

QUEENSLAND AGRICULTURAL JOURNAL

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PART 4.

Agriculture.

CORNGROWING COMPETITION, 1918-19.

1. This competition will be open to all under the age of eighteen years who are residents of the State of Queensland. An entrance fee of 2s. 6d. must be forwarded to the Under Secretary with the application to enter.

2. Applications to be enrolled in the competition, containing the following particulars, must be forwarded to the Under Secretary, Department of Agriculture and Stock, Brisbane, to reach him, if possible, not later than 29th September, 1918:—

- (a) Full name and address. (Give Christian names in full.)
- (b) Date of birth. (Day, month, and year.)
- (c) No. of Division in which applicant resides, and the name of the Dairy Inspector who supervises the locality.

3. The area to be devoted to the planting of the seed maize shall be one-tenth of an acre, selected seed for which, 1½ lb. of Improved Yellow Dent, will be posted, free of cost.

4. Each competitor shall have absolute freedom in his choice of ground, and in the methods he may adopt in preparing, planting, and cultivating his plot; but in no case shall a plot exceed one-tenth of an acre. Yields will be calculated, when judging, on the basis of this area.

The following table shows the length the rows must be to give the exact area according as four, five, six, or more rows are planted :—

Number of Rows Four Feet Apart.	Length of Rows in Feet.	Number of Rows Four Feet Apart.	Length of Rows in Feet.
4	272 ft. 3 in.	8	136 ft. 1½ in.
5	217 ft. 10 in.	12	96 ft. 9 in.
6	181 ft. 6 in.	16	68 ft.
7	155 ft. 7 in.		

5. Each competitor will be required to keep a record chart showing the dates and particulars of the different stages of work, and these charts must be delivered, at the time of harvesting, to the officer appointed for superintending and verifying the yield, and this officer will post them on to Brisbane.

6. Within seven days from the verification of the yield from the crop, each competitor shall select, without aid from other persons, twelve uniform cobs of the maize from his crop, and forward them, with a letter of advice, to the Department of Agriculture and Stock, Brisbane. (The cobs should be packed in straw envelopes, commonly used in packing beer bottles, and then placed tightly in a case which should be labelled and branded with the initials of the competitor and the number allotted to his district.)

7. Competitors must notify the Dairy Inspector for the district of the date when the crop shall have matured and be ready for inspection. *Unless this rule is observed the competitor will be disqualified.* The maize *must* be thoroughly dry and ripe when harvested.

8. No competitor shall be allowed to employ or permit any labour upon the competition plot standing in his name, other than his own personal labour, excepting in relation to the driving of horses, for which, owing to circumstances, such help may be needed.

9. The competition will close on the 30th June, 1919, and the prizes will be allotted thus—

The competitors will be grouped according to the following divisions :—

(4) The district supervised by—

Mr. E. W. Ladewig, Dairy Inspector, Beenleigh.

Mr. L. J. Kelly, Dairy Inspector, Harrisville.

Mr. A. K. Henderson, Dairy Inspector, Rosewood.

(2) The district supervised by—

Mr. C. C. Pickering, Dairy Inspector, care of Miss Macpherson, Victoria street, West End

Mr. R. G. Ridgway, Dairy Inspector, Ellerslie Crescent, Taringa, Brisbane.

Mr. L. J. Verney, Caboolture.

Mr. R. Winks, Dairy Inspector, Gympie.
Mr. J. A. Midgley, Dairy Inspector, Bundaberg.
Mr. W. S. Harding, Dairy Inspector, Esk.

(3) The district supervised by—

Mr. J. H. Barber, Dairy Inspector, Crow's Nest.
Mr. J. J. Carew, Dairy Inspector, Gatton

(4) The district supervised by Mr. S. K. Crowther, Dairy Inspector, Kingaroy

(5) The district supervised by—

Mr. J. D. Ogilvie, Dairy Inspector, Clifton.
Mr. S. A. Clayton, Toowoomba.
Mr. J. R. D. Munro, Dairy Inspector, Warwick.

(6) The district supervised by Mr. D. Downs, Dairy Inspector, Gayndah.

(7) The district supervised by—

Mr. J. Cattnach, Dairy Inspector, Dalby.
Mr. R. S. Sigley, Dairy Inspector, Roma.
The Stock Inspector, Goondiwindi.

