

QUEENSLAND AGRICULTURAL JOURNAL

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PART 6.

Agriculture.

DETERMINATION OF THE KEEPING QUALITIES OF SILAGE.

In connection with the report on experiments made to determine the keeping qualities of ensilage, published in the May issue of the Journal, we have received the following analyses of samples of maize and lucerne kept for different periods in sealed tins by the Agricultural Chemist, Mr. J. C. Brünnich:—

ANALYSES OF SAMPLES OF ENSILAGE—DIRECTOR OF AGRICULTURE.

	1. Maize—Kept in Sealed Tin 8 Months.	2. Maize from Overground Silo—4 years 8 months in Sealed Tin.	Lucerne from Pit Silo—Kept 4 years 8 months in Sealed Tins.	
	Per cent.	Per cent.	Per cent.	
Water	64.50	70.50	69.00	
Dry Matter	35.50	29.50	31.00	
Crude Protein	2.69	3.08	3.81	
Ash	3.73	3.70	3.72	
Crude Fibre	7.10	8.50	11.45	
N-free Extract	21.38	13.52	11.22	
Ether Extract	0.60	0.70	0.80	
Digestible Protein	1.80	2.12	1.81	
Amido Nitrogen	0.24	0.24	0.24	
Ammonia Nitrogen	0.025	0.067	0.105	
Acidity (as Lactic Acid)	1.00	2.25	2.37	2.52%
<i>Percentage Dry Material.</i>				
Crude Protein	7.57	8.0	12.30	14.2
Ash	10.50	6.5	12.56	11.8
Crude Fibre	20.00	24.0	37.00	33.4
N-free Extract	60.24	58.5	36.10	35.0
Ether Extract	1.69	3.0	2.60	5.7
Per cent. Protein Digestible	67	65	47	30 (?)
Ratio Amido to Total N.	1:1.73	1:2.35	1:2.53	1:2+

The figures in the second column, "Maize and Lucerne from Pit Silo," represent the average or usual values for good maize or alfalfa silages of corresponding water content.

The samples of maize ensilage possess a composition in the main corresponding to maize ensilage generally. Such departures as are apparent will be largely resultant upon the actual composition of the ensiled material.

The high acidity of the second maize sample is noteworthy. Considering the acidities normally developed in *lucerne* silage it is, however, probably not excessively high.

The digestibilities of the protein and the protein-non-protein ratios are near normal for these classes of feeds.

Referring to the "nitrogen present as ammonia," the samples sealed for the longer period appear to contain a somewhat high amount. This is taken as indicating that there may have been certain subsidiary changes after removal from the silo which partake of the nature of putrefactive or degenerative alterations. However, in absence of knowledge of the ammonia content of the freshly removed material that such change has occurred cannot be definitely maintained. The appearance and odour of the material would be pronounced satisfactory.

The protein content of the *lucerne* sample is somewhat low and the fibre high, arising, it is supposed, from the somewhat "stemmy" nature of the sample.

ANALYSIS OF GIANT HONDURAS SORGHUM (EXPERIMENTAL PLOTS)—DIRECTOR OF AGRICULTURE.

—	Fresh Material.	Water-free.	Composition Average green Sorghum fodder.	
	Per cent.	Per cent.	Fresh.	Water-free.
Water	70.70	..	75.1	..
Crude Protein	1.51	5.20	1.5	6.0
Ash	1.79	6.20	1.4	5.6
Crude Fibre	13.00	44.80	7.0	28.0
N-free Extract	12.70	42.80	14.0	56.0
Ether Extract	0.30	1.00	1.0	4.0
Digestible Protein	1.01	3.46	1.0	4.0
Percentage Protein Digestible	66.00	..	65-68.00	..
Hydrocyanic Acid	Nil.	..	..	..
Starch Equivalent	14.3	..	16.0 (at	corresponding water content)

The high content of fibre is remarkable, and is attributable to the high proportion of stalk and little flag. To the same cause is attributable, probably also, the slight deficiency in protein.

THE UTILITY OF SEED SELECTION.

Many plants, through natural agencies, are so prone to cross-fertilisation that existent varieties soon lose their best characteristics unless special precautions are taken by the grower to preserve them; with farm seeds the tendency generally is to pay too little attention to their purity and the type and kind sown.

Much can be accomplished by the individual farmer in improving the yield of his crops, by sowing or planting proved strains of seed,

cuttings, tubers, &c., the prolificacy and character of which have been determined, and fixed by judicious selection from high-producing plants.

More land must be cultivated and more fertilisers used when poor-yielding varieties of cultivated crops are raised, and it is obvious that energy and money are to be saved by growing tested varieties of standard commercial value, which, under normal conditions, can be confidently expected to perpetuate their good qualities in the resultant crop.

It is to be recognised also that enhanced yields are to be looked for and better prices obtained by raising crops from acclimatised seed selected with due regard to local conditions, and marketing the more uniform quality of produce to be expected therefrom.

Stockowners are alive to the fact that perfection in animal-breeding, whether for beef or dairy quality, is only attainable by combinations of essential unit characters, and by careful breeding of selection and by systems of feeding to ensure proper individual development. When agriculturists realise that similar principles underlie plant improvement, it is certain their general adoption will do much toward furthering personal welfare and, indirectly, that of the community. The farmer of to-day, for the most part, has little opportunity to consistently follow up the work involved in seed-improvement. As an individual, he has suffered in the past through the introduction of weed seeds and inferior non-pedigree seeds to his land, but now enjoys a measure of protection (hitherto unknown) through the beneficent operations of the Pure Seeds Act.

The initiated well know that whereas certain kinds of seeds can be readily raised here, others must be grown in cooler latitudes and introduced to meet each season's requirements.

The Department of Agriculture has procured and tested from time to time a considerable number and variety of new plants and seeds, and an organisation has been established which aims at the improvement of certain farm crops and the handling and sale of pure seed of these kinds, so that farmers may now have the opportunity of securing acclimatised seed and participating in the benefits to be derived from sowing high-yielding strains, evolved by approved methods of selection.

H. C. QUODLING, Director of Agriculture.

SHORT DESCRIPTIONS OF VARIETIES OF MAIZE, SORGHUMS, &c., ADVERTISED FOR SALE.

Improved Yellow Dent Maize.—Heavy-yielding variety, recommended for coastal districts and scrub lands where there is a good rainfall. Takes from five to six months to mature. Strong grower, attaining over 12 feet in height on rich land. Ears robust, semi-erect in habit, cylindrical in shape, about 10 inches in length and well protected by the husk from the weather and insect attack. Rows 14 to 18 in number; bold, fairly hard type of grain, inclined to wedge shape; somewhat over medium size and of good depth and thickness. Colour rich amber, with characteristic yellow tip, the dent varying from medium to rough. Good fodder corn.

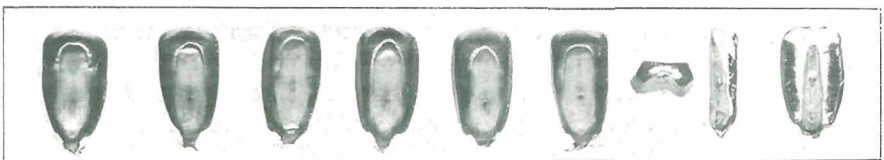
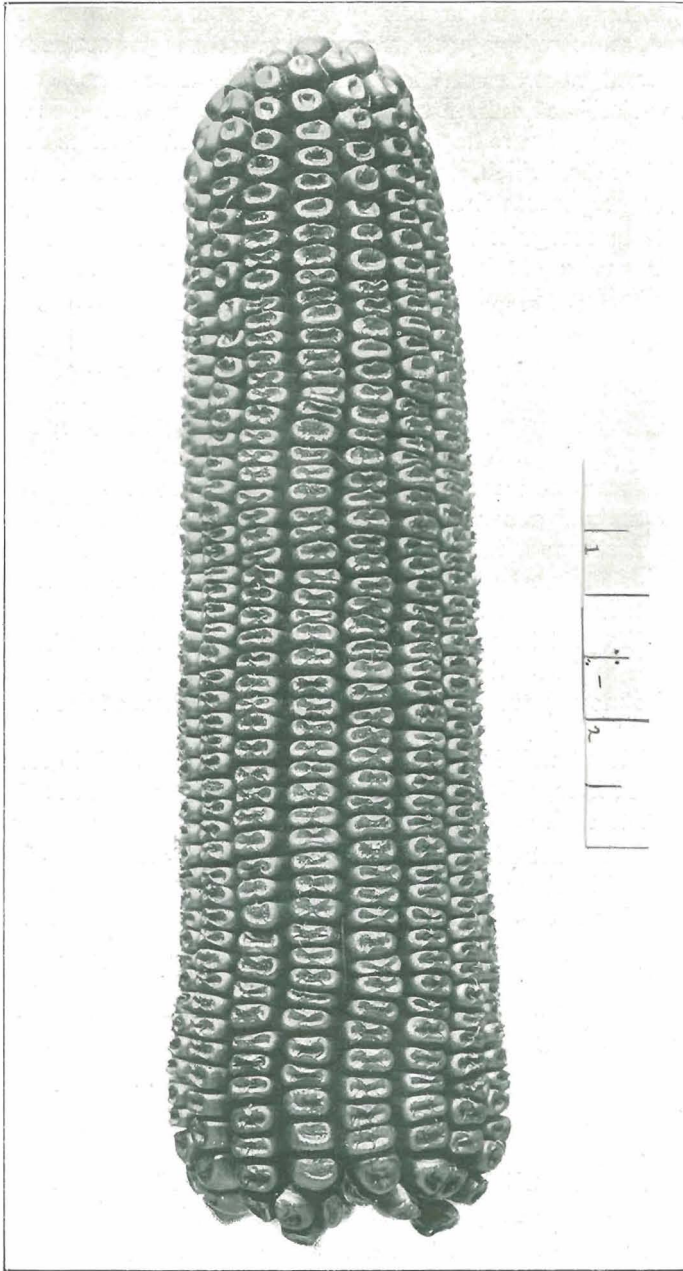


PLATE 15.—IMPROVED YELLOW DENT.

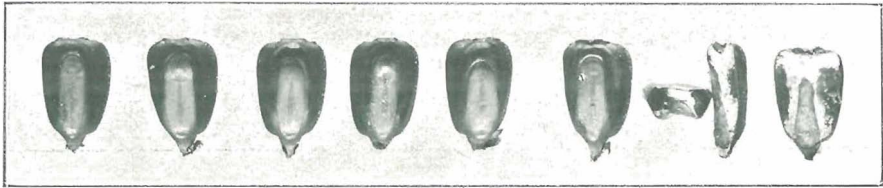
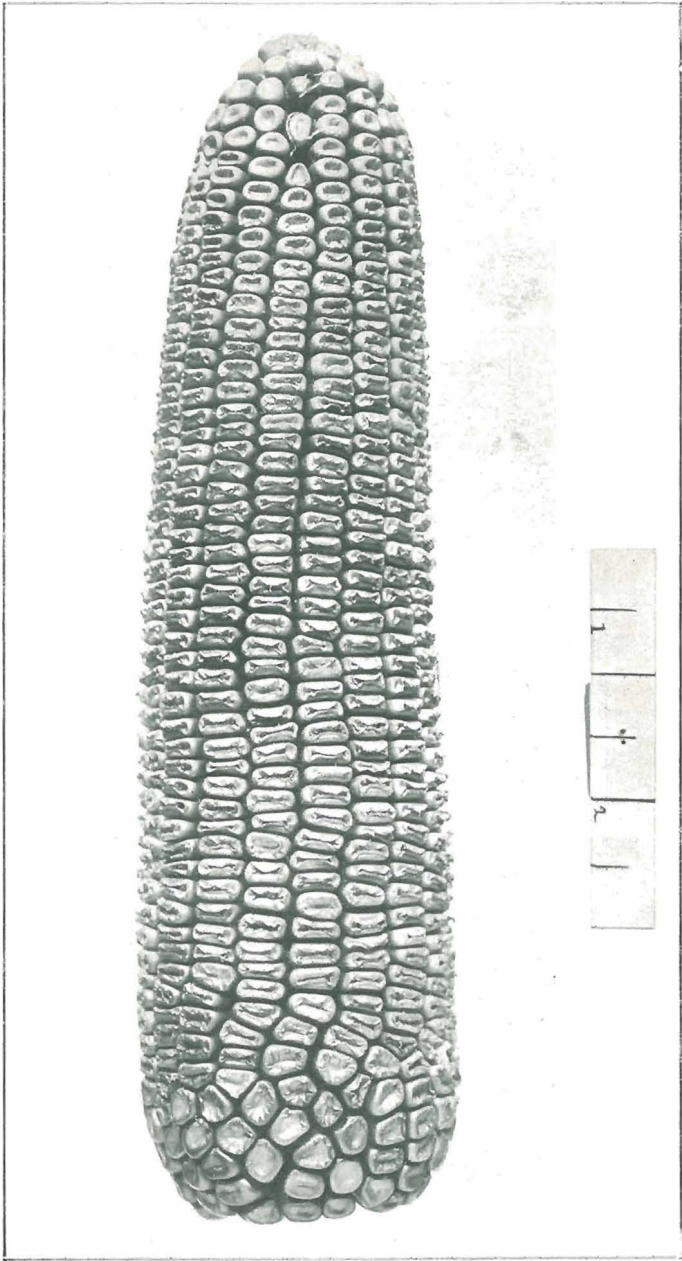


PLATE 16.—STAR LEARNING.

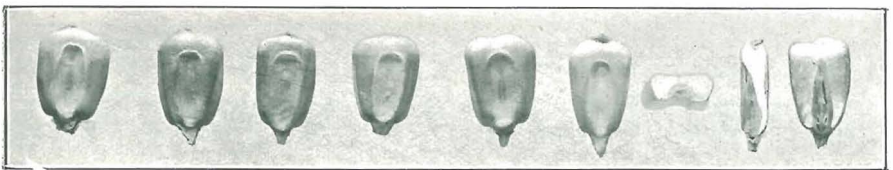
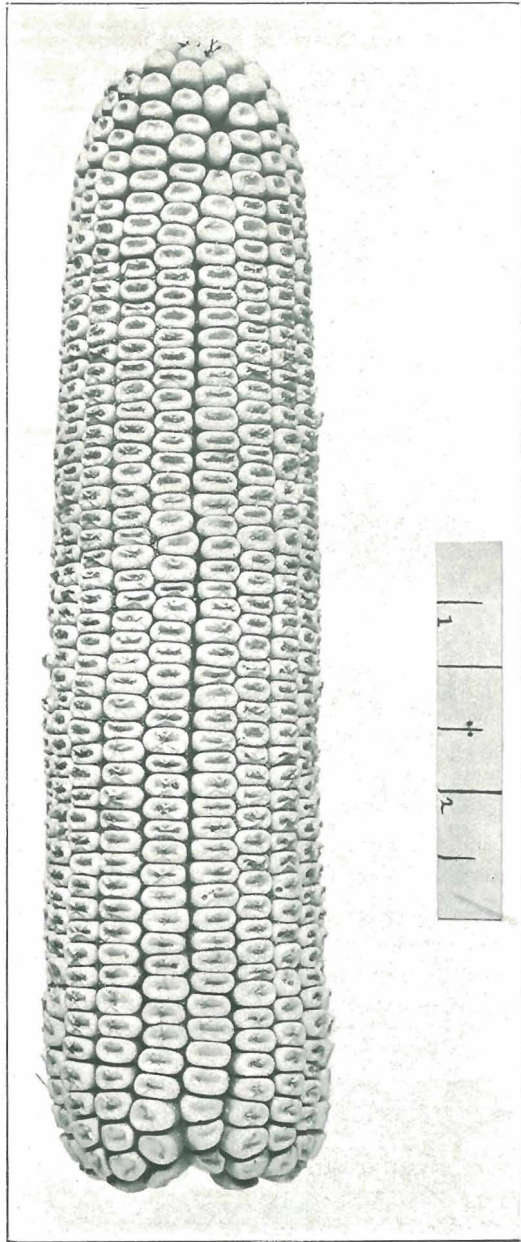


PLATE 17.—BOONE COUNTY WHITE.

