. Some of these were of very superior quality and were preferable even to the imported French prunes, being more tender, meaty, fresher, sweeter, and having a nicer flavor; but the greater part showed want of knowledge and care in the drying and packing. The fruit must be gathered when perfectly ripe, and not all at once—green, half ripe, ripe, and over-ripe; it must be graded on to the trays, else the small plums will be "dried to death" while the large ones will not be dry enough. When dry it spoils the fruit to pack it in a dirty bag, as it gets covered with fluff, chaff, or whatever may have been in the bag previously. Some of the best of last season's plums, well dried, sold at 8d. per pound retail, whilst French prunes sold at 1s. 9d. per lb.

A good many householders as well as growers have taken to providing supplies, all the year round, of various fresh fruits by canning in pure water or weak syrup. The process is so simple and effectual that any one can preserve plums, gooseberries, apricots, peaches, cherries—indeed any kind of fruit or vegetable—as easily as they can cook a chop or boil an egg. This plan is almost universally adopted by the rural population of American States, and our colonists would do well to generally follow the practice also. They can also can maize (or "green corn"), beans of many sorts, peas, asparagus, and other vegetables, clams, oysters, and any other things which are not in season or procurable all the year round. The process is simply to place the articles to be preserved in "self-closing" cans, of suitable size, fill up with weak brine, weak syrup, or even pure water in the case of acid fruits; place these filled cans in a vessel of water nearly to their tops, bring to a boil, and let boil for five minutes; then force on the "self-closing" lids, take off the fire, let cool, turn cans upside down, leave till next day. Any that show signs of leakage must be done over again as before.

EDUCATIONAL AND EXPERIMENT GROUNDS.

We are of opinion that the establishment of an orchard and vineyard for educational and experimental purposes would be of great value. The superintendent should be thoroughly acquainted with all that pertains to horticulture and capable of instructing classes of young people.

The art of pruning and cultivating fruit trees is properly understood by but few in South Australia, and yet the quality and quantity of fruit and the healthy condition of trees is almost entirely dependent upon good pruning and cultivation. In regard to nomenclature our growers are most deplorably and hopelessly involved. One variety of fruit may be known by a dozen different names by various growers, and the fruit to which one or other of those names properly belongs will again be known to different growers by several names, and so on to the end. About fifty acres would suffice for a good garden where experiments could be conducted, standard varieties true to name established, and where young people could be instructed in horticultural work. The products from the orchard could be utilised, and would bear part of the cost of maintenance, while the balance would be more than repaid to the community in the beneficial results to our horticulture generally.

THE VITICULTURAL INTEREST.

Vine-planting has received a check from several causes, the principal one being the lower price paid for inferior and heavy bearing varieties, another being the fear of phylloxera since its discovery at Bendigo last year. It is satisfactory to know, however, that nearly all this year's planting is of the Carbenet, Malbec, and Shiraz varieties, and that the danger of the introduction of phylloxera is much less since the stringent regulations issued by the Government on the recommendation of the Central Bureau have been put in force.

It is hoped that the establishment of the London Wine and Produce Depôt will materially help the wine industry by ensuring that no wines will be allowed to leave it unless they are in proper condition and with a guarantee of purity.

The establishment of a brandy distillery at Nuriootpa by Messrs. Tolley, Scott, & Tolley helped to get rid of a large quantity of inferior grapes, and there is room for further extension in this direction.

Our Government Viticulturist (Mr. A. J. Perkins, Diplomè de Montpellier) has done splendid work since his arrival amongst us, both by precept and example. In conjunction with our branches at Clare, Watervale, and Auburn he has conducted classes of young men through a session of practical vine-pruning, and he has also done yeoman service in lecturing upon viticultural and oenological subjects throughout the colony, whilst at every opportunity he has given practical demonstrations in the art of pruning, trellising, and cultivating the grape vine. His services in these directions have been universally appreciated, and a great deal of valuable information has been acquired by farmers and others who would otherwise have continued their erroneous practices for perhaps many years to come.

PHYLLOXERA-

PHYLLOXERA-RESISTANT VINES.

The occurrence of the phylloxera insect upon grape vines, first at Geelong, Victoria, then in the Camden district of New South Wales, and latterly again in Victoria, near Bendigo, has created great anxiety amongst the vinegrowers of South Australia, and the Agricultural Bureau has naturally devoted a good deal of attention to the subject. The first necessary step appeared to be to prevent if possible the introduction of the pest into South Australia, and the next to provide in every way for the mitigation of the evil should it unfortunately become established here. Quite four years since a quantity of seeds of native phylloxera-resistant grape vines were procured through the State Forest Department of America, and at various times since then. Baron Sir Fred. von Mueller, K.C.M.G., F.L.S., &c., Government Botanist of Victoria, has most generously sent us seeds of both the Californian native vines and hybrids between those species with varieties of *Vitis vinifera* (European grape vine). Those seeds have been distributed amongst the members of our branches who were judged to be likely to devote their best attention to them; and, as a result, a considerable number of seedling vines were raised and distributed amongst other members and vinegrowers. Notably, Mr. Oliver Hunt, of Naracoorte branch; Mr. Walter Gill, Conservator of Forests; and Mr. M. Holtze, Director of Botanic Garden, have raised numbers of thes vines.

A great deal of most valuable information concerning both the phylloxera insect and phylloxera-resistant and other native Californian grape vines has been given by Professor A. J. Perkins. Our chairman (Mr. F. E. H. W. Krichauff. Cor. Memb., R.H.S.) has gleaned a deal of useful knowledge concerning tke Californian vines both from the Department of Agriculture, Cape Colony, and from German and other Continental scientific literature which he has kindly translated and condensed for the use of the Agricultural Bureau.

It is important to remember that all of the Californian species of grape vines are liable to attack by *Phylloxera vastatrix*, that many are quite subject to injury from that insect, that others are only partially resistant, whilst only a few of them are reputed to resist the attacks of this pest without being injured. Again, some of those that are resistant will not thrive on limestone or calcareous soils, and of the limited number left to select from only two or three produce occasionally a variety producing a stem of sufficient diameter to allow of being grafted with scions from *Vitis vinifera* (European grape vine). There is no certainty whatever that the seeds of hybrids between European and Californian vines will produce phylloxera-resistant vines, nor that the fruit therefrom will be either abundant or produce wine with any good character.