(8) The Central District of Queensland, including that supervised by Mr. L. Moriarty, Dairy Inspector, Rockhampton.

(9) The Northern district of Queensland, including that supervised by—

Mr. G. A. Smith, Stock and Dairy Inspector, Mackay.
Mr. J. P. Carey, Yungaburra.

10. Three special prizes of the value of £10, £5, and £3 will be awarded to the competitors who stand first, second, and third in the entire competition.

DISTRICT PRIZES.—FIRST, £5; SECOND, £2; THIRD, £1.

If there are less than six competitors, prizes will be allotted as follows:—

Four to five competitors (inclusive), two prizes, first and second.

Two to three competitors (inclusive), one prize only, first.

When only one competitor, he or she will be debarred from participating in the District Prize, but will be eligible to compete for the Special Prizes.

NOTE.—It is in the interest of the entrants to encourage others to compete for the valuable prizes being offered.

No money prizes will be given, but each successful competitor will be allowed to select some article to the value of his prize.

No prize will be awarded unless the yield of corn equals 20 bushels per acre. This stipulation may be waived under very exceptional circumstances in the case of a lower yield.

11. The aggregate points will be 100, and the judging will be based upon the following:—

	Points.
(a) Quality of maize produced	15
(b) Yield of plot —	75
(c) Notes and records of plot	10

12. The Director of Agriculture will be the sole judge of the competition, and his decision shall be final.

WILLIAM LENNON,

Secretary for Agriculture and Stock.

Brisbane, 2nd September, 1918.

COTTON IN THE WEST INDIES.

The following notes on the cotton-growing industry in the Barbados are published in the Annual Report of the Department of Agriculture of Tortola for 1918, and show the results of the operations of the Government Cotton Factory during the season 1916-1917:—

For some years past the putting into operation of a profit-sharing scheme in connection with the working of the Government Cotton Factory has been under discussion. Local opinion was opposed to the scheme.

However, it was decided to put a profit-sharing scheme into force. Under that scheme, a first payment of up to 5c. per lb. of seed-cotton is made, and any profits remaining after all accounts concerning the crop have been made up are to be divided as follows:—To the Government 25 per cent. and to the contributing growers 75 per cent. Quite how the scheme would have worked in a normal season it is impossible to say. There was a promise of an excellent crop of cotton, but this promise was not fulfilled on account of the gale. High prices led to the intervention of private speculators, who bought a good deal of the seed-cotton, and exported it to St. Kitts.

The combined effect was a large drop in the amount of cotton dealt with at the Government Ginnery.

The ginnery was opened for the purchase of seed-cotton on 21st October, 1916, and purchasing was continued each week till 5th May. During that time 57,570 lb. of seed-cotton was bought and dealt with.

The 57,570 lb. of seed-cotton yielded 15,253 lb. of clean lint, or 26.4 per cent.

The net cost of ginning, baling, and shipment to St. Thomas and St. Kitts, after deducting £16 17s. 3d., value of stores carried forward, amounted to £109 11s. 11d., or 3.6c. per lb. of clean lint. This high cost is accounted for by the price of baling material, fuel, and lubricating oils, and, in some degree, by the fact that large quantities of cotton can be dealt with at a cheaper rate in proportion than small lots.

THE JERUSALEM ARTICHOKE.

Although this is one of our most excellent and most easily grown vegetables, strange to say it is only cultivated to a very limited extent in this State by either farmers or market gardeners. It is not only of great value as human food but is an excellent and profitable crop for feeding swine, which thrive remarkably well upon the tubers. The so-called Jerusalem artichoke is really not what its name implies. The true artichoke is a chard or thistle, of which the bottoms of the flowers and the rib-like sepals are used as food. The botanical name of this true artichoke is *Cynara scolymus*; the so-called Jerusalem artichoke is *Helianthus tuberosus*, one of the sunflowers. The name Jerusalem is simply a corruption of the word "Girasole," which the Italians give to both the sunflower and the Jerusalem artichoke, meaning turning to the sun. The stems, leaves, and flowers bear a great resemblance to the Japanese sunflower. It is, in fact, a tuber-bearing sunflower, whose value lies in its tubers, which grow clustered in large numbers round the roots, and resemble knotty English potatoes. It is a very hardy plant, and may

be cultivated successfully in any fairly good soil in all except the most arid regions. It thrives, however, to the greatest perfection in moderately rich, sandy loam, with a moderate amount of moisture. In low-lying or ill-drained soil the tubers will quickly rot away. It is essentially a drought-resisting plant.