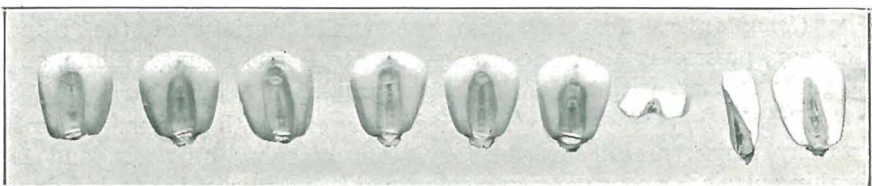
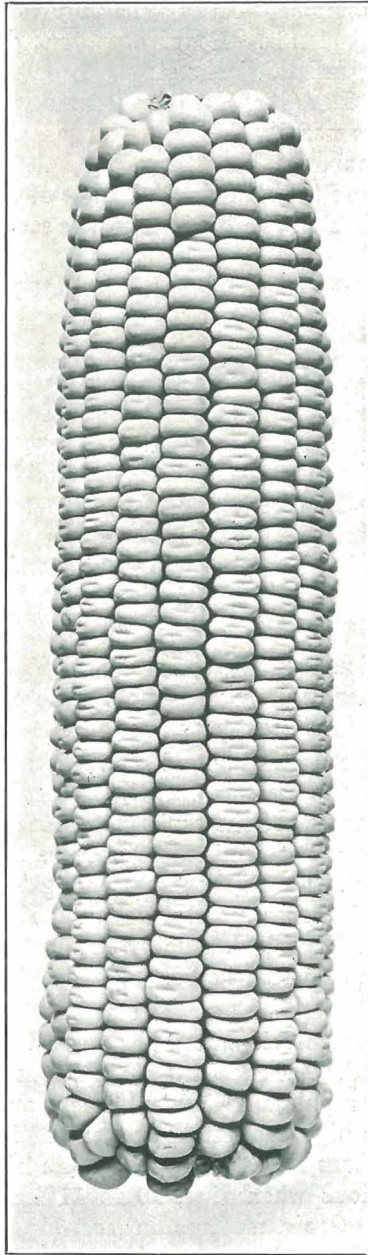


PLATE 18.—BRAZILIAN WHITE.

Hawkesbury Champion.—Heavy-yielding variety when grown on rich alluvial or scrub lands. Requires a long-growing season of six months, and a good rainfall. Very strong grower with robust stalk, up to 14 feet in height. Ears large, up to 12 inches in length; fairly good husk covering. Rows usually 14; very large, bold, flat grain of good thickness. Colour amber, with yellow cap; long smooth dent. This variety has its origin on the rich alluvial lands of the Hawkesbury River, a locality noted for its high yields of maize. Is sometimes called "Golden King."

Star Leaming.—Matures in slightly over 120 days. Recommended for districts where a short season calls for the selection of a quick-maturing hardy type of maize, and where this crop has to be grown on the lighter classes of land. Crop from which seed was secured, tasselled in seven weeks from date of planting. Plants attain a height of from 7 to 8 feet and carry much foliage. Tassels large, bearing abundant pollen; silks plentiful. Ears borne midway on stalk and comparatively long, 9 to 10 inches pendulous, when ripe. Rows of grain 16 to 18 in number, and tightly packed on ears, which fill well at butts and tips. Husk covering light, but affording sufficient protection. Grain blunt-wedge shape; under medium size and of bright amber colour; yellow cap with crease dent.

Reid's Yellow Dent.—Matures in about 125 to 130 days. Had its origin in America over seventy years ago. The ears of this variety are perhaps more perfect in character and appearance than any other maize.

Good results have been obtained on the coast and inland districts up to 320 miles from the seaboard, at the Roma State Farm, indicating the cosmopolitan character of the variety. Plants 8 to 10 feet in height; stalk light, leafy, somewhat inclined to sucker. Tassels bear abundant pollen; silks plentiful. Ears robust, borne slightly above the middle of stalk, length 10 to 11 inches, pendulous when ripe. Rows of grain 18 to 20, closely and tightly packed. Inclination for tip of ear to be exposed when growth is forced on rich lands.

Boone County White.—A standard pearl-white variety, taking 135 to 145 days to mature. Well suited for coastal districts where a good rainfall is experienced. An excellent grain for cornflour manufacturing purposes, and is also a palatable fodder variety on account of its abundance of leaf and the high saccharine content of its stalks. Plants 8 to 10 feet in height. Ears robust, compact, cylindrical in shape, uniform in character, pendulous when ripe, 10 to 11 inches in length. Butts and tips well filled. Grain medium in size, blunt wedge-shape and of medium thickness, 18 to 20 rows to the ear. Husk covering fair. A prolific yielder on good land.

Cornplanter.—The favourite pearl-white variety of the Upper Murray, possessing similar characteristics to Boone County White, only slightly coarser, with somewhat larger grain.

Brazilian White.—The Bread Mealie of South Africa. A soft, starchy maize, useful for cornflour manufacturing purposes, and for making meals for consumption on the farm. Matures in 135 to 145 days;

suitable for coast and intercoastal districts. Plants 8 to 10 feet high, bearing two, and sometimes three, ears to the stalk. Ears compact, of medium size, well filled at butts and tips. Rows of grain regular, 12 to 14 in number. Grain slightly under medium size, smooth, soft, and starchy; creamy-white in colour, with a characteristic smooth dimple dent.

Grain Sorghums.—Yields have been improved by selection. This group of plants is particularly valuable for many reasons, one of which is that they will reproduce themselves and give excellent returns in the face of dry conditions, where maize would fail to give a crop. Excepting "Giant Honduras," which is suited to sub-tropical and tropical conditions, the other varieties, Cream Milo, Feterita, Standard Milo, Dwarf Milo, Shantung, Dwarf Kaoliang, Valley Kaoliang, and Red Kaffir Corn take three and a-half to four months to mature. All have been tested on the coastal and inland areas, and have borne out their reputation for hardihood, and can be recommended for both situations. They will grow in a variety of soils. Tests for grain production have been made, and the yields ran from 50 to 103 bushels per acre; the latter yield being secured at Boonah from Cream Milo. The grain is high in nutritive character, almost equal to wheat. White-coloured (Feterita) and cream-coloured (Cream Milo) make excellent porridge; the others, on account of seed-colour, are not suitable for this purpose, but all make excellent meal. These grains may be used whole or ground for horses, cattle, pigs, and poultry, and are invaluable. No mixed farm should be without its grain-sorghum patch. Spring and summer are the correct seasons to sow seed.

Giant Honduras Sorghum.—Non-saccharine; strong grower, 18 feet; requires rich land and a good rainfall. Takes several months to mature. Fodder yield obtained this season at Toogoolawah, on alluvial land, 41 tons 2 cwt. per acre. Useful as a bulky silage crop, but must not be left too long after it comes into head, as like all non-saccharine sorghums, the stalks become pithy.

Saccharine Sorghums.—The two fodder sorghums—S. Saccharatum and Early Amber Cane—have been improved by a system of selection to secure a heavy yielding green fodder strain. Yields from Departmental plots gave 18 and 21 tons per acre, respectively.

Soudan Grass.—Recommended as a hardy, drought-resisting fodder crop, suitable for silage and making a coarse palatable hay. Will grow on almost any class of agricultural land, and yielded over 10 tons of green fodder per acre at the Roma State Farm, on light sandy soil. Can be cut with open-backed reaper and binder. First cutting matures in from eight to ten weeks; a second cutting obtainable, and a light cutting may be expected in the second season.

Phalaris minor (an annual).—A winter and early spring-growing grass, suitable for the Downs. At Hermitage State Farm, on heavy black soil, this grass provided excellent feed for sheep and other stock, and is recommended for trial as a grass to fill a long-felt want.

(See advertisement in this issue.)

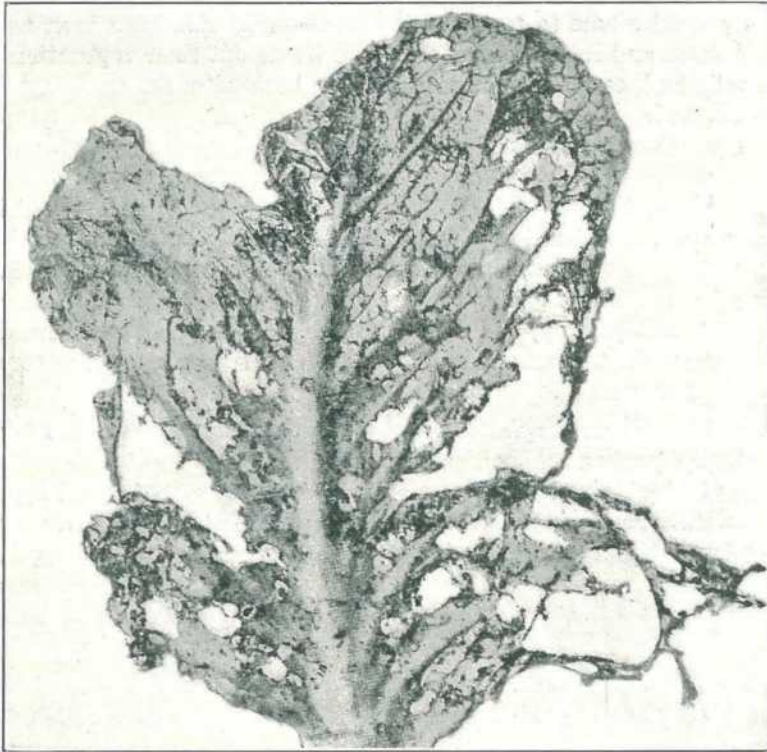
MARKET GARDENING.

THE SMALL CABBAGE MOTH.

There will be lots of trouble this autumn and winter from the small cabbage moth, unless readers watch their cruciferous crops carefully. Cruciferous crops are those of the cabbage family, and include the cauliflowers, kales, turnips, &c., of the vegetable garden, and more particularly stocks in the flower garden.

The trouble has already been brought to our notice on several occasions, and it will increase rapidly with the advent of the drier days of winter.

The illustrations reproduced with these notes have been specially prepared by the Division of Entomology with the object of making everyone familiar with the pest,



THE WORK OF THE CABBAGE MOTH.

Showing how leaves are eaten by the larvæ of the moth, from an illustration by the Division of Entomology.

and the damage it does, in the hope that a united effort may limit its numbers before they increase to such an extent that it is next to impossible to grow a cabbage, &c., free from its unwelcome attentions.

The pest is spread by crops being sent from infested areas to be sold in clean districts. Eggs, larvæ, and cocoons have been regularly found on both bags and crates, and the cabbages themselves. It behoves those whose gardens are free from the pest to guard against introduction in this way by destroying any suspected leaves purchased for culinary purposes.

THE EGG AND LARVA.

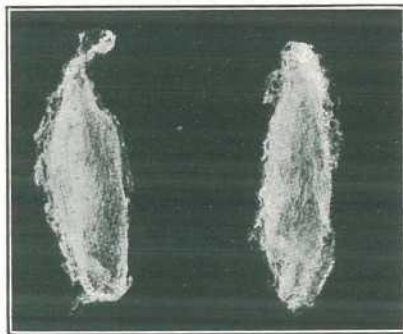
It is proposed to describe the pest as briefly as possible in its various stages of life. Before doing so we wish to acknowledge the assistance in this endeavour afforded by the recent investigations of Mr. D. Gunn, of the Division of Entomology, Pretoria, whose recommendations only enable us to give anything approaching a complete account of the moth. Previous to his investigations little was known of the life history of the pest, and until this is worked out the proper means of combating it cannot be given—the aim being to destroy it at the most vulnerable stage of its life.

The eggs are greenish-yellow, and on account of this colouring it is next to impossible to observe them without a magnifying glass. They are laid on the upper surface of the leaves, usually near the veins.

When the larva emerges from the eggs, it is somewhat less than a fifth of an inch in length, and light-green. After a few days' feeding it assumes a darker colour, and when closely examined a deeper green stripe may be detected down the middle of the back. When full grown the larva is only two-fifths of an inch. It must not be despised, however, on account of its size, as it is capable of doing immense damage. A characteristic liveliness when disturbed, and the fact that after wriggling in an erratic manner it drops either to earth or part of the way, suspended by a silken thread, should make recognition easy. The larval stage lasts about fifteen to eighteen days in summer, and much longer in winter, during which time it feeds on the under surface of the leaves, spinning a gauze-like web over the part of the leaf upon which it happens to be busy.



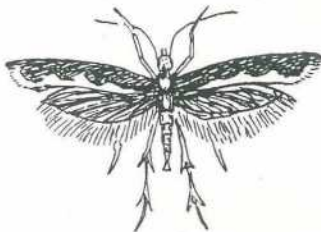
Larva.



Cocoons.



Pupa removed from Cocoon.



Adult.

(All enlarged.)



Adult, side view.

THE COCOON AND ADULT.

When mature, the larva encloses itself in a gauze-like cocoon, and gradually becomes a pupa, remaining attached to the under surface of the leaf. In this stage it remains from five to seven days in the summer, and about fourteen days in the winter.

The moth, which emerges, has ash-grey fore wings and light-brown hind wings. The fore wings are covered with a number of black dots, with white stripes on the inner margins, making them appear somewhat diamond-shaped when folded in rest.

They are night flyers, and may frequently be seen around bright lights. When disturbed amongst their food plants during the day they are weak fliers, and never travel far. They only live a few days, from about seven to ten.

From what has been written above, it will be seen that the life of an individual insect is not long, and it may be safely guessed that the number of generations is correspondingly large. During the investigations carried out by Mr. Gunn, ten generations were reared in a few days over a year. The larva of the moth is attacked, and destroyed by several insects—notably the green mantid, but unfortunately it does not appear until about the end of October, by when most of the damage is done.

REMEDIES.

The insect is comparatively easy to control in the larval stage by spraying the plants with the well-known arsenate of lead solution—*i.e.*, 3 lb. arsenate of lead paste or $1\frac{1}{2}$ of powder, dissolved in 50 gallons of water.

The bloom of the cabbage plants prevents the solution adhering really well, and Mr. Gunn found that if 2 lb. of resin were added to each 50 gallons the remedy was much more effective.

Arsenate of lead powder being easier to weigh, it is recommended in preference to paste.

On account of its poisonous nature, arsenate of lead is not recommended for use on mature plants, and for this reason experiments were made with other solutions.

Tobacco extract (one gallon to 50 of water) was found to destroy the larva readily, but whatever brand be used it should contain at least 6 per cent. nicotine, and be non-arsenical. Soap or resin should be added to make the solution more adhesive. Two pounds of either to 50 of water will suffice. It will be found convenient to dissolve them in a little hot water, and add to the bulk solution when dissolved.

In his experiments Mr. Gunn used an insecticide not commonly known to our readers. We thus purpose giving you the recipe in his own words. It is known as

TAR EMULSION, OR TAR WATER,

and is prepared as follows:—Gas or coal tar, 1 gallon; soap, 2 lb.; water, 180 gallons.

As the above quantity may be considered too large to prepare at one time, formulae for the preparation of smaller quantities are given:—

Gas or coal tar, $1\frac{1}{2}$ bottles, $\frac{3}{4}$ bottle, $\frac{1}{2}$ bottle.

Soap, 9 ounces, 5 ounces, $2\frac{1}{2}$ ounces.

Water, 50 gallons, 25 gallons, 10 gallons.

First place 2 gallons of water in a pot over a fire until it boils. Then place the soap, which has been cut in small pieces, into the water. After the soap has been dissolved, put the tar in the pot, and allow the mixture to cook for two hours. The mixture should be frequently stirred, and after it has been thoroughly cooked, the remainder of the water should be added. It is preferable to spray the preparation immediately after it has become cool, as it has been found by practical experiments that better results are obtained than if it is allowed to stand for some time.

The tobacco and tar mixtures have to be sprayed directly upon the insect to destroy it, and they are therefore known as contact insecticides. As the larvæ invariably feed upon the under-side of leaves of plants, it is essential that an under-spray attachment should be used.

For spraying a small plot in a garden, a bucket or knapsack spray-pump will be found to be satisfactory, but when a field has to be treated, a barrel spray-pump placed on a trolley is necessary, in order to perform the work expeditiously.

Cabbage and cauliflower plants which are grown in seed-beds are liable to become infested with the larvæ of this moth, and they should therefore be sprayed before being planted out in gardens or fields. If this is not done immediately after the larvæ are observed, the leaves may become full of small holes and the plants may become stunted in their growth or even destroyed.

When a garden or field has become infested, all old plants left after the crop has been gathered should be pulled up and either burned or covered in deep pits in the soil. If this is not done, these plants will continue to be breeding places for the insect and cause the infestation of young cabbage and cauliflower plants at a later date.—“South Australian Gardening and Country Life.”

THE VALUE OF THE COMPOST HEAP.

The great value of a compost heap to the market gardener is not generally recognised by those to whom it would be of immense service at all times, but especially at a time like the present, when artificial and indeed most natural animal manures are either unobtainable or obtainable in insufficient quantities. What is a compost heap? The "Farmers' Handbook," issued by the Department of Agriculture of New South Wales, thus describes its composition:—

The compost heap is a most valuable adjunct to the farm, and it is a very great pity that it is not more frequently to be found. A heap or pit can be made very economically, and is of special value in that it utilises all sorts of vegetable and animal refuse, which would otherwise be wasted, and converts it into a valuable manure, rich in organic matter, and eminently suited for soils low in humus or subject to droughty conditions.