Again, if seeds of any particular species were to be introduced for propagation to furnish stocks to be grafted with European vines the greatest care would need to be taken to secure them from the pure species required uncontaminated with the pollen of other species which might happen to be growing near the parent vines. If such seeds should be secured, it would most probably be found that only a very small proportion would produce vines of sufficient stoutness of stem to allow of being grafted; but, provided that such a vine may be found amongst the multitude, then it would probably be easy to reproduce the type to any extent by means of cuttings, layers, and single buds or eyes in a nursery. It has been the experience, however, in respect to some varieties of Californian native vines that it is extremely difficult to multiply the species by means of cuttings.

SPRAYING FRUIT TREES.

As an outcome of the strong recommendations made by the Central Bureau of Agriculture, nearly every fruitgrower in the Angaston, Tanunda, and Nuriootpa districts, and very many growers in other districts last season, adopted the spraying of fruit trees with fungicides and insecticides for the suppression of the numerous pests with which they have lately been afflicted. The results have most completely justified the recommendations, although unfortunately a heavy hailstorm occurred in the Angaston district and destroyed most of the fruit trees when a little more than half grown. In other parts, where trees were sprayed properly, the fruit was nearly free from disease and the average yield of clean fruit was increased from a few pounds to four or five bushels per tree, at a cost for fungicides and labor of less than 1s. 6d. per tree. The peach aphis and various scale insects have not been so successfully dealt with in all cases, mainly because the proper remedies were not applied, or, if applied, were not applied in the proper way. It is no use to apply an insecticide for suppressing a fungus, or a fungicide for the destruction of an insect. Then, again, the insecticide which would destroy a gnawing insect will not hurt one which is provided with a sucking tube. The same distinctions must be made in respect to parasitic fungi, which are also divided into two classes, each requiring different treatment. Yet once again, many people try vainly to make the syringe or squirt do duty as a spray pump, or neglect to keep their spraying material sufficiently agitated to retain the heavier portions in suspension, so that these matters sink to the bottom and the last trees sprayed get an excessively heavy dose of the chemical solution, while those first sprayed get scarcely anything but water. All of these erroneous practices are continually being followed by a few of our horticulturists, despite the free distribution by the Bureau of pamphlets giving most exact directions how to make and apply the necessary mixtures.

PESTS AND DISEASES.

Additionally to many hundreds of personal inquiries at the office, and numerous written ones, there have been no less than 317 references in our journal during the past year to 110 varieties of pests and diseases connected with live stock, farm, and garden crops, &c.

Diseases of Plants.—Anthracnose, or black spot on vines, has been most successfully treated in a great many cases with a solution of 7lbs. of sulphate of iron and 3ozs. of sulphate of copper (or in lieu of sulphate of copper ½lb. of sulphuric acid) in 1gall. of water applied, after pruning, to all remaining growth of the previous season. This appears to be an excessively strong mixture, but has been completely effective without injury to the vines; whilst weaker applications have been more or less ineffective. *Fusicladium* (or scab) on apple trees has been most successfully combated with strong dressings during winter, and weaker in spring, of Bordeaux mixture; but the variety which preys upon pears has not been quite so amenable to similar treatment in all cases. *Phyllostica circumscissa* (shothole) and *Exoascus deformans* (curl-leaf) have also been successfully combated with Bordeaux mixture. *Puccinia pruni* (plum rust), *Glœosporium versicolor* (bitter rot of apples), *Urocystus occulta* (black rust on wheat), *Urocystus betæ* (beet rust), potato blister, rust on lemon, loquat, and mulberry leaves, gumming of cherry trees, white rust on cruciferus plants, club-foot, takeall, and many other fungus diseases have been observed and dealt with as far as possible.

Insect Pests.—The plague of "springtails" on lucern and other herbage has slowly expanded from Morphettville, and may now be found as far north as Woodville, and south and east as far as Clarendon and Glen Osmond. Red spider seems to exist all over the colony, and vegetable crops and fruiterers suffer severely through their attacks. Gas-lime, sulphur, and several other things have been tried with a certain amount of success for the insects upon the lucern and other herbage; but the red spider makes itself impregnable, except for the first few days after hatching, against spray compounds by covering itself with a silken web. Aphides of numerous species appear to be increasing alarmingly. One species attacks chrysanthemums; another kills the young growth of orange trees; but the worst species is that which is found upon the roots and young growth of peach and nectarine trees and destroys them unless promptly dealt with. The remedy so far found to be the most effectual is a decoction made with 1oz. of tobacco in 1gall. of boiling water. The roots for about 1ft. round the trunk should be bared in July or August and 1gall. of the decoction poured on them; the earth should then be removed and fresh earth be placed round the tree; spray with kerosine emulsion to destroy the insects upon the buds and branches. It is advised also to place a bandage round the stem, and smear a portion of it all round with a "stickfast" made by melting pulverised resin in boiling linseed oil. The caterpillar pest in the South-East still appears in places, and the means adopted to cope with it have been both weak and ineffectual. As these insects march in procession it would probably be within the power of the inhabitants of the affected districts to prevent much of the damage done if they were to unite in destroying them. Flocks of sheep might be driven over the hordes; trenches could be ploughed across their line of march, and the caterpillars caught in pits dug in the trenches; broadcast spraying machines might also be used. Codlin moth unfortunately has spread over a much wider area, but it is to be hoped that the regulations for compulsory spraying will mitigate the evil, which possibly could be almost entirely suppressed were every grower of fruit trees to attend properly to its eradication. Wax moth, which is also a recent introduction, like the codlin moth, is now to be found in all parts of the colony. The existence of escaped swarms in hollow trees precludes the hope that we can ever be entirely rid of this pest; but where bar-framed hives are used not very much mischief will be done. Cut-worms (night-feeding caterpillars) did much mischief to young vines at first, but, thanks to Mr. A. B. Robin, of our Angaston branch, a remedy was published which proved to be thoroughly effectual. This consists of a mixture of 30lbs. of bran, 8ozs. of Paris green, and 3lbs. of sugar mixed into a thick paste with a little water, and placed in teaspoonsfuls near the base of each vine. This remedy would perhaps be effectual for the suppression of other caterpillars, slugs, snails, &c. Many other insect pests have been brought under the notice of the Bureau and branches during the past year, and whenever possible the best advice for dealing with the same has been given.