The principle of the compost heap is the fermentation of easily-decomposed vegetable matter in the presence of earth and lime. It is not only substances like peat and straw, which form the usual basis of compost heaps, that are thus decomposable, but almost every kind of organic substance, both of vegetable and animal origin, can be thus composted.

Dead leaves, bush scrapings, sawdust, weeds, tops and stalks of vegetables, as well as bone and animal refuse, can be treated in this manner. In the case of animal refuse, the operation is much slower, and substances like bone should be first crushed. It is also important to be sure that animal refuse so treated is not derived from a diseased source.

As a general method of procedure the following will be found satisfactory:— Make a heap with alternate layers of earth, refuse, and lime. Under the term "refuse" is included all the refuse material of animal or vegetable material mentioned above. Cover the whole with a layer of earth. When a sufficient quantity of refuse is again collected, place it on top of the heap and cover with a layer of lime, and lastly of earth, until the heap is 3 or 4 ft. high. The heap should be kept moist, and for this purpose all refuse water from the house, slops, urine, &c., should be added. The heap may be conveniently watered by making a hole into the interior and pouring the liquid in. The outer covering of earth has the object of absorbing any ammonia which is evolved in the process of fermentation and by the action of the lime.

When the heap has been prepared it must be left to itself to ferment for some time. Probably a few months will be sufficient unless very refractory substances, such as bone, &c., are present. In a few months' time it should be well forked over and another layer of lime, and finally of earth, should be added. In the course of another month or two it should be ready for use, and you will have provided yourself at a very slight cost with an excellent manure, rich in humus, and will have utilised for the purpose a great amount of refuse material which would otherwise be lost or burnt.

Instead of a heap the compost may be conveniently prepared in a pit. In either case the bottom should be cemented, or so drained that the liquid escaping from the mass can be collected and returned to the compost.

It will be found advantageous to prepare a second heap while the first one is ripening and being used. It will also be found that if it is desired to use more concentrated fertilisers, such as superphosphates, potash, and ammonium salts, these can be mixed with advantage with the compost manure before being applied to the land. Used in this way they will be in less danger of leaching away, and will be of greater benefit than if applied directly to the land.

A PRINCELY GIFT FROM SIAM.

In the May issue of the Journal we published an extract from the "London Times," in which it was stated that the Federated Malay States had contributed £128,000 to the Mackay Flood Relief Fund. The "Brisbane Courier" made a search for the paragraph in the "Times," but no reference to the announcement could be found. The matter has been cleared up, however, by the receipt of a letter by the Acting-Premier from the Agent-General, in which he says:—"The British Minister at Bangkok has informed the Colonial Office that there is no foundation for the report that a relief fund was raised for the sufferers by the Queensland floods, and he suggests that the Press statements have confused the Mackay Fund with an amount raised for the relief of sufferers from the floods in Siam."

Pastoral.

BREEDERS OF PUREBRED STOCK IN QUEENSLAND—BEEF AND DAIRY CATTLE.

The Office of the Secretary of the undermentioned Herd Books is 303 Queen street, Brisbane:—

- The Australian Hereford Herd Book;
- The Shorthorn Herd Book of Queensland;
- The Jersey Herd Book of Queensland;
- The Illawarra Herd Book of Queensland;
- The Ayrshire Herd Book of Queensland;
- The Milking Shorthorn Herd Book of Queensland;
- The Holstein-Friesian Herd Book of Australia.

NOTE.—Animals registered in the Commonwealth Standard Herd Book are not necessarily eligible for entry in the Jersey Herd Book of Queensland.

Name of Owner.	Address.	Number of Males.	Number of Females.	Herd Book.
DAIRY BREEDS.				
AYRSHIRES.				
L. H. Paten	"Jeyendel," Calvert, S. & W. Line	8	21	Ayrshire Herd Book of Queensland
J. H. Paten	Gwandalan, Yandina	6	21	Do.
Queensland Agricultural College	Gatton	4	40	Do.
State Farm	Warren	3	83	Do.
J. W. Paten	Ayrshire Park, Wanora, Ipswich	10	42	Do.
J. H. Fairfax	Marinya, Cambooya	9	55	Do.
J. Holmes	"Longlands," Pittsworth	6	20	Do.
H. M. Hart	Glen Heath, Yalangur	7	21	Do.
F. A. Stimpson ..	Ayrshire Stud, Fairfield, South Brisbane	7	77	Do.
M. L. Cochrane ..	Paringa Farm, near Cairns	5	21	Do.
John Anderson ..	"Fairview," Southbrook	7	34	Do.
JERSEYS.				
T. Mullen	"Norwood," Chelmer	3	20	Jersey Herd Book of Queensland
Queensland Agricultural College	Gatton	2	31	Do.
M. W. Doyle	"Oaklands," Moggill	4	12	Do.
G. A. Buss	Bundaberg	1	15	Do.
R. Conochie	Brooklands, Tingooora	9	21	Do.
W. J. Barnes	Millstream Jersey Herd, Cedar Grove	10	37	Do.
W. J. Affleck	Grasmere, N. Pine ..	6	31	Do.
J. N. Waugh and Son	Prairie Lawn, Nobby	3	28	Do.
W. J. H. Austin ..	Hadleigh Jersey Herd, Boonah	2	11	Do.
State Farm, Kairi ..	Kairi, <i>via</i> Cairns ..	4	16	Do.
H. D. B. Cox	Sydney (entered in brother's name)	3	16	Commonwealth Standard Jersey Herd Book

BREEDERS OF PUREBRED STOCK IN QUEENSLAND—*continued.*

Name of Owner.	Address.	Number of Males.	Number of Females.	Herd Book.
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DAIRY BREEDS—*continued.*

GUERNSEYS.

Queensland Agricultural College	Gatton	2	2	Eligible, but no Guernsey Herd Book of Australia
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HOLSTEINS.

Queensland Agricultural College	Gatton	2	9	Holstein-Friesian Herd Book of Australia
George Newman	.. "St. Athan," Wyreema	12	47	Do.
F. G. C. Gratton	.. "Towleston," Kingsthorpe	1	..	Do.
R. S. Alexander	.. Glenlomonad Farm, Coolumboola	1	3	Do.
Ditto	.. Ditto	1	..	Holstein-Friesian Herd Book of New Zealand
S. H. Hoskings	.. St. Gwithian, Toogoolowah	..	..	Holstein-Friesian Herd Book of Australia
C. Behrendorff	.. Inavale Stud Farm, Bunjurgun, Q.	3	9	Do.
E. Swayne, M.L.A.	.. West Plane Creek, Mackay	1	2	Do.

ILLAWARRA.

A. Pickels	.. .. Blacklands Stud, Wondai	4	62	Illawarra Herd Book of Queensland
J. T. Perrett and Son	.. Corndale, Coolabunia	2	36	Do.
W. T. Savage	.. .. Ramsay	2	22	Do.
Hunt Bros.	.. .. Springdale, Maleny ..	3	62	Do.

MILKING SHORTHORNS.

P. Young	.. .. Talgai West, Ellinthorp	2	42	Milking Shorthorn Herd Book of Queensland
W. Rudd	.. .. Christmas Creek, Beaudesert	2	10	Do.
A. Rodgers	.. .. Torran's Vale, Lane-field	1	9	Do.
W. Middleton	.. .. Devon Court, Crow's Nest	3	27	Do.

BEEF BREEDS.

SHORTHORNS.

T. B. Murray-Prior	.. Maroon, Boonah ..	2	37	Queensland Shorthorn and Australian Herd Books
C. E. McDougall	.. Lyndhurst Stud, Warwick (2)	25	100	Queensland Shorthorn Herd Book
Godfrey Morgan	.. "Arubial," Condamine	3	6	Do.
W. B. Slade	.. .. E. Glengallan, Warwick	2	20	Do.

BREEDERS OF PUREBRED STOCK IN QUEENSLAND—*continued.*

Name of Owner.	Address.	Number of Males.	Number of Females.	Herd Book.
BEEF BREEDS—<i>continued.</i>				
HEREFORD.				
A. J. McConnell ..	Dugandan, Boonah	19	36	Australian Hereford Herd Book
E. M. Lumley Hill ..	Bellevue House, Bellevue	45	127	Do.
Tindal and Son ..	Gunyan, Inglewood	50	400	Do.
SUSSEX.				
James T. Turner ..	The Holmwood, Neurum	2	4	Sussex Herd Book of England

Dairying.

THE DAIRY HERD, QUEENSLAND AGRICULTURAL COLLEGE, GATTON.

MILKING RETURNS OF COWS FROM 30TH MARCH, TO 29TH APRIL, 1918.

Name of Cow.	Breed.	Date of Calving.	Total Milk.	Test.	Commercial Butter.	Remarks.
			Lb.	%	Lb.	
Lady Melba ...	Holstein ...	31 Mar., 1918	1,176	3.5	45.54	
Leda's Jessie ...	Jersey ...	25 Mar. "	534	5.5	34.75	
Lady Margaret ...	Ayrshire ...	27 Dec., 1917	693	4.4	34.22	
Leading Lady ...	Jersey ...	26 Dec. "	459	6.2	33.69	
Constasy ..	Ayrshire ...	7 April, 1918	601	4.8	32.52	
Miss Bell ...	Jersey ...	27 June, 1917	452	5.8	31.00	
Violette's Peer's Girl	" ...	26 Oct. "	434	5.8	29.77	
Sweet Meadows ...	" ...	8 Aug. "	407	6.0	28.92	
Netherton Belle ...	Ayrshire ...	17 July "	464	5.2	28.48	
College St. Margaret	Jersey ...	9 Nov. "	426	5.6	28.19	
Burlesque ...	" ...	6 Oct. "	345	6.4	26.07	
Jeannie ..	Ayrshire ...	13 Dec. "	607	3.7	24.98	
College Bluebell ...	Jersey ...	28 June "	345	6.1	24.90	
Thornton Fairetta	" ...	30 June "	296	7.0	24.59	
Hedge's Nattie ...	Holstein ...	1 Feb., 1918	663	3.3	24.06	
Lady Spec... ..	Ayrshire ...	19 Feb. "	731	3.0	24.06	
College Damsel ...	Holstein ...	12 July, 1917	478	4.4	23.70	
Miss Edith... ..	Jersey ...	23 Dec. "	503	4.2	23.66	
Royal Mistress ...	Ayrshire ...	13 Mar., 1918	513	4.1	23.52	
Songstress ...	" ...	1 Oct., 1917	402	4.9	22.22	
Mistress Bee ...	Jersey ...	23 Jan., 1918	546	3.6	21.84	
Comedienne ...	" ...	13 Dec., 1917	378	5.1	21.78	
Iron Plate ...	" ...	14 Oct. "	505	3.8	21.38	
Miss Edition ...	" ...	12 Nov. "	469	4.0	20.96	
College Ma Petite	" ...	10 Nov. "	411	4.5	20.78	
Lady Dorset ...	Ayrshire ...	14 Aug. "	451	4.2	20.71	
Belinda ...	" ...	14 Jan., 1918	568	3.3	20.70	
Lady Peggy ...	" ...	30 Mar. "	515	3.6	20.60	
Hedge's Madge ...	Holstein ...	22 Mar., 1917	361	5.0	20.37	
Hedge's Dutchmaid	" ...	9 Sept. "	523	3.5	20.29	

Poultry.

REPORT ON EGG-LAYING COMPETITION, QUEENSLAND AGRICULTURAL COLLEGE, APRIL, 1918.

The Dixie egg plant wins the monthly prize with 139 eggs, while W. Smith leads in the heavy breed with a score of 105. The birds have settled down well. The number of cases of false moults have been so few that they are not with mentioning. A few birds paled off, but show signs of an early commencement of laying again. Several birds were treated for minor ailments and recovered. There were three cases of broodiness amongst the heavy breeds. Taking things all through, progress appears to be very satisfactory. The weather conditions have been excellent. The following are the individual records:—

Competitors.	Breed.	April.
LIGHT BREEDS.		
*Dixie Egg Plant	White Leghorns	139
*Mrs. L. Henderson	Do.	114
*T. Fanning	Do.	104
Progressive Poultry Farm	Do.	104
Harold Fraser	Do.	103
B. Caswell	Do.	101
*Range Poultry Farm	Do.	99
*E. Chester	Do.	95
*Dr. E. C. Jennings	Do.	95
*L. G. Innes	Do.	95
*C. Knoblauch	Do.	93
*O.K. Poultry Yards	Do.	92
*W. Becker	Do.	91
*Geo. Prince	Do.	90
*C. P. Buchanan	Do.	86
*G. W. Hudes	Do.	85
G. Williams	Do.	82
S. Wilkinson	Do.	80
*G. Howard	Do.	76
*G. H. Turner	Do.	74
*Chris. Porter	Do.	71
O. W. J. Whitman	Do.	71
*Thos. Taylor	Do.	70
Mrs. L. F. Anderson	Do.	69
*Oakland Poultry Farm	Do.	67
J. J. Davies	Do.	67
*W. Lvell	Do.	64
H. F. Britten	Do.	64
*Mrs. A. T. Coomber	Do.	63
*Quinn's Post Poultry Farm	Do.	62
*J. W. Newton	Do.	62
*T. B. Hawkins	Do.	61
*E. A. Smith	Do.	60
*J. Zahl	Do.	52
Geo. Trapp	Do.	52
Mrs. A. G. Kurth	Do.	50
*Homalayan Poultry Farm	Do.	49
H. B. Stephens	Do.	44
R. T. G. Carey	Do.	41
*J. M. Manson	Do.	40

EGG-LAYING COMPETITION—*continued.*

Competitors.	Breed.	April.
LIGHT BREEDS— <i>continued.</i>		
B. Chester	White Leghorns ...	37
*Rupert Holmes	Do.	36
P. O. Oldham	Do.	34
*Mrs. R. Hunter	Do.	20
A. W. Walker	Do.	13
Shaw and Stevenson	Black Leghorns ...	8
W. A. Wilson	White Leghorns ...	3
HEAVY BREEDS.		
*W. Smith	Black Orpingtons ...	105
*W. H. Reilly	Chinese Langshans ...	95
*A. E. Walters	Black Orpingtons ...	92
*Nobby Poultry Farm	Do.	89
T. Hindley	Do.	67
*E. F. Dennis	Do.	51
W. J. Mee	Do.	51
H. Puff	Rhode Island Reds ...	49
*E. Morris	Black Orpingtons ...	48
*J. W. Macrae	Do.	40
*D. Fulton	Do.	35
E. M. Larsen	Do.	24
*Mars Poultry Farm	Do.	12
*R. Burns	Do.	10
Jas. Fitzpatrick	Rhode Island Reds ...	4
*F. A. Claussen	Do.	0
A. Shanks	Black Orpingtons ...	0
Th. W. Lutze	Do.	0
Total ... ..	...	4,000

* Indicates that the pen is engaged in single hen test.

SINGLE HEN PEN RESULTS.

Competitor.	A.	B.	C.	D.	E.	F.	Total.
LIGHT BREEDS.							
Dixie Egg Plant	21	21	26	21	24	26	139
Mrs. L. Henderson	21	21	18	11	22	21	114
T. Fanning	16	17	20	15	19	17	104
Range Poultry Farm	14	21	17	18	11	18	99
E. Chester	12	22	13	19	22	7	95
Dr. Jennings	18	15	20	19	18	5	95
L. G. Innes	3	22	22	18	10	20	95
C. Knoblauch	10	5	21	14	22	21	93
O.K. Poultry Yards	19	17	18	6	16	16	92
W. Becker	10	17	15	18	13	18	91
Geo. Prince	2	17	18	19	19	15	90
C. P. Buchanan	16	4	19	8	20	19	86
G. W. Hindes	25	21	16	16	6	1	85
G. Howard	9	9	17	9	16	16	76
G. H. Turner	0	12	16	13	20	13	74
Chris. Porter	0	18	9	16	13	15	71
Thos. Taylor	20	16	17	0	6	11	70

SINGLE HEN PEN RESULTS—*continued.*

Competitors.	A.	B.	C.	D.	E.	F.	Total.
Oakland Poultry Farm	8	13	21	16	2	7	67
W. Lyell	19	17	16	12	0	0	64
Mrs. A. T. Coomber	9	10	10	6	10	18	63
Quinn's Post Poultry Farm	16	16	1	10	18	1	62
J. W. Newton	15	16	1	4	19	7	62
T. B. Hawkins	11	1	18	8	16	7	61
E. A. Smith	0	23	5	17	15	0	60
John Zahl	14	12	3	10	7	6	52
Homalayan Poultry Farm	17	12	6	0	14	0	49
J. M. Manson	21	3	13	1	1	1	40
R. Holmes	17	10	0	2	1	6	36
Mrs. R. Hunter	1	17	0	0	1	1	20

HEAVY BREEDS.