Some other Pests.—We are pleased to know that at last some decided steps have been resolved upon for the suppression of the English sparrow. As this bird appears to favor the homesteads and residences of mankind to the avoidance of scrub and forest lands, there is hope that by the general use of poisoned grain and the offering of rewards for heads and eggs the pest may be reduced very considerably. Those who take the eggs should be careful never to destroy the nests, else the birds will be driven to build in places that are inaccessible. The poison used should be strychnine, with sugar and small grains, as the large grains are not always acceptable. Arsenic is of little use for poisoning sparrows.

SPREAD OF HORTICULTURAL PESTS AND NECESSITY FOR UNITED ACTION IN SUPPRESSION OF PESTS.

However industrious one may be in combating the pests and diseases which affect the crops or results of his labor, all efforts will be discounted to a greater or lesser extent by the negligence or apathy of neighbors in the treatment of their property. No sooner does the first clear off all pests from his property than it is replenished with pests from the properties next adjacent. This applies equally to all pests and diseases, whether rabbits, sparrows, dingoes, foxes, aphides, scale insects, parasitic fungi, or what not. For instance, owners of peach orchards containing perhaps 400 or more trees may spray with insecticides and destroy every aphis, but within four to six days afterwards his trees will be as badly affected as ever by replenishment from the orchard of his neighbor who does nothing to combat the pests. Mr. S. C. Farr, Christchurch, New Zealand, isolated two female aphides on a rape leaf for a few days, and estimated the increase at 44,000. As the first twenty generations from the egg are all females, capable of reproducing nothing but females, and these at the rate of one every two or three minutes, this enormous increase can be accounted for. The reproduction from parasitic fungi is a thousandfold more prolific and rapid.

Whilst the Legislature has granted powers to prevent the introduction of insect and fungus pests from places beyond the limits of the colony, which powers are fairly well exercised through our Customs Department, there does not appear to be sufficient (if any) provision to prevent the spread of such pests from nurseries, orchards, and gardens. It is quite a common thing to hear that a few diseased or infested trees or plants in a neglected orchard or garden are a constant source of infection to neighboring orchards where the owners are regularly trying to keep their places clean and free from pests, as mentioned before. It appears a monstrous injustice that any one should be allowed to propagate pests and diseases on his property to the injury of his neighbors. Some large growers, it is true, say they prefer that such neglected gardens should exist, because they can keep their own trees clean and fruitful by the use of fungicides and insecticides, and they do not desire the competition of the small growers, who perchance cannot give their undivided attention to their trees, and cannot afford to purchase spray pumps, &c., but if we can get rid of the pests and diseases, or even reduce considerably the damage inflicted by them, the cost of production of fruit will be greatly reduced, and thus the profits will be enhanced. Nearly every fungus disease and insect pest in this colony has been introduced from other countries, and could at first have been stamped out at very small cost had there been any power to compel its being done. In some cases, such as the codlin moth, bee moth, and orange round scale, attention was directed to their dangerous nature upon their first appearance here, but action was too long delayed, and now it will prove extremely difficult and expensive to entirely rid the colony of those pests.

USELESS AND DANGEROUS WEEDS.

From time to time reports are received (and specimens forwarded) announcing the appearance of some noxious or useless weed in the neighborhood of one or other of our branches or elsewhere. Where these have not already been declared "noxious weeds within the meaning of the Act," all that the Bureau can do is

is to advise united action to exterminate them, but it is a fact that some landowners are so apathetic that they will neglect to take any action, and the pest is left to multiply until it spreads over such large areas that it becomes a public nuisance, and such representations must be made to both Houses of Parliament as will induce the members to consent to its being declared a noxious weed. Even when this is done there is great difficulty in compelling local bodies to take the necessary steps, or to induce ratepayers to obey the recommendations and directions given by the district councils and municipal corporations. It is very desirable that some means should be devised to deal promptly and effectively in all such cases, instead of delaying until a pest has increased beyond our capability to stamp it out, except by the imposition of burdensome taxes and the expenditure of enormous sums of money.

Stachys arvensis has been introduced at some period from Europe, and is now very common in many parts of the colony. Although considered in Europe to be quite harmless, it appears to possess some peculiar poisonous qualities when grown in these warmer latitudes. Horses and cattle which have eaten of the plant continue in their normal condition as long as they remain unworked in the paddocks, but if driven ever so short a distance they stagger about, become stiff, and fall down. These strange effects have been recorded from New South Wales, Queensland, and several places in this colony. If the cause of this phenomena could be discovered probably a remedy could be found for its effects. The weed, however, is now too widely distributed to allow of any prospect of its extermination. Charlock, or wild mustard, is becoming increasingly prevalent, and as it seeds most prolifically promises to become a great nuisance. If the seeds are ploughed under they remain dormant for many years until brought near enough to the surface to germinate. *Pimelias* of various sorts spring up abundantly upon sandy lands when the scrub is cleared off. They are poisonous, but avoided by livestock except when cut with hay, when the mixture has often caused the death of the horses which have eaten it. A Cape Colony bulb, introduced many years ago, has escaped in some places from cultivation, and covers considerable areas of valuable land It is an Iridaceous plant, named as *Bobartia aurantiaca* by the late Dr. R. Schomburgk, but is made the subject of a cautionary bulletin by the Victorian Government Botanist (Baron Sir F. von Mueller) under the name of *Homeria aurantiaca*, or sometimes *Morea aurantiaca*. The bulb, or corm, is virulently poisonous, and several deaths of human beings have been recorded against it, and it is therefore undesirable that it should be allowed to spread unchecked. Residents near Yankalilla record areas of several acres in extent occupied by this *Homeria*. The so-called wild onion *(Bulbine bulbosum)*, named as poisonous by the late Dr. Schomburgk, is eaten down whilst young by sheep without injury; but it is possible that the seeds or roots may be poisonous, and as it is otherwise a useless and prolific plant, occupying the place of useful plants, it is desirable that steps should be taken to prevent it spreading in new centres, if not to exterminate it wherever it is now established.