W. Smith	21	24	2	14	20	22	105
W. H. Reilly	23	19	14	12	9	18	95
A. E. Walters	16	17	13	19	20	7	92
Nobby Poultry Farm	21	18	13	6	9	22	89
E. F. Dennis	21	0	7	0	18	5	51
E. Morris	1	16	16	15	0	0	48
J. W. Macrae	0	0	13	0	17	10	40
D. Fulton	3	2	4	2	1	23	35
Mars Poultry Farm	0	0	12	0	0	0	12
R. Burns	0	0	0	0	9	1	10
F. A. Claussen	0	0	0	0	0	0	0

FINAL REPORT OF THE FOURTEENTH EGG-LAYING COMPETITION.

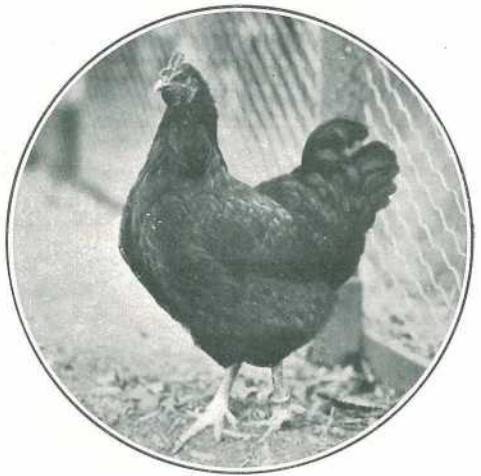
The fourteenth egg-laying competition at the Queensland Agricultural College was concluded on 31st March, 1918. In all, 438 birds competed, 318 in group pens, while the balance of 120 were tested singly. It has again been demonstrated that the group system can in no way compare with the single hen testing, and it is certain that competitors generally will look forward to the time when group pens are a thing of the past.

WEATHER CONDITIONS.

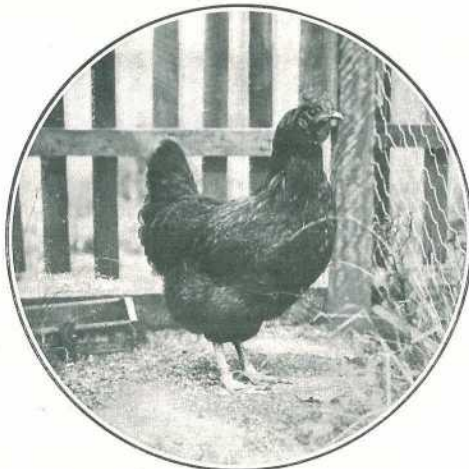
The past year has been very unfavourable. From the beginning of April until the beginning of September conditions were exceptionally dry, heavy westerly winds extending over weeks being characteristic. From September to the end of January we were deluged with excessive rain, which kept the pens sodden and forced the birds to remain in their houses for days at a time. To these exceptional conditions can be attributed the lower total yield.



Mr. R. Burns's "E" Bird,



Mr. E. F. Dennis's "D" Bird,



Mr. R. Burns's "F" Bird—335 eggs in 365 days.



Mr. J. M. Manson's "F" Bird,



Mrs. J. R. D. Munro's "A" Bird.

FEEDING.

The quality of the feed used for the birds was, on the whole, very poor. Owing to the pooriness of the pollard, at times it required fully three parts of pollard to one part of bran to get a balanced ration, instead of the usual ratio of two to one. Good pollard seems to be unprocurable, having in some cases a resemblance to fine bran, while in other cases it has a dark colour with an appearance of containing some foreign matter. Dried blood was used for animal food, 5 per cent. being added to the morning mash after the expiration of the first month of the competition, this quantity being increased to 7 per cent. during months when the birds were in full lay. The birds were brought gradually to the blood, as there is a danger of serious harm being caused by feeding to birds that had not received stimulating food prior to entering the competition. It would be advisable that all intending competitors should bear in mind that better results from their birds would be obtained if they kept them on a moderate ration before sending forward. There would not then be the number of birds breaking into partial moults and getting checks. Very little bonemeal was used, as, in our opinion, lime and ash can be fed to the birds in a more digestible form. Four per cent. Sunlight oilcake was fed. No condiments were used, with the exception of a small quantity of spice, which was given during the continuance of the westerly winds and the worst wet weather. Green lucerne and sow thistles were used as green foods, fed to the birds last thing in the evening, and given in sufficient quantity to provide for some being left in the morning, when it was almost as fresh as when given the night before. Soup meat was fed twice a week in the middle of the day; but, unfortunately, it was unprocurable during part of the winter and at a time when the meat would have been most beneficial, if only to give the birds exercise running about with it. Charcoal and shell grit were always before the birds.

GENERAL RESULTS.

The egg production was not satisfactory, the average being the lowest obtained in the College competitions. On the other hand, two records were established. A Black Orpington hen owned by Mr. R. Burns, Sladevale, Warwick, laid 335 eggs in 365 days, while Mr. E. Chester's pen of White Leghorns established a new Queensland record of 1,661 eggs for six hens in 365 days. In both these cases the birds were allowed to continue until 2nd April, so as to complete the full 365 days. It is to be regretted, however, that in both of these cases the birds were disqualified from taking prizes, as the eggs laid were below the standard of 24 oz. to the dozen.

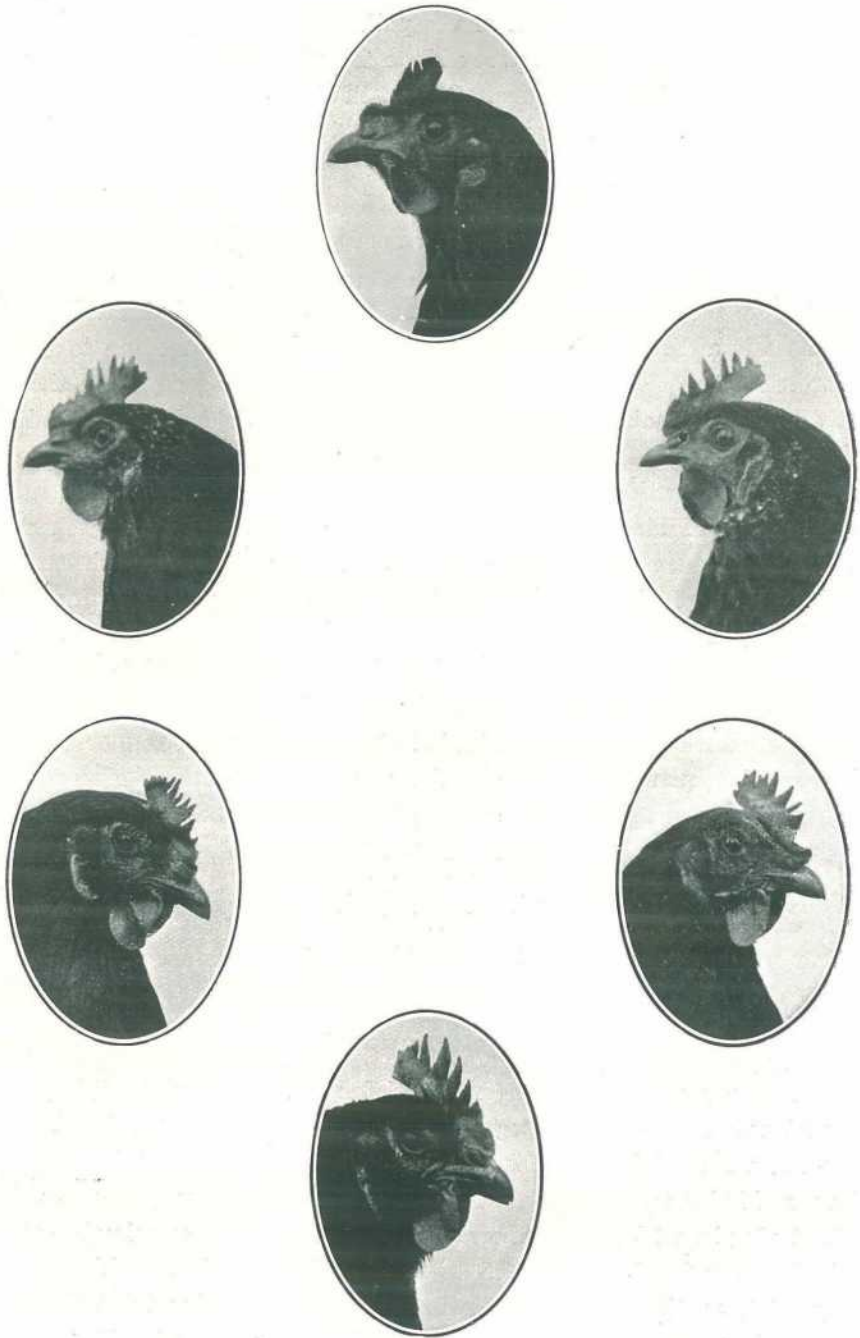


PLATE 20.—THE HEADS OF MR. R. BURNS'S PEN OF BLACK ORPINGTONS.



PLATE 21.—THE HEADS OF MR. E. CHESTER'S PEN.

HEALTH OF STOCK.

Considering the most unfavourable weather the birds had to experience, the general health has been splendid. Only one death resulted from roup, which seems remarkable, when it has to be taken into consideration that the birds were confined to their perches at times for a week at a stretch. Long periods elapsed between the times that the ground was in a fit state for the birds to have a dust bath. There were six cases of consumption or wasting disease. Two, which were also at the same time wasting, died from heat. Six were lost through ovarian trouble, three of which were cases of broken blood vessels through straining on the nest. Two died from enteritis and one from enlarged liver. Total number of deaths, eighteen.

There were several birds which required medical treatment, and these, in some cases, spoiled their owners' chances of gaining a prominent position in the competition. The suggestion of destroying such birds and having them replaced is a matter which should receive attention at the next Queensland Poultry Conference.

BROODIES.

Broodiness has been troublesome throughout the competition. There were 554 cases recorded, the highest number for a group of six hens being 47, while other groups gave 38, 36, 35, 33, 30, 29, 25, 23, 22, and downwards. It is possible that the excessive wet weather may have been partly responsible for the excessive broodiness, for it is quite conceivable that the maternal instinct to brood might have been encouraged under conditions which gave no inducement for the birds to leave the nest for a less favourable position on the perch, while giving them the satisfaction of feeling a number of eggs under them.

WEIGHT OF EGGS.

In the College competition great importance is attached to the average weight of eggs. In conformity with the opinions generally accepted, a standard of 24 oz. to the dozen has been adopted. In August the eggs of birds in the competition were weighed, and, finding that the weights were disastrously low, a second weighing was carried out, as it was thought that the violent windy weather obtaining during the first weighing might have had a lowering influence. But the second weighing confirmed the first results, and at various times since then eggs of some birds and pens have been weighed and showed practically no change over those obtained in August. Thus the weights published have been confirmed, and they disclose a very unfortunate prevalence of small eggs in our various flocks. It certainly is no advantage for eggs

to be too large, but it is equally a disadvantage for eggs to be too small, and we think that breeders could, with advantage to themselves, devote more attention to this side of egg production.

TYPE.

The types of the competing birds were most variable, and show most emphatically that severe steps must be taken to save some of the breeds from losing every resemblance to their standard. Although the utility societies of the Commonwealth have drawn up a standard for utility purposes, there are, however, certain flaws in it that must be rectified for the good of several breeds. A number of competitors seem to be under the impression that, when more size and closer approach to the standard were asked for, what was required was the biggest and often the coarsest birds they could pick up in their yards. The consequences have been—less eggs, more broodiness, bad average, and disappointment.

The full returns of eggs laid, prize lists, and balance-sheet are attached.

WEIGHTS OF EGGS.

The following table of results shows the weight of the eggs to the nearest eighth of an ounce:—

Pen.	Competitor.	Average Weight. Oz.	Pen.	Competitor.	Average Weight. Oz.
1	Miss Hinze	2 $\frac{1}{8}$	28	R. Holmes	2 $\frac{1}{4}$
2	W. Thomas (Quinn's) ..	2	29	W. Becker	2
3	F. W. Loney	1 $\frac{3}{4}$	30	C. P. Buchanan	2
4	Moritz Bros.	2	31	Mrs. Carruthers	2 $\frac{1}{8}$
5	T. B. Hawkins	2	32	G. Williams	2
6	Oakland Poultry Farm ..	2 $\frac{1}{4}$	33	Mars P. Farm	2 $\frac{1}{8}$
7	C. Porter	2	34	A. Shillig	2
8	T. A. Pettigrove	2	35	G. Howard	1 $\frac{3}{4}$
9	E. A. Smith	2	36	G. J. White	2 $\frac{1}{8}$
10	C. Knoblauch	1 $\frac{7}{8}$	37	J. H. Newton	1 $\frac{7}{8}$
11	J. Ferguson	2 $\frac{1}{4}$		<i>Heavy Breeds.</i>	
12	E. Chester	1 $\frac{7}{8}$	38	H. Jobling	2 $\frac{1}{8}$
13	D. Fulton	2	39	D. Kenway	2
14	G. Chester	1 $\frac{3}{4}$	40	R. Burns	1 $\frac{7}{8}$
15	Mrs. S. J. Sear	2	41	King and Watson	1 $\frac{7}{8}$
16	L. G. Innes	2	42	Mrs. J. H. Jobling	2 $\frac{1}{8}$
17	C. H. Singer	1 $\frac{3}{4}$	43	P. C. McDonnell	1 $\frac{7}{8}$
18	E. Cross	2	44	Cowan Bros.	2
19	J. Holmes	2 $\frac{1}{8}$	45	F. Clayton	2 $\frac{1}{8}$
20	T. Taylor	1 $\frac{7}{8}$	46	C. B. Bertelsmeier	1 $\frac{7}{8}$
21	Kelvin P. Farm	1 $\frac{3}{8}$	47	A. E. Walters	2
22	W. R. Crust	2	48	W. Smith	1 $\frac{7}{8}$
23	J. G. Richter	1 $\frac{7}{8}$	49	E. Morris	1 $\frac{3}{4}$
24	S. C. Chapman	1 $\frac{7}{8}$	50	J. M. Manson	2
25	Mrs. W. D. Bradburne ..	2 $\frac{3}{8}$	51	C. C. Dennis	2
26	A. H. Padman	2	52	W. G. Hansen	2
27	F. Clayton	2	53	F. A. Claussen	2 $\frac{1}{8}$

SINGLE HEN PEN.

No.	Competitor.	A.	B.	C.	D.	E.	F.	Group.
1	C. C. Dennis	Oz. $2\frac{1}{8}$	Oz. 2	Oz. 2	Oz. $2\frac{1}{8}$	Oz. $2\frac{1}{8}$	Oz. $1\frac{7}{8}$	Oz. 2
2	J. M. Manson	2	$1\frac{7}{8}$	$2\frac{1}{8}$	2	$2\frac{1}{8}$	2	2
3	Mrs. J. R. Munro	2	2	2	2	$2\frac{1}{8}$	2	2
4	A. E. Walters	2	2	$2\frac{1}{8}$	2	$1\frac{7}{8}$	$1\frac{7}{8}$	2
5	G. H. Turner	$2\frac{1}{4}$	$1\frac{7}{8}$	2	$1\frac{7}{8}$	$2\frac{1}{8}$	2	2
6	J. Zahl	2	$2\frac{1}{4}$	$1\frac{7}{8}$	$2\frac{1}{8}$	2	2	2
7	J. R. Wilson	2	2	$2\frac{1}{4}$	$2\frac{1}{8}$	$1\frac{7}{8}$	2	2
8	T. Fanning	2	2	$1\frac{7}{8}$	2	$2\frac{1}{8}$	2	2
9	Dixie Egg Plant	2	2	$2\frac{1}{8}$	$2\frac{1}{8}$	2	..	2
10	Dr. Jennings	$1\frac{7}{8}$	2	$1\frac{3}{4}$	2	2	2	$1\frac{7}{8}$
11	A. W. Bailey .. ..	..	$2\frac{1}{8}$	$2\frac{1}{4}$	$2\frac{1}{4}$	$2\frac{1}{4}$	$2\frac{1}{8}$	$2\frac{1}{4}$
12	A. T. Coomber	$2\frac{1}{8}$	$2\frac{1}{8}$	$1\frac{7}{8}$	2	$2\frac{1}{8}$	2	2
13	Mars P. Farm	2	$1\frac{1}{8}$	2	2	$1\frac{3}{4}$	$1\frac{7}{8}$	$1\frac{7}{8}$
14	E. A. Smith	$1\frac{7}{8}$	$2\frac{1}{8}$	$1\frac{7}{8}$	$1\frac{7}{8}$	$2\frac{1}{4}$	2	2
15	R. Burns	$2\frac{1}{4}$	2	$2\frac{1}{4}$	2	$2\frac{1}{8}$	$1\frac{3}{4}$	$2\frac{7}{8}$
16	Kelvin P. Farm	$1\frac{3}{4}$	2	$1\frac{7}{8}$	$1\frac{7}{8}$	$1\frac{3}{4}$	$1\frac{3}{4}$	$1\frac{7}{8}$
17	Miss Hinze	$2\frac{1}{8}$	2	$1\frac{7}{8}$	2	$1\frac{7}{8}$	$2\frac{1}{8}$	2
18	E. F. Dennis	$1\frac{7}{8}$	$1\frac{3}{4}$	$1\frac{7}{8}$	$1\frac{3}{4}$	$1\frac{3}{4}$	2	$1\frac{7}{8}$
19	Oakland P. Farm	$1\frac{3}{4}$	$1\frac{3}{4}$	2	..	$1\frac{7}{8}$	2	$1\frac{7}{8}$
20	F. W. Loney	$1\frac{7}{8}$	$2\frac{1}{8}$	$1\frac{7}{8}$	$1\frac{7}{8}$	2	$2\frac{1}{8}$	2

TRUE TO TYPE.