In order to prevent the spread of new noxious or useless weeds from the one or two centres where they may first appear to the surrounding districts, and eventually all over the colony, causing great loss to our cultivators, we would suggest the establishment of a noxious weeds board, with local auxiliary boards throughout the colony. The Central Bureau could act as the central board, and municipal corporations and district councils as local boards, with power to enforce the destruction of any new noxious or useless weeds appearing in their respective districts. The mode of procedure might be as follows:—On the appearance of a new weed, which may seem to be noxious or useless in any district, the local board (or any ratepayer) should forward a specimen of same to the central board for identification and advice as to whether it can be considered noxious or otherwise. Should it be deemed noxious the local board should at once enforce its destruction to prevent its spreading further. In the event of the local board refusing or neglecting to enforce the destruction of such weed, the central board should have power, on a complaint being made to them, to recommend the Hon. Minister to order its destruction at the expense of the local body. Had such power been available many of the weeds which are now such a source of trouble and expense to landowners could have been exterminated at very little expense when they first appeared and considerable sums of money would have been saved.

IMPORTATION OF DISEASED TREES, PLANTS, &c., AND IMPURE SEEDS.

The fact that nearly every disease and insect pest which troubles our gardeners and fruitgrowers has been introduced to the colony by means of trees, plants, and fruits upon which such pests were at the time existing should be sufficient justification for enforcing the most rigorous supervision over every importation of trees, plants, and fruits of every kind, as well as over seeds and packing materials that may contain seeds of dangerous pests. It is very satisfactory that such supervision has been inaugurated over the importation of all trees and plants and that the importation of vines has been absolutely prohibited, but there is still much room for surveillance over the importation of seeds which may have been grown in fields abroad that are infested with dangerous or useless weeds, such, for instance, as dodder in clover and lucern, charlack in wheat, &c. Casks and cases containing ale packed in straw mixed with considerable quantities of Californian thistle plants with ripe seeds have at times been noticed by the Customs officials. Such seeds are soon scattered broadcast throughout the colony, and there is no telling what amount of trouble and expense may be caused to our colonists by one shipment alone of such impure seeds or improper packages.

RUST-RESISTANT WHEATS.

Farmers all over the colonies are greatly indebted to several members of our branches, who have, entirely at their own cost, conducted experiments with a view to the discovery of the best rust-resistant, hardy, prolific, and good milling wheats. Amongst the most enterprising of these experimentalists may be mentioned Messrs. R. Marshall, of Templers; J. M. Inglis, of Pine Forest; A. B. Robin, of Nuriootpa; John McColl, of Richman's Creek; and W. H. Hawke, of Arthurton. Some most valuable information has been brought out through these experiments, and we have an almost certainty that they will succeed in finding some varieties which will nearly fill all requirements.

FLINTY WHEATS.

We still hold the opinion that an unjustifiable prejudice exists in South Australia against the hard or flinty wheats. The objections are principally held on account of a rather dark color in the flour and because our milling machinery is adapted chiefly for grinding soft wheats. In opposition to these objections it can

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be urged that the value of some of the flinty wheats in the European markets is quite as high as that of the soft wheats. The flour is stronger, contains more nutritive matter in the form of gluten, and is, in some cases, not dark, but of a rich golden color when made into bread. The straw is often solid, saccharine, strong, plentiful, and the crop rust resistant in a high degree, and prolific. Amongst these flinty wheats is the Medea, which is very rust resistant, prolific, tall growing, strong in the straw, solid stemmed, saccharine; and the flour made from this grain, though not very white, is strong in gluten and more nutritious than the soft, starchy, white wheats.

BRACKISH SOILS.

It is satisfactory to be able to report that some of the farmers upon Yorke's Peninsula have, with advantage to themselves, adopted the advice given by the Central Bureau when on a visit to that locality. They were advised to cultivate mangolds and beet upon the brackish low lands which are found in many places, especially towards the southern end, and, having done so, have every reason to be satisfied with the results. Now that some of the residents have taken up the canning of fruits to some extent they might profitably, perhaps, grow asparagus for canning and olives for oil upon some of the slightly brackish lands. It would probably be advantageous to try a good dressing, say 5cwt. to 6cwt. per acre, of calcined gypsum, or even crushed gypsum, upon brackish lands.

INTRODUCED FODDER CROPS.

Amongst the many varieties of grasses and fodder plants introduced by the Bureau from countries having climatic and other conditions somewhat similar to that of South Australia were a few which promise to become permanently beneficial. One of these is the broadleaf mustard, an early and quickly growing prolific member of the *Brassicea*, which is very highly spoken of by all who have tried it. Another very promising plant is the French honeysuckle, or Malta clover *(Hedysarum coronarium)*, closely allied to *Sainfoin* or *Esparcette*, A few reports have recently been received that Japan clover *(Lespedeza striata)* is spreading in some places. This plant is recorded as having taken possession of very large tracts of country in California, and as being an extremely valuable fodder plant. It is reported that the African sheep bush *(Pentzia virgata)* is becoming established near Mount Searle and elsewhere. This plant occupies the place in Cape Colony that is filled in Australia by our saltbushes, and it is significant that the Cape colonists are carefully cultivating our saltbush and neglecting their valuable sheepbush, whilst we in Australia have been neglecting to cultivate the indigenous fodder plants whilst experimenting with those from the Cape of Good Hope, Mexico, Orizana, and all the warm and arid parts of the earth. Further trials of the much-vaunted Wagner's wood pea *(Lathyrus silvestris Wagneri)* have been made by our branch members, who have purchased seeds from the agents at their own expense; but the claims made on behalf of this plant have not been supported in practice in this colony. It would probably thrive in a locality where the rainfall exceeds 25in. per annum; but when it is stated that the plants must first be raised in nursery beds for two years and then planted out singly at a foot apart it will be seen that the time, expense, and trouble of establishing an acre of this plant (which, after all, would not be as profitable or as good as lucern) is too great to allow of its general adoption. Further, it is a long-established fact that the *Lathyrus* family of plants are possessed of dangerously poisonous properties whilst in seed, and the use of the seeds has been prohibited in some States on the continent of Europe. A great deal of interest has been excited by newspaper paragraphs lauding *Polygonum sachalinense*—an ornamental foliage plant in gardens, allied to the buckwheat—as a valuable and immensely prolific fodder plant. Whilst somewhat doubting the accuracy of these statements, our fellow member (Mr. Maurice Holtze, Director of the Adelaide Botanic Garden) has procured plants and seeds of this *Polygonum*, and will shortly be in a position to report upon the correctness or otherwise of the reports made. The Black Medick *(Medicago lupulina)*, which is grown amongst the wheat crops in India, and is supposed to partly compensate by the production of nitrogenous compounds for the exhaustion of those compounds by the wheat plants, has been successfully grown by some of our branch members, and is reported to be an annual, prolific in seeding, and, as a fodder plant, much liked by stock.