The following pens were declared ineligible for the True to Type prizes:—

H. Jobling, N.S.W. .. ..	.. ..	Black Orpingtons
F. Clayton, N.S.W. .. ..	.. ..	Rhode Island Reds
R. Burns .. ..	.. ..	Black Orpingtons
T. B. Hawkins .. ..	.. ..	White Leghorns
T. A. Pettigrove .. ..	.. ..	Do.
C. Knoblauch .. ..	.. ..	Do.
D. Fulton .. ..	.. ..	Do.
W. R. Crust .. ..	.. ..	Do.
T. Taylor .. ..	.. ..	Do.
C. C. Dennis .. ..	.. ..	Do.
J. Zahl .. ..	.. ..	Do.
W. Bailey .. ..	.. ..	Do.

PRIZE MONEY ALLOTTED.

		LIGHT BREEDS.					
		£	s.	d.	£	s.	d.
G. H. Turner—							
Divided first and second general aggregate		3	13	6			
Divided first and second true to type aggregate		2	12	6			
Second winter test		2	2	0			
Third single test		1	1	0			
		<hr/>			9	9	0
J. M. Manson							
Third general aggregate		2	2	0			
Third true to type aggregate		1	1	0			
First single test		3	3	0			
Monthly prizes—June, Sept., Oct., Nov., Dec.		2	12	6			
		<hr/>			8	18	6
W. Becker—							
Divided first and second general aggregate		3	13	6			
Divided first and second true to type aggregate		2	12	6			
Third winter test		1	1	0			
		<hr/>			7	7	0
E. Chester—							
First winter test		3	3	0			
Monthly prizes—April, May		1	1	0			
		<hr/>			4	4	0
Mrs. J. R. D. Munro, second single test					2	2	0
Miss M. Hinze, monthly prize, July					0	10	6
C. Porter do. August					0	10	6
W. R. Crust do. January					0	10	6
Mrs. Bradburne do. February					0	10	6
J. R. Wilson do. March					0	10	6
HEAVY BREEDS.							
R. Burns—							
First general aggregate		4	4	0			
First winter test		3	3	0			
First and second single test		5	5	0			
Monthly prizes—Oct., Nov., Dec., Jan., March		2	12	6			
		<hr/>			15	4	6
A. E. Walters—							
Second general aggregate		3	3	0			
First true to type aggregate		3	3	0			
Second winter test		2	2	0			
Monthly prizes—April, Aug. (half)		0	15	9			
		<hr/>			9	3	9
W. G. Hansen—							
Third general aggregate		2	2	0			
Second true to type aggregate		2	2	0			
		<hr/>			4	4	0
E. A. Smith—							
Third true to type aggregate		1	1	0			
Monthly prizes—Aug. (half), Sept., Feb.		1	6	3			
		<hr/>			2	7	3
W. Smith, third winter test					1	1	0
Mars Poultry Farm, third single test					1	1	0
F. A. Claussen, monthly prize, May					0	10	6
E. F. Dennis do. June					0	10	6
E. Morris do. July					0	10	6
		<hr/>					
Total Prize Money					£69	6	0
		<hr/>					

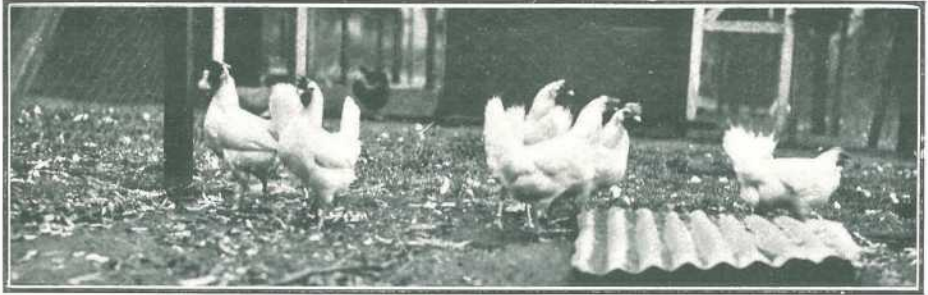
Competitors.	Breed.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March.	Total.
LIGHT BREEDS.														
E. Chester	W. Leghorns ..	118	121	122	129	149	153	155	139	154	144	130	138	1,652
G. Chester	ditto	104	91	74	128	137	145	147	141	115	123	103	78	1,386
W. Becker	ditto	91	119	97	117	131	121	139	121	122	99	102	107	1,366
*G. H. Turner	ditto	73	103	127	128	132	142	133	120	111	100	98	99	1,366
*J. M. Manson	ditto	5	71	137	143	127	159	161	138	137	71	95	104	1,348
W. R. Crust	ditto	104	83	92	124	128	133	132	127	127	122	92	79	1,343
Oakland Poultry Farm	ditto	75	109	104	110	116	133	142	136	135	116	94	73	1,343
T. Taylor	ditto	79	83	97	110	128	124	140	123	124	103	97	108	1,316
F. W. Leney	ditto	44	105	100	142	143	140	140	128	125	97	73	67	1,304
D. Fulton	ditto	68	39	90	125	137	138	135	122	128	109	107	103	1,301
Kelvin Poultry Farm	ditto	17	70	120	133	138	141	149	141	109	110	89	78	1,295
*J. R. Wilson	ditto	108	60	85	116	117	126	132	125	130	90	76	112	1,277
*A. T. Coomber	ditto	50	76	101	114	129	130	139	135	127	89	89	79	1,258
Chris. Porter	ditto	72	69	102	143	145	140	141	97	87	80	73	102	1,251
T. A. Pettigrove, Vic.	ditto	64	106	96	123	126	140	127	114	112	81	75	84	1,248
*J. Zahl	ditto	72	90	104	111	111	135	135	122	113	70	80	88	1,231
Moritz Bros., S.A. ..	ditto	16	94	133	136	135	134	118	117	105	73	71	75	1,207
J. G. Richter	ditto	63	63	98	120	120	134	124	94	110	106	87	58	1,186
T. B. Hawkins	ditto	86	86	75	114	126	113	116	104	105	88	90	77	1,180
*Dixie Egg Plant ..	ditto	12	88	90	118	106	127	147	131	116	70	66	107	1,178
C. Knoblauch	ditto	44	89	101	97	126	124	98	89	123	94	102	91	1,178
Mrs. S. J. Sear	ditto	65	24	25	110	132	138	139	121	126	87	101	96	1,164
*Mrs. J. R. D. Munro	ditto	30	88	88	113	128	132	137	119	118	72	76	63	1,164
Quinn's Post Poultry Farm	ditto	54	33	111	139	133	148	127	109	105	83	69	53	1,164
Mrs. W. D. Bradburne, N.S.W.	ditto	67	40	58	98	138	129	126	121	122	77	112	69	1,157
C. H. Singer	ditto	59	38	33	93	121	131	136	128	127	75	109	106	1,156
J. L. Newton	ditto	30	35	101	115	127	123	141	131	110	92	83	66	1,154
A. Shillig	ditto	60	35	107	117	140	140	136	117	92	60	72	66	1,142
J. Holmes	ditto	19	33	82	114	125	128	135	122	125	105	77	67	1,132
L. G. Innes	ditto	37	34	80	116	126	131	129	106	107	98	81	87	1,130
A. H. Padman, S.A. ..	ditto	97	80	93	75	111	123	131	115	102	79	64	54	1,124
*A. W. Bailey	ditto	75	82	92	110	106	114	107	105	110	77	68	75	1,121
Mars Poultry Farm ..	ditto	69	78	75	127	122	110	111	108	103	76	65	49	1,093
C. P. Buchanan	ditto	32	28	71	85	120	135	137	133	120	69	89	62	1,081
S. C. Chapman	B. Leghorns ..	16	22	82	86	140	141	139	118	110	81	85	59	1,079

F. Clayton, N.S.W.	W. Leghorns	38	58	73	116	124	126	128	112	125	69	53	57	1,079
E. Cross	ditto	76	45	36	87	134	137	119	115	128	89	64	46	1,076
*T. Fanning	ditto	57	28	82	99	128	142	143	126	103	53	38	75	1,074
G. J. White	ditto	6	27	95	118	126	127	134	114	126	85	79	37	1,074
E. A. Smith	ditto	23	33	58	106	124	127	123	119	121	82	80	73	1,069
Miss M. Hinze	ditto	13	60	80	146	101	103	88	112	119	85	80	75	1,062
J. Ferguson	ditto	9	35	70	94	127	135	130	122	119	72	72	74	1,059
R. Holmes	ditto	76	74	60	110	110	120	117	109	81	55	65	77	1,054
G. Howard	ditto	..	34	90	121	137	140	131	107	88	55	65	78	1,046
Mrs. J. Carruthers	ditto	59	32	35	114	124	117	107	100	113	84	70	79	1,034
G. Williams	ditto	58	51	76	95	122	122	116	98	108	62	74	46	1,028
*A. E. Walters	ditto	..	30	103	123	116	124	120	118	102	75	45	48	1,004
*Dr. E. C. Jennings	ditto	12	31	56	91	99	121	135	115	108	91	76	62	997
*C. C. Dennis	ditto	1	65	94	115	103	109	110	102	86	37	..	..	822

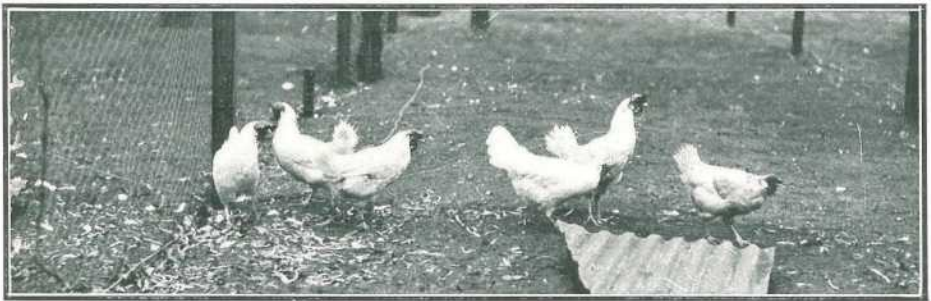
HEAVY BREEDS.

*R. Burns	B. Orpingtons	76	91	116	161	151	149	140	143	132	113	78	120	1,470
*Mars Poultry Farm	ditto	54	81	113	138	140	145	145	129	138	113	112	120	1,428
W. Smith	ditto	80	79	90	156	142	149	130	115	110	63	90	99	1,303
A. E. Walters	ditto	81	77	93	157	156	133	117	103	119	65	86	90	1,277
*E. F. Dennis	ditto	..	56	120	151	144	139	141	106	114	94	78	74	1,217
W. G. Hanson	ditto	39	77	95	147	128	147	122	106	98	87	72	65	1,183
*E. A. Smith	ditto	1	10	45	152	156	151	131	139	112	82	92	95	1,166
F. A. Claussen	R. I. Reds	76	101	68	142	133	110	106	105	99	80	80	61	1,161
D. Kenway	B. Orpingtons	64	57	92	114	128	102	111	105	102	76	89	98	1,138
Mrs. J. H. Jobling, N.S.W.	ditto	26	45	65	143	136	129	138	115	99	97	78	59	1,130
H. Jobling, N.S.W.	ditto	74	66	52	111	119	116	116	114	110	88	68	70	1,104
C. B. Bertelsmeier, S.A.	ditto	11	21	58	138	129	142	101	108	110	90	80	94	1,082
Cowan Bros., N.S.W.	ditto	40	60	90	133	132	124	105	87	94	72	62	79	1,078
P. C. McDonnell, N.S.W.	ditto	38	53	97	131	124	118	110	98	85	80	81	58	1,073
King and Watson, N.S.W.	ditto	6	32	109	121	112	125	115	95	106	90	71	81	1,063
J. M. Manson	ditto	..	11	29	134	146	132	113	103	115	79	69	90	1,021
*Oakland Poultry Farm	ditto	25	39	38	128	145	129	117	96	94	85	63	42	1,001
R. Burns	S. L. Wyandottes	..	3	80	141	134	120	99	107	106	81	67	63	1,001
*Miss M. Hinze	B. Orpingtons	..	1	32	141	141	147	125	131	97	92	50	30	987
E. Morris	ditto	13	..	27	173	140	121	113	93	106	65	39	86	976
C. C. Dennis	W. Wyandottes	..	24	74	109	116	126	94	98	88	75	83	88	975
*Kelvin Poultry Farm	Plymouth Rocks	8	34	28	120	134	139	94	84	101	66	78	48	934
*F. W. Leney	R. I. Reds	10	28	42	78	123	122	81	90	79	50	45	30	778
F. Clayton, N.S.W.	ditto	14	80	68	79	116	85	76	57	58	49	45	42	769
Totals		3,239	4,194	5,972	8,820	9,375	9,505	9,122	8,313	8,091	6,092	5,657	5,488	83,868

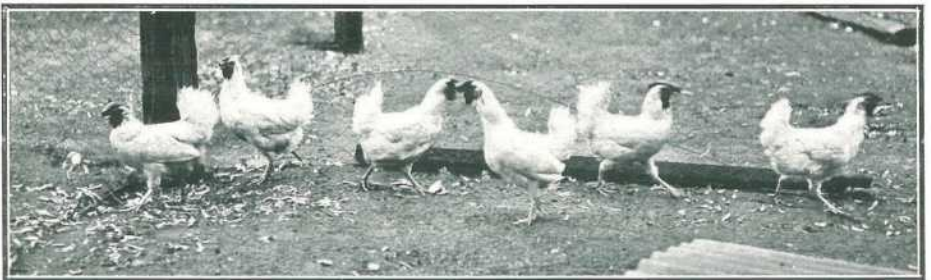
* In the General Returns indicates that the pen is taking part in the Single Hen Test.



MR. W. BECKER'S PEN OF WHITE LEGHORNS.



MR. W. R. CRUST'S PEN OF WHITE LEGHORNS.



MR. E. CHESTER'S PEN OF WHITE LEGHORNS. (Eggs laid, 1,661; average weight, $1\frac{1}{8}$ oz.)

RETURN FROM SINGLE TEST PENS.

Light Breeds.

	A.	B.	C.	D.	E.	F.	Totals.
G. H. Turner	178	210	248	262	221	247	1,366
J. M. Manson	229	243	186	178	240	272	1,348
J. R. Wilson	229	203	193	219	209	224	1,277
A. T. Coomber	206	160	250	237	205	200	1,258
J. Zahl	243	110	247	149	247	235	1,231
Dixie Egg Plant	195	217	178	239	127	222	1,178
Mrs. Munro	264	197	144	153	162	244	1,164
A. W. Bailey	36	213	229	227	227	189	1,121
T. Fanning	157	209	187	146	157	218	1,074
A. E. Walters	120	130	182	222	176	174	1,004
Dr. E. C. Jennings	129	118	207	189	220	134	997
C. C. Dennis	176	89	77	154	162	164	822

Heavy Breeds.

R. Burns	204	195	267	193	277	334	1,470
Mars Poultry Farm	220	255	232	234	249	238	1,428
E. F. Dennis	233	231	201	277	239	36	1,217
E. A. Smith	193	201	171	218	196	187	1,166
Oakland Poultry Farm	220	136	144	124	233	144	1,001
Miss M. Hinze	161	136	130	181	185	194	987
Kelvin Poultry Farm	137	143	160	211	106	177	934
F. W. Leney	133	165	118	115	114	133	778

BALANCE-SHEET.