SUMMER FODDER CROPS AND ENSILAGE.

Farmers cannot be too strongly urged in regard to making provision for the feeding of their live stock by the special cultivation of crops, not only for their current requirements but also for the contingency of drought or scarcity of food. Seasons are experienced when natural herbage is abundant and cultivated fodder crops are prolific; but such seasons are only too often followed by periods of scarcity and drought, when owners of stock are driven even to pulling the thatch off their sheds to feed the animals, and very many of them die of starvation. If, instead of burning the stubbles and allowing so much of the natural herbage to go to waste, these valuable products of the soil were stored up, there would be much less loss to owners and suffering on the part of live stock; but additionally a deal more fodder crops could be raised by special cultivation, which would support more stock, and, with dairy cows especially, great advantages would accrue from feeding them regularly either with green fodder just cut from the fields or with green feed which has been preserved by ensiling. Ensilage, if properly made and packed in pits, will keep good for a very long time, and is safe from fire and nearly all contingencies.

Without laying down a hard and fast rule, it may be stated that failure to grow satisfactory crops of maize, sorghum, and other summer-growing fodder crops, is often due to improper treatment. Compact, heavy, and poor clay bottoms, from which most of the good soil has been removed by water, or sour land that has been soddened by water during winter, is seldom fit to grow good summer crops, however well it may be tilled. The best soils are those that are deep, light, rich, and well drained. If the subsoil can be well pulverised some time previously to sowing, and the surface soil properly tilled and manured, it will then be in its best condition for a good crop. Sometimes on well-prepared land a good crop will be realised when the seed is sown broadcast, but in order to miss no chance it is most desirable that the seed should be sown in drills abont 30in. apart, and that the surface soil should be very frequently hoed and loosened to a depth of not more than 2in. whilst the plants are growing; 5lbs. of sorghum or 10lbs. of maize are sufficient to drill an acre of land.

FODDER PLANTS FOR FROZEN MEAT TRADE IN THE SOUTH-EAST.

Without doubt there are enormous possibilities for the raisiag of great crops of fodder plants over very large areas of land in the South and South-East; and it will probably pay the people there better to raise fodder and fatten store animals bred in the North than to raise young stock upon the spot. If land is prepared thoroughly and sown with lucern at the proper time of the year this is a plant which will give as good returns probably as anything that can be raised. The difficulty is to get the lucern first established when it will stand any possible cold or heat that can occur. Possibly the best time to sow the seed in these localities is late in spring after all chance of late night frosts is over. Clover, rye grass, trefoil, and many other pasture grasses grow well there, and the product of mangolds, beet, kohlrabi, turnips, kale, cabbage, rape, and other root and leaf crops have been most phenomenal, even where little or no manure has been used. There is every probability that many other valuable fodder plants could be grown in the generous soil, and under the favorable climatic conditions prevailing in that portion of our colony.

FOREST TREE PLANTING.

Although our rural population have not taken up the planting of forest trees generally, as was hoped a few years ago, still there have been many thousands of trees planted during the last year, as there have been also during previous years, by members of our branches as well as by the public and public schools' children at their Arbor Day celebrations. It may here be mentioned that the most interesting spot on the Adelaide Park Lands is that portion on the east where the first Arbor Day celebration in Australasia was held five years ago, where the trees planted by the school children have now grown to a good size and present a beautiful appearance in the contrast of form and color of the numerous varieties of trees growing there. We cannot but regard the raising of forest trees on a very large scale of the utmost importance to not only posterity, but even to the present generation. Timber for fencing, firewood, and all other purposes is becoming very scarce indeed. A return showing the acreage of timbered land in South Australia, together with the annual consumption and probable duration of present supplies, would, we believe, reveal some startling facts.

The branches at Paskeville, Nantawarra, Port Germein, Stansbury, Millicent, Angaston, Petersburg, Dawson, Hahndorf, and elsewhere have held Arbor Day celebrations during the year, either with the public schools and local authorities or on their own responsibility.

TOBACCO.

There is no doubt that tobacco of good quality can be grown in South Australia, but there is need for education in all branches of its cultivation, and most especially in regard to the final curing. An erroneous idea appears to be prevalent that very rich soils are required for growing this plant, but such soils produce coarse strong leaves with thick ribs and veins. Poor sandy soils, but supplied with potash and phosphatic manures in moderation, will produce, under proper treatment, a fine silky leaf, with small mid-rib and veins, and of good color, texture, and flavor when well cured. A large number of packets of tobacco seed have been distributed since the Bureau first came into existence, and not a few recipients have been successful in raising plants and have shown some amount of skill in curing the leaf for home use. There ought to be a good sale for rough tobacco leaf for use by horticulturists in the manufacture of spray compounds for insect pests.

NEW VARIETIES OF HOPS.

The Bureau is under a special obligation to our member, Mr. Samuel Goode, now absent on leave, in England, for selecting and shipping a number of sets of different varieties of good hops. These were selected with the object of extending the period during which the hops may be harvested, some of them maturing very early, others early, while some mature in medium time, and the rest late and very late in the season. Our member, Mr. Maurice Holtze, F.L.S., Director Botanic Garden, took charge of this latest consignment, and will be able at the proper season to distribute sets to such persons who will grow them for commercial purposes and be prepared to distribute further sets gratuitously, as may be required by other growers. Those sets formerly sent through similar agency were kindly nursed up by the Conservator of Forests at the Mount Gambier Nursery, and have since been handed over to Mr. D. Norman, sen., who has agreed to distribute sets when available to other growers. A few sets were presented to Messrs. Kinch Bros., Cygnet River, Kangaroo Island; Mr. D. Murray, near Warlands; and a few others; but no reports have been received from any of the recipients.