RECEIPTS.

	Dozen.	£ s. d.	£ s. d.
Entry fees .. .. .	.. .. .	.. .. .	83 0 0
Sales eggs—			
Defence Department	3,595 $\frac{1}{2}$	201 8 3	
Barnes and Co.	735 $\frac{1}{2}$	25 19 1	
Orient S.S. Co.	158 $\frac{1}{2}$	9 4 11	
Sundry Sales	151 $\frac{1}{2}$	8 1 1	
College Dining-hall	2,348 $\frac{1}{4}$	136 18 1	
			381 11 5
Total			464 11 6

EXPENDITURE.

	Bushels.	£ s. d.	£ s. d.
Prize Money .. .. .	.. .. .	.. .. .	69 6 0
Food—			
Wheat	296	63 17 8	
Maize	42	6 10 0	
Hulled Oats	15	5 9 9	
Skinless Barley	9	5 14 0	
Pollard	420	28 17 2	
Bran	196	9 10 1	
	Cwt.		
Oilcake	4	2 3 5	
Desiccated Meat	2	1 4 0	
Bonemeal	1 $\frac{1}{2}$	0 19 3	
Dried Blood	4 $\frac{1}{2}$	3 4 0	
Green Lucerne, valued at .. .. .	.. .. .	2 0 0	
Soup Meat, valued at .. .. .	.. .. .	3 0 0	
			132 9 4
Balance			262 16 1
Total			£464 11 5

CUTHBERT POTTS,
Principal.

Apiculture.

THE COTTON PLANT AS A FACTOR IN BEE-FARMING.

Writing on this subject in the "Apicultural Journal," Mr. Daniel Jones says:—
 "A hitherto unsuspected addition to the bee forage of the State has recently—through the medium of an American journal, in directing attention to the merits of the cotton shrub for this use—come into prominence. The renowned American authority quoted avers that hardly in an experience of over twenty years has the cotton honey harvest failed him. From reports gathered we learn that the American beekeeper regards this source of honey with greatest appreciation, and depends largely on this for his profits. The old cotton-growers, who in former years had an intimate acquaintance with this industry when it was the biggest farm crop produced in this State, appear to have completely overlooked this source of revenue, inasmuch as no notice is known to have been taken of this fact, although there were many beekeepers at that time engaged in the business. Much as the American appreciates the value of cotton as a source of profit, here in Queensland we have incomparable advantages compared with our American cousins. In the United States cotton belt the shrub blooms for about four to five months in the season; here it will blossom for at least seven months, and carry a much larger number of flowers than is the case in American plantations.

"Judging from the character of our Mascot types of cotton, which bear a very large blossom, and to all appearance contain a larger proportion of pollen than do the herbaceous varieties, we, in this way, should reap an additional advantage.

"Growing the shrub as a perennial plant is not much understood in the cotton belt of the United States, for the reason that frost terminates its growth, which is not always the case in Queensland. I have at present, in my yard at Petrie terrace, a shrub which has been now eleven years bearing, and is furnishing a honey source which would make a beekeeper's eyes glisten. An ordinary plant of the annual type would in a season hardly produce over fifty blossoms. With the perennial types hundreds of blooms will open, from which (as in evidence daily) the busy bee makes good use of her opportunity.

"As a new factor in land settlement this combination of bee-farming, in conjunction with cotton-growing, should have close attention from all interested in either soldier or civilian settlement.

"Cotton is almost an unfailing source of bloom, despite drought or other adverse circumstances. I know of no plant so hardy and so adaptable to our climatic conditions. No settler need fear failure if he goes on a farm where he can raise cotton, honey, and sheep.

"The beekeeper who elects to grow the cotton plant will find it a business not nearly so hazardous as often described.

"Leaving out of question the value of the plant as a bee pasture, which the American authorities evidently appreciate as an auxiliary to ordinary beekeeping, it merits some consideration.

"There are, no doubt, some periods of dearth in bee-farming as in all other rural pursuits, which must be provided for. If the apiarist has a few acres of cotton in his neighbourhood, be they his own or not, some considerable advantage thus accrues. If, however, the plants belong to the bee-man, and his leisure from bee work is assured, and time hangs, it will be a pleasant change to fix up the picking-bag and try his prentice hand on the job. For the first few days he will have sore back and resent the work, but on calculating the compensation in money value he will then be more reconciled, particularly if at the time when his bees are not coining money for him. It costs but a half-penny per pound or less to grow a pound of cotton in seed, and this past season growers have realised 3½d.,* so if a picker

* In the boom days, from 1866 to 1873, when the exports of cotton from Queensland were represented by millions of pounds, farmers put large portions of their land under cotton, for which the highest price paid locally was 3d. per lb. [Ed. "Q.A.J."]

gathers anything from 80 to 100 lb. a day, his added wealth stands at from 20s. to 25s. for his day's task. And as his plants will remain in bearing for several years, the annual cost of resowing is obviated, only the small cost of the usual attention in clearing weeds requiring to be met for two or three months of the season, as the plants soon grow sufficiently high and bushy to smother weed growth.

"This is not to be a writing on cotton culture, so I must leave it at this, trusting that as the subject is ventilated in your columns, beekeepers will find some advantage in diversifying their rural work in the direction indicated.

"The best sowing period in the South is from September to November. It can, however, be sown during December in localities not subject to early frost."

"Plants should be spaced 3 feet 6 inches to 4 feet apart in straight lines, so that cross cultivation can be carried on expeditiously.

"In rich soil two plants may be left growing together, otherwise one plant alone is advised. The maturing period from seed to flower of herbaceous plants of the Upland variety is 80 to 90 days; Sea Island, 100 to 110 days. From flower to maturity, Upland sorts, 70 to 80 days; Sea Island, 80 days. Mean daily temperature best adapted to the cotton shrub is 60 to 78 degrees. An increasing daily temperature is necessary for producing the best quality fibre.

"Our Mascot varieties, now long acclimated in Queensland, are very hardy, and have a good-class fibre. However, they are slow in maturing their crop, hence this factor should be taken into account if sowing this type. Generally speaking, this variety will not give a satisfactory crop under twelve months, and in cases even longer, while the herbaceous sorts crop in four months or so after planting."

COTTON AS A HONEY PRODUCER.

Considering the increased attention that is now being paid to the question of cotton-growing, we ("Queensland Apicultural Journal") have been anxious to know whether this plant might be claimed as another source of revenue to the Queensland honey-producer. Our minds have now been set at rest by the perusal of a recent editorial on the subject in the "Beekeepers' Item," a bright little journal, published in Texas, U.S.A., by Louis H. Scholl, one of America's most practical honey-producers. The article which we quote here should give us a heightened appreciation of the cotton bush—a plant that produces raiment to wear, the finest of food to eat, and one of the essentials in winning the war—guncotton.

"Cotton is one of the most remarkable honey plants. On account of the drought its growth was very much retarded throughout a big part of the cotton belt. Much of it not larger than 6 inches in height, regular "humble bee cotton," as it is often called then. After yielding a little honey in the latter part of June and in July, the drought became so severe that it stopped growing altogether, and although almost destroyed in many instances late rains revived it to such an extent that we succeeded in getting a nice cotton honey crop from it before the freezes killed it in October. This was the first year during our twenty-five years' beekeeping experience that this source did not yield a bountiful harvest of honey."

OF INTEREST TO VITICULTURISTS.

On another page of this issue of the Journal will be found amongst the "Departmental Announcements" a notice that cuttings of hybrid grape-vine stocks may be obtained on application to the Under Secretary, Department of Agriculture and Stock. These vines, it should be noted, are not to be grown for fruit, but for purposes of grafting on to other varieties of grapes. The value of these cuttings is that they are practically immune from the attacks of the phylloxera vastatrix or vine louse, which appeared once some years ago in the East Moreton District, and threatened to spread to other portions of the State. Happily the Department took prompt measures to avert such a calamity, and with such success that nothing has since been heard of the terrible pest. It does not, however, follow that our vineyards will never suffer from this cause again, but to be forearmed against such a possibility, the planting of resistant vines is earnestly advised, and such are those which are now to a limited extent available to vigneron and others who have small areas of grape-vines.

Botany.

RECORDS OF A FEW ALIEN PLANTS (*).

By C. T. WHITE, Government Botanist.

Cajanus indicus, Linn. Pigeon Pea. (Order Leguminosae.)

Met with as a stray along the Goondi road, Innisfail. *H. G. Ladbrook*. Native of India.

Foeniculum vulgare, Gaertn. Fennel. (Order Umbelliferae.)

Met with as a stray from garden culture, Blackall Range, April, 1918. Native of Central and Southern Europe and Western Asia.

Artemisia scoparia, Woldst. and Kit. (Order Compositae.)

Met with as a stray from garden culture, Blackall Range, April, 1918. A native of Eastern Europe, Western Asia, and India.

Ipomaea coccinea, Linn. (Order Convolvulaceae.)

Mr. Power, Warden, Cooktown, in sending specimens of this plant to the Deputy Chief Inspector of Stock, Townsville, wrote, 29/6/1916—

“A few days ago, when visiting the Bloomfield River, I was informed that several horses of different owners had died lately. Inquiry elicited the idea that death was most probably caused by the horses eating a small vine or creeper commonly known as ‘Star of Bethlehem,’† and grown in flower gardens. It luxuriates in this locality and covers vast areas. The horses are apparently very fond of it; they begin at the tender tops and gradually eat the vine to the tough fibrous end. This causes a stoppage in the bowels, and soon prevents the animal passing any dung, and causes great pain and straining. Mr. Pierce told me that he lost an entire, the horse, after great straining, passing a large piece of stuff about 15 inches or more in length, and shaped like a sausage. He was given about half a pint of castor oil, but died during the night. Mr. Pierce opened the horse and found the paunch filled with a mass of fibrous matter. I am sending you a sample of the creeper, which is no doubt spreading to a very great extent in that locality. It does not affect cattle in the same way, probably because they chew the end.”

Apart from other interest, the record is interesting as, though specimens have been sent in from time to time from different localities, I have never previously seen or heard of the plant spreading to any extent. It is a native of tropical America.

Physalis ixocarpa, Brot. Purple Gooseberry. (Order Solanaceae.)

Annual, stem at first erect, later widely spreading and much branched, glabrous or the young shoots slightly hairy. Leaves 1 to 2½ inches long, ovate, margins entire or sinuately dentate. Peduncles (flower-stalks) short. Calyx slightly pubescent, lobes shorter than the tube. Corolla yellow with a purple throat, ½ to ¾ inches across. Fruiting calyx round or round-ovoid, sometimes purple-veined, filled by the purple berry which usually bursts it. Berry purple when ripe, and of an average size of 1 inch in diameter. A native of tropical America, cultivated for the sake of its edible fruits; it has established itself as a common naturalised weed in the Killarney district and probably in other localities.

* See also “Queensland Agric. Journ.,” Vol. VIII., n.s., pp. 269-270, 1917.

† *Ipomaea coccinea* is not the plant known as “Star of Bethlehem,” which is *Ipomaea quamoclit*, but is very closely related to it; and a hybrid between the two species, known as “American Jasmine,” is not an uncommon plant in gardens.

Entomology.

PREDACEOUS ENEMIES OF THE SUGAR-CANE AND THEIR PARASITES.

The General Superintendent of Sugar Experiment Stations has received the following report from the Entomologists to the Bureau, Dr. J. F. Illingworth and Mr. Edmund Jarvis:—

“Investigations regarding the influence of cultural methods on the cane-grub problem look promising on the whole, although at present it is rather early to make definite statements in this connection. Such operations, however, as scarifying or ploughing deeply enough to destroy egg-chambers of the beetle and to occasion mechanical injuries to the young grubs or expose them to great solar heat and to the attacks of birds and other enemies cannot fail to be beneficial. We are inclined to favour an adoption, whenever practicable, of the following cultural measures:—

- (1) Cultivation of the cane during summer weather followed immediately by ploughing such areas.
- (2) Late planting and persistent cultivation during the period of oviposition and a few weeks subsequent to the disappearance of the beetles.
- (3) Ploughing or fallowing land in December.
- (4) Having the ground densely covered with Mauritius beans during the flight of the beetles.

“In support of the above-mentioned procedures it may be stated that certain areas under cane at Greenhills and elsewhere which were planted in December appear flourishing at present, while adjoining land planted earlier is already badly grub eaten.

PREDACEOUS ENEMIES.

“Since reporting last month a little data has been obtained respecting the habits of bandicoots. In the intestines of a specimen recently dissected at the laboratory the skins of several cane-grubs (*L. albohirtum*) were found, together with a wire-worm and many chitinous fragments of coleopterous and other insects. Although this animal is credited with being omnivorous, no vegetable remains were apparent, and judging by the structure of the mouth and its forty-eight sharp teeth, it certainly seems improbable that bandicoots, as some assert, damage cane stools by gnawing the roots and young stalks.

“The small animal alluded to in previous reports as preying on grubs of *L. frenchi* is probably a species of *Phascogale*, it having been described to us as being about the size of a small rat, but with head and mouth resembling those of a bandicoot. We hope to trap and cage some specimens of this little marsupial with a view to observing its habits and dietary.

PARASITISM.

“Since reporting last month, information received from the Queensland Museum renders it necessary to state that the scientific name of our common digger-wasp, hitherto known to Australian entomologists as *Dielis formosa*, has recently been changed by R. E. Turner, of the British Museum, to *Campsoeris tasmaniensis*, Sauss. It appears that the true *formosa*, which occurs at Kuranda and elsewhere and is not unlike *C. tasmaniensis* in form and general colouration, does not range south of Cairns. We have not met with this species at Gordonvale. In the absence of literature relating to the question, we have naturally followed the lead of other scientists in supposing our familiar digger-wasp to be identical with *Scolia (Dielis) formosa* of Guerin.

“During the past month attention has been given to the rearing of parasites in order to obtain scientific data with regard to their life history and economy, and to determine the best method of breeding extensively and handling them in large numbers.

“This branch of research work has been very successful, and in the event of parasitic insects being introduced into Queensland from other countries in the near future to cope with our cane grubs we are now in a position to make the best use of such material.

"The following brief account of the mode of wasp-propagation practised at Meringa may be of interest to growers:—

"Digger parasites were confined separately in metal cages holding about 15 cubic inches of soil, the grubs with attached eggs being removed morning and evening and placed into cells formed in moist compacted earth that had been previously pressed into shallow wooden trays. A convenient size of tray was found to be 16 by 13 inches, which allowed room for sixty cells, and when full they were stacked up so that the bottom of each tray acted as a roof for that below, and left just enough space to allow the larvæ to spin their cocoons. At the present time (12th April) about 750 specimens of egg, larval, and pupal stages of our two principal digger-wasps may be seen at Meringa Experiment Station.

"We wish to emphasise the fact that the cane-grubs victimised by both *Camp-someris radula* and *tasmaniensis* are chiefly those of the notorious grey-back beetle. Additional hosts affected by these parasites include *Anoplognathus boisduvalli*, *Lepidiota frenchi*, *rothei*, and *caudata*.

"The hundreds of grubs victimised at the insectary during this month (March) are third stage *albohirtum* (mealy-back cane-beetle).

GRUBS UNDER BLADY-GRASS.

"Recent data obtained in the field at Meringa indicates that stage III. larvæ of *Lepidiota frenchi* are still feeding in virgin soil overgrown with blady-grass and other cereals. Grubs collected hastily from 120 chains of plough-furrows, 4 to 6 inches deep, on clay loam land of the above nature, yielded 107 specimens of third stage *albohirtum*, 128 of the same stage *frenchi*, and a few larvæ of *L. rothei* and other scarabæids of minor importance. The grubs of *frenchi* as a whole are still feeding, but will shortly travel deeper into the ground and form pupil chambers. It is interesting to note that these grubs were derived from eggs deposited in December, 1916, and have therefore been more or less injurious during the past sixteen months."

WHAT AUSTRALIA OWES TO GREAT BRITAIN.

Mr. Denison Miller, Governor of the Commonwealth Bank, makes the following statement:—

"During this season about £100,000,000 will have been distributed to primary producers. It has been possible to market these products only because of arrangements made with the British Government through the Commonwealth Bank. The situation, particularly in regard to prices, would have been very different but for the generosity of the British Government. In fact, it is doubtful whether a market would have been obtainable at all.

"To give a clear understanding of the position, and show the tremendous extent of the benefit Australia has derived from this arrangement, Mr. Denison Miller has given the following particulars:—

1915-16 Wheat Harvest.—British Government advanced in anticipation of shipments, £11,000,000.

1916-17 Wheat Harvest.—British Government purchased 3,500,000 tons of wheat and paid for it before delivery—£26,000,000.

1916-17 Wool Clip.—British Government purchased the greater part of the clip and paid for it before shipment—£25,000,000.

1917-18 Wool Clip.—British Government has purchased the whole of it and is paying before shipment the estimated value of the wool and skins—£45,000,000.

Meat and Rabbits.—British Government has for the past two years purchased the exportable surplus of meat and rabbits, estimated at £7,500,000 per annum, and pays for it immediately on shipment—£15,000,000.

Butter and Cheese.—This season's exportable surplus has been purchased by the British Government, and the producers are being paid immediately it is delivered in store and before shipment—£4,000,000.

"In addition there are many other products which the British Government has purchased, including metals and jams, of which detail figures cannot be given, and Britain in her generosity has paid for a very large quantity of them before they are even shipped from Australia. This, too, in spite of the fact that because of the shipping shortage long delays are bound to occur before delivery can be made.

"Though these figures are incomplete they convey some idea of the extent to which the prosperity of Australia is attributable to the liberality of Great Britain. A sense of obligation cannot but be deeply felt. Every class of the community is laid under a debt of gratitude."

General Notes.

THE COTTON PLANT FROM SEED TO MATURITY.

Uplands, after sowing the seed, will flower in from 80 to 90 days. From flowering to maturity, when picking may commence, 70 to 80 days. Sea Island cotton will flower, after sowing, in from 100 to 110 days, and from flowering to maturity, about 80 days. As a rule, cotton is a crop which may be gathered in from five to six months.

CURING MEAT.

Recipes for curing meat in hot weather are of special interest, and the ones given here have been tried. Meat for curing must be thoroughly cooled, because if the surface of meat comes in contact with salt before all the animal heat is removed, it will have a tendency to shrink the muscles and form a coating on the outside which will not allow the generating gases to escape. Meat should never be frozen when salted, because the brine will not penetrate uniformly, and uneven curing will result. Hams and sides should be trimmed smoothly, care being taken to expose as little lean meat as possible. The meat may be placed in earthenware jars or oak barrels with wooden hoops, since iron hoops will rust.

Good brine for brine-curing can be made from 10 lb. of salt, 2 lb. of sugar or molasses, and 4 gallons of water to 100 lb. of meat. It is a good precaution to boil and skim the mixture. Two or three ounces of saltpetre may be added to preserve the natural colour of the meat, but is harmful to the health even if used in small quantities. Brine does not easily freeze, but meat cures more rapidly if it does not become too cold. The bacon will cure in from twenty-two to thirty days, while the heavier hams need from forty to sixty days. Freshen cured meat in lukewarm water for six hours, then dry and smoke.

For dry curing, make a mixture of clean fine salt, 40 lb.; white or brown sugar, 10 lb.; white or black pepper, 4 lb.; red pepper, $\frac{1}{2}$ lb. This will make enough cure for about 1,000 lb. of pork. If saltpetre is desired, use 2 lb. in the above mixture. Rub each piece of meat thoroughly with the cure, working it in well around the bones of hams and shoulders. Pack with skin down in a box in a cool, airy place, not in direct sunlight nor in a damp musty cellar. After four or five days overhaul the meat, rub thoroughly with the cure, and repack; repeat this in about a week. Hams and shoulders should remain in the cure from one and one-half to two days per lb. weight of piece; the latter time is safer for meat that is to be kept during the summer. Bacon should be in the cure a shorter time. Ten days will give a very nice mild cure to a 6 or 8 lb. piece.

Any of the mixtures which give good results in curing pork can be used satisfactorily for beef, but beef should not be allowed to remain in the brine or mixture quite so long. Corned beef is best when it has been in the cure about ten days.

Here is the "Farm Journal" recipe for dried beef, used again and again by many of our readers. Try it by all means:—Get the tender side of the round out of a good fat beef. For every 20 lb. of beef take 1 pint of salt, a teaspoonful of saltpetre, and $\frac{1}{2}$ lb. of brown sugar. Mix these well, rolling out any lumps; divide into three equal parts, and rub well into the beef for three successive days. Turn beef daily in the liquor it will make. It should not make much, but what there is rub into and pile on the beef. Rub a little extra salt into the hole cut for the string to hang it by. At the end of a week hang in a dry, rather warm place, till it stops dripping, then in a cooler, dry place. Do not smoke it; it spoils the flavour.

Pickled and cured meats are smoked to aid in their preservation. The smoke seals up the pores, acts as a vermifuge, aids in drying, and adds flavour to the product. The smoke-house should be 6 to 8 feet high for ordinary farm use. Small openings under the eaves, or a chimney on the roof, will provide the essential free circulation. Brick houses are best, but large drygoods boxes and even barrels may be made to serve as smoke-houses where only small amounts of meat are to be smoked.

Sometimes there is trouble in keeping meat after it has been cured or smoked. It should be stored in a dry, cool, and well-ventilated place. If allowed to hang up unprotected it is almost certain to become infested with skippers and be blown with flies. The most satisfactory way to handle the meat is to wrap it up in paper and then enclose in strong muslin sacks, tied tightly at the tops.—"Farm Journal of the U.S.A."

GOOD IDEA FOR A NOSE-BAG.

The "New Zealand Farmer" supplies the following excellent idea for a nose-bag, which should prove of great comfort to horses whose mid-day feed is supplied in a suffocating bag:—

Ever consider the discomforts of a horse compelled to feed with his breathing apparatus buried in a nose-bag full of dusty chaff? asks "Murkah" in the "Bulletin." They must be considerable, especially in hot weather. The other day I saw an idea for giving Dobbin his mid-day bite so superior to the nose-bag that, after the publication of particulars in this paragraph, I confidently expect to see a revolution in horse-feeding methods. Here's the recipe: Get a piece of bagging 2 feet 6 inches or so square. Sew in four pieces of wood round the edges. To one end of two of them attach short straps, and, to the other ends, longer straps. Buckle the short straps to the collar or hames at the height the feed is required, and the longer ones (long enough to let the contraption hang out level) higher up on the same piece of harness. The pieces of wood hold the bag out, and the result is a small feed-trough from which Nugget can extract the last oat without nearly breaking his neck and half-suffocating himself in the process. The driver of the team was enthusiastic about the idea, remarking that as well as being kinder to the horse it was handier in every way than the nose-bag.

TO REPAIR OLD TYRES.

In every garage there is generally a number of worn-out tyres. A strong, serviceable inner patch may be made by using a portion of one of these disused covers. Cut, say, 12 in. from a similar sized old tyre, and remove the lip as in Fig. 1.

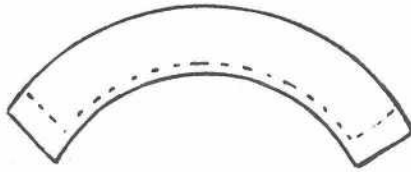


FIG. 1.

Feather at both ends for 1 in., so that the inner tube when inflated will not press on any sharp edge. Procure six bolts and nuts 1 in. x 5-16th in., and six washers to fit same, not less than $\frac{1}{2}$ in., but $\frac{3}{4}$ in. would be better. With a brace and bit, or drill, bore hole (B in Fig. 2) from the outside, first taking care that the patch fits

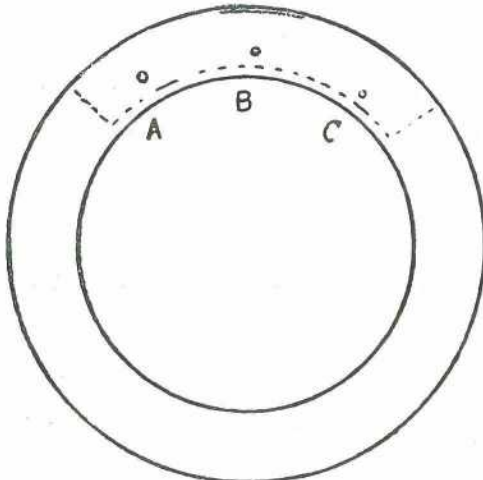


FIG. 2.

as near as you can press it to the inside of the tyre. Pass the bolt, which must have rounded end, through the patch and tyre from the outside, then put on washer and screw the nut on tightly. Proceed in similar way with holes (A and C, Fig. 2). Turn tyre round and proceed in similar way with the other side. When all nuts have been screwed as tight as they will go, cut off ends of bolts with a hack saw or file. Old tyres treated this way have been used for over 1,000 miles.

THE "OXLEY FERTILISER."

Owing to an error in the Advertising Office, the change of prices in Messrs. Foggitt, Jones, and Co.'s advertisement in the May issue of the "Journal" was not noted. The prices fixed for their lines should have read as follow:—"Price per ton, £9. Less than ton lots, 9s. 6d. per cwt." We trust that our readers will accept this explanation, which naturally absolves Messrs. Foggitt, Jones, and Co. from all blame.

EXCAVATED SILOS.

Mr. E. Jewitt, Buderim, writes:—

Re article on silos in the "Agricultural Journal," of April, 1917, this will probably suffice; but will it suffice to induce some of our farmers to rise to the wisdom of our savage ancestors and build silos? No, we need not build silos, but excavate the soil from the face or brow of a hill to any size you like, only it is considerably wider at the top than at the bottom, so that the greenstuff will press at the sides as well as at the middle, and thereby we avoid musty ensilage. It must be covered with some waterproof material.

SOCIETIES, SHOW DATES, ETC.

Atherton.—Atherton Tableland Agricultural Society: Show dates, 18th and 19th September. W. Morris, secretary.

Bowen.—Bowen Pastoral, Agricultural, and Mining Association: Show dates, 29th and 30th August.

Mackay.—Sarina Branch of the Pioneer River Farmers and Graziers' Association. Secretary, W. S. O'Grady.

North Pine.—Pine Rivers Agricultural, Horticultural, and Industrial Association Show (at Lawnton), 21st and 22nd June.

Wellington Point Agricultural, Horticultural, and Industrial Association.—E. Beckley, secretary.

ALTERATION OF SHOW DATES.

The dates of the Show of the Port Curtis Agricultural, Pastoral, and Mining Association have, in order to avoid clashing with other events, been altered from 11th, 12th, and 14th June, to 12th, 13th, and 14th June.

ABOUT MAIZE AND OATS—A WORD TO FARMERS.

The farmer who remembers his early difficulties, his struggle against adverse weather conditions, the trials, tribulations, and disappointments which met him at every turn, will feel the utmost sympathy for the returned soldiers who are being placed on the land. He will know something of the obstacles which these men must overcome, and with his inborn generosity he will be quite ready and willing to lend a helping hand to those who, after fighting in far distant lands, have come back to carve out new homes for themselves and their families in the land of their birth or adoption.

An excellent opportunity now presents itself for growers of maize, oats, or other cereals, which are utilised as feed for poultry to assist. The Poultry Subcommittee of the Queensland Land Settlement Committee has just established a number of settlements for returned soldiers, who are anxious to go in for poultry-raising. Many of these men have already taken over their holdings, which are being stocked with young poultry. The resources of these soldier poultry farmers are naturally very limited, and it will be of very great assistance if farmers and others will make contributions in the form of grain suitable for young poultry. Farmers can help their country and the saviours of their country in a practical way by putting aside a few bags of maize or oats or other grain to be handed to the soldier poultry-raisers.

Secretaries of various farmers' organisations might also take the matter up and organise contributions amongst the members of their organisations.

Those willing to assist should communicate with the Secretary, Land Settlement Committee, Lands Department, Brisbane, when arrangements will be made to take delivery of all contributions of grain and distribute it amongst the various poultry farmers.

TOBACCO SEED.

The Department of Agriculture and Stock has just received from America a supply of tobacco seed (pipe and cigar varieties). These varieties comprise Yellow Pryor (pipe and cigarette), Sumatra (cigar wrapper), Zimmer Spanish (cigar), Improved White Stem Orinoco and Comstock (cigar).

Price, 2s. 6d. per oz., postage paid. Application and remittance should be forwarded to the Under Secretary for Agriculture, Brisbane.

POOK'S PATENT CHAFF BAGGER AND DUMPER.

One of the special features of the Sydney Show was a Pook's Patent Chaff Bagger and Dumper in full operation. Thousands of interested farmers witnessed the demonstration, and the comments made on it were very flattering to the patentee. It is a dumper with the faults left out. Mr. Pook had witnessed the unsatisfactory working of several machines, and decided to experiment to improve them. That he has been successful is clearly demonstrated by the number of testimonials from satisfied users. He started manufacturing at Forest Hill three years ago, but owing to the increased demand for machines it necessitated the removal of the plant to a more central position. He is now in commodious premises in South Brisbane, and a visit to the works shows a number of Queensland workmen using Queensland timber and castings, turning out machines as fast as possible to meet the large number of orders. One of the machine's special features is the feet, which partly revolve after each stroke, thus ensuring an even pressure on the bags at all times.

Anyone in need of a chaff bagger and dumper would have their time amply repaid by first seeing a "Pook" before purchasing any other machine.

MYSTERIOUS DISEASE IN STOCK.

"For a number of years, cattle have been dying on certain holdings in the Horton end of the district, from a mysterious disease. The Stock Inspector, Mr. H. W. Copeland, has lately held a *post-mortem* examination, with the result that the cause has been found to be parasitical gastritis, which is brought about by the infestation of small round worms that are invisible to the naked eye. The symptoms of the disease are the gradual wasting away of the animal, profuse scouring, and a watery gathering or dropsical swelling about the throat. There is also a general anæmic appearance, and eventually the animal becomes so weak that it dies. The animals affected are from twelve months to two years old. The Inspector advises a plentiful supply of block salt, and dosing them with a solution that can be had on application at the office of the Stock Inspector."

The above is an extract from the local paper. In mentioning block salt, Inspector Copeland evidently refers to "Leslie Salt Licks," which are known in the U.S.A. as "block" or "brick" salt because they are manufactured in the shape or form of a block or brick.

There is no other salt put up in the same convenient way. "Leslie" Salt Licks are fitted with loops for hanging to post, rail, or manger. They cannot absorb the germs and filth which are so common round the usual rock salt dump.

Graziers, pastoralists, dairymen, and horse owners will be interested to learn that Stock Inspectors are now recommending "Leslie" Salt Licks where cattle and sheep disease are prevalent.

Answers to Correspondents.

THE MANAGEMENT OF DUCKS.

Owing to pressure of space, our article on the Management of Ducks is unavoidably held over until next month.

WORK OF A SAW-GIN.

"COTTON-GROWER," Ipswich—

A good 50-saw gin will turn out from 1,000 to 1,500 lb. of lint per day of ten hours, in America. Working eight hours per day, as in this State, the output would be from 800 to 1,200 lb. per day. It would not pay to set up a ginnery on a 50-acre cotton farm. If a number of growers in the same district would plant large areas, say from 10 to 50 acres, they might co-operate to establish a ginnery, and so make it a paying concern.

The Markets.

PRICES OF FARM PRODUCE IN THE BRISBANE MARKETS FOR MAY, 1918.

Article.		MAY.
		Prices.
Bacon	lb.	9d. to 10d.
Barley	bush.	3s. 5d.
Bran	ton	£6 15s.
Broom Millet	"	£35 to £45
Butter (First Grade)	cwt.	128s. 6d.
Chaff, Mixed	ton	£3 10s. to £5
Chaff, Oaten (Imported)	"	£7 10s.
Chaff, Lucerne (Local)	"	£6 10s. to £7 10s.
Chaff, Wheaten	"	£1 to £5 10s.
Cheese	lb.	7½d. to 10½d.
Flour	ton	£12
Hams	lb.	1s. 3d. to 1s. 10d.
Hay, Oaten	ton	...
Hay, Lucerne	"	£5 to £5 6s.
Hay, Wheaten	"	£4 to £5 10s.
Honey	lb.	3½d. to 4d.
Maize	bush.	4s. to 4s. 6d.
Oats	"	4s. 6d.
Onions	ton	£8 10s. to £10
Peanuts	lb.	3½d. to 4d.
Pollard	ton	£7 5s.
Potatoes	"	£1 6s. to £7 15s.
Potatoes (Sweet)	"	£2 5s. to £3 10s.
Pumpkins (Cattle)	"	£3 5s. to £3 15s.
Eggs	doz.	1s. 10d. to 2s. 6d.
Fowls	per pair	3s. to 7s. 3d.
Ducks, English	"	2s. 9d. to 3s. 9d.
Ducks, Muscovy	"	5s. 6d. to 6s.
Geese	"	6s. to 6s. 6d.
Turkeys (Hens)	"	8s. to 9s. 6d.
Turkeys (Gobblers)	"	12s. 6d. to 20s.
Wheat (Milling)	bush.	3s. 9d. to 4s.