FIBRE PLANTS.

Some progress has been made towards settling the question as to whether or not fibre plants can be grown here profitably, and as to the value of uncultivated plants capable of yielding fibre for textile or manufacturing purposes, and for paper pulp. Port Germein branch members have imported flax seed from Riga, and we may hope soon to hear of the results from the sowing of several acres in that locality. Very fair specimens of hemp, about 8ft. high, were sent up by Millicent branch, but the plants had not been sown thickly enough to make a first-class sample. In previous reports hopes have been expressed that at least one paper mill would be established in South Australia. Quite recently another attempt has been made to start a mill by means of a company, but the attempt did not succeed. It has been shown that very large quantities of strawboards and printing papers are used in this colony as well as in the other Australasian colonies, and we have considerable quantities of fibre-producing plants very suitable for strawboards and printing papers growing indigenously, or by introduction, and this is especially the case in the south, south-east, and along the course of the Murray. Again, all along our sandy seacoasts there is the sword-rush *(Cladium gladiatum)* or mullett fibre, and this is exceedingly abundant. Porcupine grass, several species of *Cladium*, and probably also many of the thistles and the stinkwort, might also be cheaply used as a source for paper pulp, as in consequence of the great demand for paper pulp fibre, and the immense denudation of the Norwegian and American forests by wood fibre millers, the papermakers are looking round for substitutes for this fibre. Over 10,000 plants of *Agave sisalina* will, it is hoped, soon be available for distribution and cultivation for the manufacture of sisal hemp, and quite a large number of plants of *Fourcroya longæva* have been given away to various settlers by the Director of the Botanic Garden.

MINOR PRODUCTS FOR SMALL LANDHOLDERS.

There are many small products which could be raised by laborers, cottagers, and their children which would considerably add to the incomes of our rural population. Bees, poultry, vegetables and fruits for home use and many similar lines will at once commend themselves to the attention of thrifty housewives. Considerable sums of money are annually spent on imported herbs, such as sage, marjoram, thyme, &c., for use by butchers, cooks, and others; but these ought to be grown by our village settlers, blockers, and others. Medicinal herbs to some extent are imported, and some varieties are required to be fresh and new, but whether there is sufficient demand for such for local use is a question that has yet to be decided. There might be a market abroad for such that can only be grown in a warm climate like ours. The flowers of various kinds of lavender could be gathered by children, stripped off the stems, packed compactly, and sent to Grasse, in France, where they would probably sell at a good price. If our Customs regulations could be modified there should be a good opening for the extraction of the volatile and essential oils from lavender, peppermint, rosemary, orange, and many other plants. There is already a considerable import of these articles, which are used by chemists in the manufacture of perfumes, but as our climate is especially favorable to the growth of plants rich in odoriferous oils, we ought to be in a position to export instead of purchasing from European dealers, who have to procure such goods from foreign countries.

LIVESTOCK DISEASES AND PESTS.

Tuberculosis.—This being a specific disease, originating with a known bacillus, and being communicable not only from one of the lower animals to another, but also to mankind by means of the dried particles of tuberculosis matter, or dried discharges from the lungs of consumptive animals, and directly from the breathing organs of the affected animals (possibly also from the excrementitious voidings), and even more readily by consumption of their milk and flesh, it continues to be the duty of the Bureau to recommend that a very strict supervision should be maintained over all cattle, especially over dairy cattle, because they are more susceptible to the disease on account of the drain upon their system. Dairy herds are now increasing largely, and by the collection of milk at various centres of production there is more liability to spread the disease than when each one dealt with the produce of his own dairy. There should be a constant inspection of dairy herds and slaughterhouses in order to prevent the sale or use of tuberculosis meat or infected milk, which is a prolific source of disease and death to the human family, and also with a view to stamp out the disease, or at least to minimise the losses occasioned by it. In addition to strict supervision over all introduced or imported cattle, all slaughterhouses, and dairy herds, we are of opinion that the action of the stock inspector at Mount Gambier in calling farmers and others interested together to examine animals supposed to be suffering from tuberculosis and observing the pathological peculiarities of such animals when afterwards slaughtered, is of great educational value, and will enable those who are most interested to diagnose the disease and promptly check its further spread amongst their herds. As this disease sometimes remains latent for a long period, the great value of Koch's tuberculine in testing suspected animals (which is now being tried in many parts of Europe and America) suggests the importance of its use here. Tuberculosis has been traced through three or four generations of animals in some herds, &c., and the carelessness with which stud animals are used that are affected with tuberculosis points to the necessity for action being taken to weed out such animals.

Ticks and Lice on Sheep.—As was the case with scab in sheep, at first there are a few sheepowners who vigorously object to dip their sheep for the eradication of ticks and lice. As these insects are injurious to the quality and quantity of wool, diminish the weight and good condition of the sheep, and cause a deal of suffering to the animals, self-interest should induce the owners to comply with the regulations, the more especially because it will be quite possible to completely free the whole of our flocks from the pests if the whole of the sheep are dipped effectually two or three times.

Other Diseases of Stock—Pleuro-pneumonia has not been more prevalent than usual, and from the fact that our eighty-three branches are always on the alert to report cases of disease amongst livestock it may be accepted that this statement means a decrease in the actual number of cases. A few cases of ophthalmia amongst horses and sheep have been reported, but there has been an apparent falling off since the cure for this complaint has been published. A few cattle have died from impaction of the omasum on Yorke's Peninsula, as usual, at the beginning of spring, and this trouble is likely to continue so long as the animals are allowed to feed almost exclusively upon cockspur, thistles, and similar dry, fibrous, woody, and innutritious plants during autumn.

PORK FOR EXPORT.