VEGETABLES—TURBOT STREET MARKETS.

Beans, per sugar-bag	...	6d. to 2s. 8d.
Beetroot, per sugar-bag	...	6d. to 9d.
Cabbages, per dozen	...	1s. to 4s. 6d.
Carrots, per sugar-bag	...	2s. 6d. to 5s.
Cauliflowers, per dozen	...	13s. to 17s. 6d.
Chokos, per case	...	1s. to 1s. 3d.
Cucumbers, per dozen	...	1s. to 1s. 6d.
Lettuce, per dozen	...	1s. to 1s. 6d.
Marrows, per dozen	...	2s. 6d. to 3s. 6d.
Parsnips, per dozen bundles	...	6d. to 1s.
Peas, per sugar-bag	...	6s. to 9s.
Sweet Potatoes, per sugar-bag	...	2s. 3d. to 3s.
Table Pumpkins, per dozen	...	6s. to 6s. 6d.
Tomatoes, per quarter-case	...	2s. to 4s. 6d.

SOUTHERN FRUIT MARKETS.

Article.	MAY.	
	Prices.	
Bananas (Queensland), per case	9s.	to 15s.
Bananas (Tweed River), per bunch	10s.	to 12s.
Bananas (Fiji), per case	20s.	to 23s.
Bananas (G.M.), per case	20s.	to 23s.
Custard Apples, per tray ... ..	...	...
Lemons (local), per bushel-case ... ..	...	...
Mangoes, per case ... ..	...	...
Mandarins, per case ... ..	...	...
Oranges (Navel), per case ... ..	...	...
Oranges (Queensland), per case	7s.	to 14s.
Papaw Apples, per half-case	6s.	to 7s.
Passion Fruit, per half-case	11s.	0d.
Persimmons, per half-case	2s.	to 4s.
Pineapples (Queens), per double-case	10s.	0d.
Pineapples (Ripley), per double-case	7s.	to 9s.
Quinces, per bushel-case ... ..	...	...
Tomatoes (Queensland), per half-case	2s.	to 4s.

PRICES OF FRUIT—TURBOT STREET MARKETS.

Article.	MAY.	
	Prices.	
Apples, Eating, per case	7s. 6d.	to 8s. 6d.
Apples, Cooking, per case	7s.	to 9s.
Apricots, per case ... ..	...	...
Bananas (Cavendish), per dozen	1½d.	to 5d.
Bananas (Sugar), per dozen	4d.	to 5½d.
Cape Gooseberries, per small box	5s.	to 5s. 6d.
Cherries, per box ... ..	...	...
Citrons, per hundredweight	8s.	...
Cocoanuts, per sack	15s.	to 25s.
Cumquats, per quarter-case	3s.	to 3s. 6d.
Custard Apples, per tray	3s.	to 4s.
Lemons (Lisbon), per quarter-case	3s.	to 6s.
Mandarins, per case	6s.	to 9s.
Mangoes, per quarter-case ... ..	...	...
Oranges (Navel), per case	6s.	to 8s.
Oranges (Other), per case	2s. 6d.	to 4s. 6d.
Oranges, per case ... ..	...	...
Papaw Apples, per quarter-case	2s.	to 4s. 6d.
Passion Fruit, per half-bushel case	4s.	to 6s.
Peaches, per quarter-case ... ..	...	...
Pears, per half-bushel case ... ..	...	...
Peanuts, per lb.	3½d.	to 4d.
Persimmons, per quarter-case	1s. 8d.	to 2s. 6d.
Pineapples (Ripley), per case	9s.	to 10s.
Pineapples (Rough), per case	1s.	to 3s.
Pineapples (Smooth), per case	4s. 6d.	to 5s. 6d.
Plums, per quarter-case ... ..	...	...
Rockmelons, per dozen ... ..	...	...
Strawberries, per dozen boxes ... ..	...	...
Rosellas, per sugar bag	2s. 6d.	to 3s. 6d.
Tomatoes, per quarter-case	1s. 6d.	to 3s. 3d.

TOP PRICES, ENOGGERA YARDS, APRIL, 1918.

Animal.	APRIL.	
	Prices.	
Bullocks	£18 10s. to	£23
Cows	£13 to	£15 15s.
Cows (Single) ... ..	...	...
Merino Wethers	42s. 3d.	
Crossbred Wethers	38s.	
Merino Ewes	26s. 6d.	
Crossbred Ewes	36s. 3d.	
Lambs	33s. 9d.	
Pigs (Baconers) ... ..	...	...
Pigs (Porkers)	35s.	
Pigs (Slips) ... ..	...	...

RAINFALL IN THE AGRICULTURAL DISTRICTS.

TABLE SHOWING THE AVERAGE RAINFALL FOR THE MONTH OF APRIL, 1918, IN THE AGRICULTURAL DISTRICTS, TOGETHER WITH TOTAL RAINFALLS DURING APRIL, 1918 AND 1917, FOR COMPARISON.

Divisions and Stations.	AVERAGE RAINFALL.		TOTAL RAINFALL.		Divisions and Stations.	AVERAGE RAINFALL.		TOTAL RAINFALL.	
	April.	No. of Years' Records.	April, 1918.	April, 1917.		April.	No. of Years' Records.	April, 1918.	April, 1917.
<i>North Coast.</i>					<i>South Coast—continued:</i>				
Asherton	In.		In.	In.	Nambour	In.		In.	In.
Cairns	4.25	17	4.37	4.85	Nanango	4.53	22	7.16	2.85
Cardwell	11.74	36	8.23	8.95	Rockhampton	1.89	36	1.33	0.42
Cooktown	9.85	46	7.70	6.04	Rockhampton	2.24	31	3.38	0.82
Herberton	9.40	42	6.32	6.42	Woodford	4.19	31	2.53	1.13
Ingham	4.35	31	3.31	3.60	<i>Darling Downs.</i>				
Innisfail	8.65	26	8.19	7.98	Dalby	1.32	48	1.13	1.94
Mossman	21.86	37	17.48	13.70	Emu Vale	1.17	...	2.77	0.29
Townsville	11.78	10	6.82	9.78	Jimbour	1.39	...	1.27	1.24
	3.72	47	2.62	3.25	Miles	1.47	33	2.16	0.87
<i>Central Coast.</i>					Stanthorpe	1.77	45	1.29	0.37
Ayr	2.76	31	1.84	2.80	Toowoomba	2.54	46	1.58	1.74
Bowen	3.04	47	2.27	1.58	Warwick	1.36	31	3.41	0.06
Charters Towers	1.73	36	1.02	0.19	<i>Maranoa.</i>				
Mackay	6.80	47	9.25	3.27	Roma	1.30	44	3.17	0.67
Proserpine	6.59	15	8.35	9.44	<i>State Farms, &c.</i>				
St. Lawrence	2.81	47	7.82	2.17	Bungeworogai	0.79	4	2.92	0.28
<i>South Coast.</i>					Gatton College	1.83	...	1.63	0.53
Biggenden	1.62	...	3.00	0.39	Gindie	1.19	...	2.70	0.04
Bundaberg	2.79	35	4.81	1.99	Hermitage	1.31	...	3.61	...
Brisbane	3.63	67	1.70	0.75	Kairi	3.47	4	4.08	4.09
Childers	2.35	23	4.04	1.71	Kamerunga	11.98	...	10.26	9.46
Crohamhurst	5.42	25	5.64	2.63	Sugar Experiment Station, Mackay	5.13	...	8.42	5.24
Esk	2.71	31	1.38	1.73	Warren	0.98	4	2.95	0.51
Gayndah	1.31	47	2.07	0.84					
Gympie	3.09	48	3.17	1.32					
Glasshouse M'tains	4.70	10	4.48	2.15					
Kilkivan	2.10	39	1.99	1.03					
Maryborough	3.27	47	3.35	1.21					

NOTE.—The averages have been compiled from official data during the periods indicated; but the totals for April this year, and for the same period of 1917, having been compiled from telegraphic reports, are subject to revision.

J. H. HARTSHORN, Divisional Officer.

Farm and Garden Notes for July.

FIELD.—The month of July is generally considered the best time to sow lucerne, for the reason that the growth of weeds is then practically checked, and the young lucerne plants will, therefore, not be retarded by them, as would be the case if planted later on in the spring. If the ground has been properly prepared by deep ploughing, cross-ploughing, and harrowing, and an occasional shower occurs to assist germination and growth, the lucerne will thrive so well that by the time weeds once more appear it will be well able to hold its own against them. From 10 to 12 lb. of seed drilled, or 15 to 16 lb. broadcast, will be sufficient for an acre. This is also the time to prepare the land for many field crops, such as potatoes, maize, oats, and barley for green fodder; also, rye, vetches, tobacco, cotton, sugar-cane, field carrots, mangolds, swedes, canaigre, &c. Early potatoes, sugar-cane, and maize may be planted in very early districts, but it is risky to plant potatoes during this month in any districts liable to late frosts or in low-lying ground. Under such conditions, it is far better to wait until well into the following month. The greatest loss in potatoes and sugar-cane has been, on more than one occasion, experienced in September, when heavy frosts occurred in low-lying districts in the Southern portion of the State. During suitable weather, rice may be sown in the North. The coffee crop should now be harvested, and yams and tumeric unearthed.

KITCHEN GARDEN.—Should showery weather be frequent during July, do not attempt to sow seeds on heavy land, as the latter will be liable to clog, and hence be injurious to the young plants as they come up. The soil should not be reworked until fine weather has lasted sufficiently long to make it friable. Never walk over the land during wet weather with a view to sowing. The soil cakes and hardens, and good results cannot then be expected. This want of judgment is the usual cause of hard things being said about the seedsman. In fine weather, get the ground ploughed or dug, and let it lie in the rough till required. If harrowed and pulverised before that time, the growth of weeds will be encouraged, and the soil is deprived of the sweetening influences of the sun, rain, air, and frost. Where the ground has been properly prepared, make full sowings of cabbage, carrot, broad beans, lettuce, parsnips, beans, radishes, leeks, spring onions, beetroot, eschalots, salsify, &c. As westerly winds may be expected, plenty of hoeing and watering will be required to ensure good crops. Pinch the tops of broad beans which are in flower, and stake up peas which require support. Plant out rhubarb, asparagus, and artichokes. In warm districts, it will be quite safe to sow cucumbers, marrows, squashes, and melons during the last week of the month. In colder localities, it is better to wait till the middle or end of August. Get the ground ready for sowing French beans and other spring crops. Sow Guada beans (snake gourd) at the end of September.

FLOWER GARDEN.—Winter work ought to be in an advanced state. The roses will now want looking after. They should already have been pruned, and now any shoots which have a tendency to grow in wrong directions should be rubbed off. Overhaul the ferneries, and top-dress with a mixture of sandy loam and leaf mould, staking up some plants and thinning out others. Treat all classes of plants in the same manner as the roses where undesirable shoots appear. All such work as trimming lawns, digging beds, pruning, and planting should now be got well in hand. Plant out antirrhinums, pansies, hollyhocks, verbenas, petunias, &c., which were lately sown. Sow zinnias, amaranthus, balsam, chrysanthemum tricolor, marigolds, cosmos, cox-combs, phloxes, sweet peas, lupins, &c. Plant gladiolus, tuberoses, amaryllis, pan-cratiun, ismene, crinum, belladonna, lily, and other bulbs. Put away dahlia roots in some warm, moist spot, where they will start gently and be ready for planting out in August and September.

Orchard Notes for July.

THE SOUTHERN COAST DISTRICTS.

The notes for the month of June apply to July as well. The first crop of strawberries will be ripening during the month, though extra early fruit is often obtained in June, and sometimes as early as May, under especially favourable conditions. Look out for leaf-blight, and spray for same with Bordeaux mixture, also watch for the first signs of the grey mould that attacks the fruit, and spray with the sulphide of soda wash. The larvæ of the cockchafer, that eats the roots of strawberries, should be looked for, and destroyed whenever found. Pruning of citrus and other fruit trees may be continued; also, the spraying with lime and sulphur. Where the ringing borer, that either attacks the main trunks or the branches at or near where they form the head of the tree, is present, the main stems and trunks should either be painted or sprayed with the lime and sulphur wash during the month, as the mature beetles that lay the eggs that eventually turn to the borers sometimes make their appearance during the month, and unless the trees are protected by the wash they lay the eggs, which hatch out in due course and do a lot of damage. Keep the orchard clean, so that when the spring growth takes place the trees may be in good condition. There is usually a heavy winter crop of pineapples ripening during this and the following month, particularly of smooth leaves. See that any conspicuous fruits are protected by a wisp of grass, as they are injured not only by frost but by cold westerly winds.

THE TROPICAL COAST DISTRICTS.

See the instructions given for the month of June. Keep the orchards clean and well worked. Prune and spray where necessary.

THE SOUTHERN AND CENTRAL TABLELANDS.

Where pruning of deciduous trees has not been completed, do so this month. It is not advisable to leave this work too late in the season, as the earlier the pruning is done after the sap is down the better the buds develop—both fruit buds and wood buds; thus securing a good blossoming and a good growth of wood the following spring.

Planting can be continued during the month; if possible, it should be finished this month, for, though trees can be set out during August, if a dry spell comes they will suffer, when the earlier planted trees, which have had a longer time to become established, will do all right—provided, of course, that the land has been properly prepared prior to planting, and that it is kept in good order by systematic cultivation subsequent to planting.

Do not neglect to cut back hard when planting, as the failure to do so will result in a weakly growth.

As soon as the pruning is completed, the orchards should get their winter spraying with the sulphur limewash, and either with or without salt, as may be wished. See that this spraying is thoroughly carried out, and that every part of the tree is reached, as it is the main treatment during the year for San José and other scale insects, as well as being the best time to spray for all kinds of canker, bark-rot, moss, lichens, &c.

Where the orchard has not been ploughed, get this done as soon as the pruning and spraying are through, so as to have the land in good order for the spring cultivations. See that the work is well done, and remember that the best way to provide against dry spells is to keep moisture in the soil once you have got it there, and this can only be done by thorough and deep working of the soil.

When obtaining trees for planting, see that they are on good roots, and that they are free from all pests, as it is easier to prevent the introduction of pests of all sorts than to eradicate them once they have become established. Only select those varieties that are of proved merit in your district; do not plant every kind of tree that you see listed in a nurseryman's catalogue, as many of them are unsuited to our climate. The pruning of grape vines may be carried out in all parts of the tablelands other than the Stanthorpe district, where it is advisable to leave this work as long as possible, owing to the danger of spring frosts.

Where grape vines have been well started and properly pruned from year to year, this work is simple; but where the vines have become covered with long straggling spurs, and are generally very unsightly, the best plan is to cut them hard back, so as to cause them to throw out good strong shoots near the main stem. These shoots can be laid down in the place of the old wood in following seasons, and the whole bearing portion of the vine will be thus renewed.

Where vineyards have been pruned, the prunings should be gathered and burnt, and the land should receive a good ploughing.

GRADED SEED WHEAT!

HERMITAGE STATE FARM.

The undermentioned graded wheats (1917 Season) are offered for sale at 5/6 per bushel f.o.b. Hermitage.

Intending purchasers are advised that, owing to unfavourable weather conditions during harvesting, the grain is more or less weathered, and not as plump as usual; satisfactory germination tests, however, have been made.

The varieties consist of Hiawatha, Coronation, Piastre, and O.K., and are of Queensland Origin, and were raised and have been tested over a series of years at Hermitage State Farm, proving to be very suitable to the conditions of soil and climate of the Western Darling Downs.

These varieties are all good Milling Wheats of medium, early-maturing habit, fair rust resisters, and are already well and favourably known to those persons who have given the wheats a trial

ROMA STATE FARM.

BUNGE 1.

Graded Seed Wheat is offered for sale at 5/6 per bushel f.o.b. Bungeworgorai.

This wheat is somewhat weathered, owing to unfavourable conditions prevalent during harvesting, and from the same cause is not as plump as usual.

Application, accompanied by Cash Remittance, must be addressed in each case to **THE MANAGER.**

Orders will be supplied according to priority of application.

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STOCK

Fenwick & Co. sell Cattle, Calves, Pigs, Sheep, and Lambs every Wednesday at Newmarket. Fenwick & Co. have paddocks handy to Untrucking Yards—well grassed, naturally well watered, and with plenty of shade.

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Fenwick & Co. secure full market value for consignments of Hides, Sheepskins, Marsupial and Opossum Skins, Goat Skins, Tallow, Hair, Beeswax, etc.

Skins.—The Season for Opossum Skins is open from the 1st May, 1918, until the 31st October, 1918, but the Season for Bear Skins remains closed until the 30th April, 1919.

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