In view of the very low price obtainable for wheat, as well as in recognition of the fact that our farmers must add many other subjects to the products of their farms, it is worthy of the most serious consideration whether pig-breeding for export cannot be profitably carried on. By means of cultivating peas, beans, and other leguminous crops on the land its capacity for further production of cereals is enhanced, and the pigs can be turned in upon these leguminous crops when mature, and thus save the cost of harvesting, while also saving the expense of distributing their manure. During favorable seasons great quantities of weeds grow rapidly during the late winter, spring, and early summer months, and here again the pigs would find an abundant source of food supply prior to being topped up. From reports appearing in New Zealand and Tasmanian publications, it appears that the Inter-Oceanic Company, through their agent, Mr. Vecht, is prepared to erect very extensive curing works and to pay 3½d. per lb., dressed weight, for pigs if guaranteed a large supply. This company deals with mess pork, and large and fat pigs would be suitable for their business. There is also a prospect of a market being found in England for considerable numbers of small pigs—porkers, baconers, and suckers—sent home in a frozen condition.

THE DAIRY INDUSTRY.

During the last twelve months very satisfactory progress has been made in the dairy industry, particularly in the direction of the establishment of creameries, both private and co-operative concerns. The Butter Bonus Act largely assisted in this, but the chief factor has undoubtedly been the very low price of wheat—our leading cereal—compelling farmers to bestow more attention in other directions of farm work. About 300 tons of butter have been exported to foreign parts, and there is every probability of this being doubled

doubled during the coming season. It is very gratifying to learn that South Australian butter at once took a foremost position in the world's markets, and will, in the opinion of experts, be excelled by few (if any) other countries when the industry becomes more extended and fully established here, our climate and natural pastures being most favorable for the healthy rearing and keeping of dairy stock. Owing to the drought that occurred last year in the Northern Hemisphere, prices of butter and other dairy products ruled higher than we may expect them to retain this season, but there is nothing to indicate any collapse in values, and it is admitted even by foreign competitors that conditions for dairying in Australia are very much superior to those existing in the leading countries where cattle have to be housed and provided with artificial food for many months during their trying winters.

The past year's production in dairy lines in South Australia may be moderately estimated as showing increased output of 20 per cent., whilst for the coming season even greater results may be reckoned upon if we get an abundance of seed. Unfortunately a dry winter has been experienced in the Northern agricultural areas, which will somewhat diminish quantities that might otherwise have been expected from there.

IMPROVEMENT OF DAIRY BREEDS OF CATTLE.

Considerable interest still continues to be shown by some of our branches in the improvement of the dairy cows of their localities. Petersburg branch reports an increase of over thirty grade heifers, the progeny of the pure-bred Ayrshire bull, "Herd Laddie," from Mr. J. H. Angas's celebrated herd. Cherry Gardens branch purchased a pure Ayrshire bull on September 15th, 1893, for £20. Minlaton branch obtained a pure Jersey bull for £15. The Eudunda and some other branches are also considering the question of purchasing pure-bred bulls for similar purposes. The introduction of butter-fat testers into our dairy factories will contribute very strongly to improvement of our dairy herds.

THE BEEKEEPING INDUSTRY.

Hope has been entertained that a market would soon be opened in England for our surplus honey products, but owing, most probably to defective arrangements by those who undertook the duty, that hope has not been fulfilled. Many inquiries have been made by travellers for British provision merchants, but they cannot be referred to any firm in South Australia which will undertake to receive, grade, and consign honey and wax, and the output at present is not sufficiently large to tempt any English firm to establish a depôt for these products alone. The total yearly production in South Australia may be estimated at about 600 tons, and at the present moment probably 200 tons are held in stock, and would be gladly quitted at 2¼d. to 2½d. per pound f.o.b. at Port Adelaide. Whilst our honey cannot compare for high quality with the thyme honey of the Pyrennees, or the sagebush and clover honey of California, there is a deal of it—especially that from the redgum districts and from the clover fields of the South-East—that is very good, but it must be admitted that some sent to the market is exceeding inferior. We do not believe that our honey has been fairly treated in the British markets, and certainly think that with caution in grading at this end and fair treatment at the other there would be an excellent market for South Australian honey in Great Britain.

FOOD PRESERVATIVES.

In view of the fact that a great number of chemical preparations supposed to be preservatives are now being sold and mixed with substances used as food by the public, and whereas it is well known that some of the chemicals used in such preparations are cumulative in the human body and very injurious to the health, it appears to be desirable that such preparations should be prohibited from use until it has been shown to the satisfaction of some competent public body or officer that such "preservatives" are safe to use and are not likely to injure the health of the people who consume the products so treated.

ANALYSIS OF MANURES.

The Bureau cannot but regret that the Bill dealing with this subject introduced into Parliament last session did not pass into law, but have the hope that it will be passed this session, with such alterations as in the wisdom of the members of both Houses may seem to be necessary.

EXPERIMENTAL SEEDS.

Owing to the necessity for economy we were unable to purchase any seeds, except a small quantity of *Lavandula angustifolia*, for experimental sowing. We have had a number of seeds raised from seeds distributed in previous years presented to the Bureau, besides which a number of new seeds were presented for distribution.

Except in the Southern districts and a few of the more favored districts of the North, most of the reports received state that, owing to drought and attacks by caterpillars, most of the experimental sowings were failures.

The following list gives a synopsis of the reports on some of the more successful plants:—

FODDER PLANTS.

Sorghum.—Caracasanum, very good for fodder. In hills districts has been cut three times; grows up to 7ft. Holcus, very good, prolific yield; Giant Honduras, yields large quantities of seed and fodder; Red Imphee, very good, the best of the sorghums distributed, heavy yield of seed and fodder; Broomcorn and Yellow Millo Broomcorn, both good.

Maize.—Early Crosby, good; Extra Early Adams, early, small cobs; Early Summer Yellow Flint Field, early, prolific, small cobs.

Millet.—Bearded, two reports, very favorable; French honeysuckle *(Hedysarium coronarium)*, deep-rooted, stands summer well, good fodder; cattle, horses, and pigs very fond of it. *Broad-*

Broad-leaf Mustard.—Splendid early winter fodder; should be sown to catch first rains. Grows to height of 7ft. to 10ft.; very heavy yield of feed. When very young can be used as a salad, when older may be cooked as spinach.

Medicago Lupulina.—Only a few favorable reports.

Cow Pea.—Small white, black, and clay color. One or two reports favorable, rest failures owing to various causes.

VEGETABLES.

Tomato.—Earliest Ficarizzi, early, prolific, very fine flavor.

Cauliflower.—Early Giant Naples, fair, large.

Squash.—Yellow Cashaw, very good.

Pumpkin.—Brazilian Bush, very good, early; Cocozele, splendid, early, heavy yielder; Cheese, splendid vegetable, heavy yielder, fine flavor.

Water Melon.—Long Dixie, good flavor, prolific yielder; New Gragg, good flavor; Boss, large, splendid flavor, thin rind, does well in cooler districts.

Rock Melon.—Vallerand's Hybrid, large yield, good flavor.

Pie Melon.—Royal George, splendid melon, very prolific; Citron, good, prolific.

Cucumber.—Italian Giant, large, fine flavor, good yielder; Giant Pera, good; Nile, very prolific, large hollow fruit, little use as a vegetable unless picked very early; Japanese Roller Climbing, very good, prolific, one of the best; Japanese Snake Climbing, small, good for pickling.

Sugar Pea.—Holstein, few favorable reports, prolific.

Celery.—Arezzo, very good.

Lettuce.—Albano and Roma, good; Neapolitan Giant, large, rather coarse flavor; Potenza (Cos lettuce), very good.

CEREALS.

Wheats.—Pride of Barossa, very little rust, small grain, becomes laid with wind easily; Robin's Rust-proof, little rust, not very good; Bianchetta, very little rust, good milling, medium late.

Oats.—Algerian, very good, prolific, grain not very suitable for milling.

DONATIONS.

We are pleased to report that a considerable number of additions to our Library and Museum have been made during the year, and the thanks of the Bureau are due to the following kindred institutions and gentlemen for their donations to the Library and Museum, and for seeds for experiment:—The Departments of Agriculture of the United States of America, Canada, British Columbia, Nova Scotia, Cape Colony, New South Wales, Victoria, Queensland, New Zealand, Tasmania; the State Board of Horticulture, California; the Nebraska University Experiment Station, U.S.A.; the Royal School of Agriculture, Portici, Italy; the Royal Academy of Agriculture, Sweden; the Agricultural College, Wageningen, Netherlands; the Hon. Minister of Agriculture, the Director of Botanic Gardens, the Chief Inspector of Stock, the Conservator of Forests, the Government Geologist; Messrs. C. French, F.L.S., D. McAlpine, F.C.S., and Baron Sir F. von Mueller, K.C.M.G., Melbourne; T. N. Grierson, New South Wales; F. M. Bailey, F.L.S., Brisbane; J. Curnow, Wirrabara; J. Wearne, Kadina; C. H. E. Roediger, Gawler River; W. George, Port Adelaide; Woods & Co., Adelaide; J. Shaw & Co., Hindmarsh; Rev. J. Honner, Adelaide; L. G. Corrie, Brisbane; Geo. Wills & Co., Adelaide; Captain J. Runciman, New Zealand; Mount Pleasant Branch; Sir Chas. Todd, K.C.M.G.; H. J. Scott, Adelaide; T. W. Kirk, F.L.S., New Zealand; V. Lawrance, J.P., Adelaide; Chamber of Manufactures, Adelaide; Public Library, Sydney; W. H. Lindsay, Haddon Downs; J. Hillier, Gawler River; D. A. Crichton, Melbourne; Professor G. B. Cerletti, Italy; Editor *Wynberg Times*, South Africa; R. Marshall, Templers; W. A. Murray, Cappeedee; N. Rogers, Woolundunga; W. Bennier, Port Broughton; E. S. A. Willis, Clinton Centre; Professor A. J. Perkins, Roseworthy; J. M. Inglis, Pine Forest; F. C. Smith, Angaston; W. H. Hughes, Aldgate; F. W. Hicks, Kangaroo Island; Canterbury Agricultural Society, New Zealand; H. W. Hoskin, Baroota Whim; A. M. Budd, Napperby; J. Brown, Punyelroo; T. P. Parker, Gawler River; H. Miller, Clare; G. H. Vickery, Meadows; T. G. Quin, Aldgate; Westerman-Smith, Golden Grove; H. Roediger, Gawler River; J. D. Wilson, Penola; C. Ricks, Cherry Gardens.

CORRESPONDENCE.

The correspondence during the year under review shows a decrease under the previous year *(vide* accompanying statement).

	Letters Received.	Letters Dispatched.
1889-90	840	720
1890-91	987	1,002
1891-2	1,096	1,106
1892-3	2,025	1,861
1893-4	1,784	1,410

This does not include a considerable number of letters received and written by the chairman. In addition we have received several hundred written applications for "The South Australian Vinegrower's Manual" and other publications.

FINANCIAL STATEMENT.

For the year under review the sum of £865 was voted to the Bureau for contingencies and £500 for salaries. Owing to the urgent necessity for economy the expenses were kept down to the lowest limit; nothing more than was absolutely necessary to keep up the efficiency of the Bureau was done. We spent out of our vote £1,181 1s. 10d., leaving a balance of £183 18s. 2d. It is well worthy of notice that we repaid to the Government, through the different departments, the sum of £210, or 30 per cent. of the expenditure for contingencies.

DETAILS

DETAILS OF EXPENDITURE.

	£ s. d.	£ s. d.
Salaries—		
Secretary	385 0 0	
Clerk	100 0 0	
		485 0 0
Contingencies—Fifth Congress, Expenses of—		
Printing report of proceedings	59 10 0	
Reporting	12 0 9	
Advertising	5 12 0	
Sundries	0 17 3	
		78 0 0
General Working Expenses—		
Amount paid to Government departments for stamps, telegrams, telephone, printing and stationery, railway tickets, &c., £210, less 17s. 3d. included in Congress expenses	—	209 2 3
Printing journal and pamphlets	—	325 9 2
Sundries—Purchase of seeds, subscriptions to papers, office expenses	—	83 10 5
Balance	—	183 18 2
Total		£1,365 0 0

F. KRICHAUFF, Chairman.
A. MOLINEUX, Secretary.