The cultivation is extremely simple, and does not call for any extra care or skill. All that is needed is that the land be ploughed or dug deeply and thoroughly pulverised. The tubers are then planted at a shallow depth (4 to 5 inches) in rows 3 feet apart and 18 inches between the sets. It takes about 15 lb. of tubers to plant a rod (16 perches) of land. As in the case of potatoes, the smaller tubers may be planted whole and the larger cut into sets containing two or three eyes. The plants grow to a height of from 4 to 6 feet. The best time to plant is early in the spring, or in July and August, and the tubers will be uninjured in the ground until the soil is warm enough to cause them to sprout. In ordinary seasons, the crop will be ready for digging in from five to six months. If not required for immediate use, they may be left in the ground and taken up at any time, and do not suffer injury from frost. If dug, they should not be exposed to the air, as they will not keep long without shrivelling up and becoming soft. They may, however, be pitted like sweet or English potatoes.

Independent of its value as a vegetable, the Jerusalem artichoke forms, as said, an excellent food for pigs, for which purpose, on the farm, it is best to run two or three furrows across the rows and turn in the pigs, and they will gather all they want. There will be quantities of small tubers left in the ground even after the pigs have been pastured on the field. Consequently, in the early spring, a bountiful crop of young plants will spring up. When these plants are a few inches high they should be ploughed out into rows 3-feet apart, and then thinned out to a stand of one plant to every 18 inches. In this manner the artichokes will form a next season's crop, and a good supply of pig food be obtained.

As compared with the potato, the Jerusalem artichoke yields about double the quantity of nutritive matter—in fact, its value as a food is equal to the cereal grains. Another advantage possessed by this vegetable is that it is more easily digested and not so liable to cause flatulency as the potato, and consequently may be safely eaten by delicate persons.

The "Journal of the Board of Agriculture," London (April, 1918), gives the composition of artichokes and potatoes as follows:—

	Water.	Proteins.	Total Carbohydrates.	Calories per lb.
Artichokes	79.	2.6	16.7	365
Potatoes	75.5	1.8	14.7	310

On rich garden soil the artichoke will yield as much as 20 tons per acre, and an average yield from field cultivation is about 10 to 12 tons.

PROSPECTS OF THE PEANUT INDUSTRY.

We have frequently advised the extensive planting of this crop, which goes indifferently by the name of peanut, earth nut, and ground nut. One reason why peanuts should be grown is, that there is an unlimited demand for oil seeds, amongst which the peanut ranks high; in fact, so excellent is the oil extracted from these nuts that it is said to be sold as pure lucca, or salad oil, made from olives. Another reason is, that heavy crops can be obtained without the use of manure or of irrigation, on sandy soils which will produce scarcely any other payable crop. A third inducement to planting peanuts is, that very little cultivation is required after preparation of the land and keeping the young plants clear of weeds until the vines are overground. As in the case of the sweet potato, the peanut vines make excellent fodder for stock, being first turned into hay. Previous to the great war the selling price of the nuts averaged £18 per ton, and at that price, even a 2,000-lb. crop would prove infinitely more remunerative than maize, wheat, arrowroot, and many other crops. £18 per ton is a little over 2d. per lb. The present-day price in the English market is £32 per ton in the shell. In the Brisbane markets peanuts sell at from 3d. to 6d. per lb. retail, or from £37 to £56 per ton.

There is no fear of over-production. Before the war, France—or, rather, one single seaport of France (Marseilles)—imported from India and Africa nearly 200,000 tons of peanuts annually.

The nuts contain from 30 to 50 per cent. of oil, the best of which is, as we have said, used as a substitute for olive oil, and the lower-grade oil is used to an enormous extent for manufacturing soap and for lubricating machinery. Peanut meal, which

is the residue after the oil has been extracted, is a foodstuff of high value, and ranks far above cotton-seed meal, which is one of the most richly concentrated meals found on the market to-day. The nuts, both raw and roasted, are largely eaten by all classes of people.

SOIL AND CLIMATE.

The peanut prefers a rather sandy, loamy soil, which should contain enough vegetable matter to make it light and porous, but it can be profitably grown on a very wide range of soils, provided they contain a sufficient amount of lime.

Since the trade demands a light-coloured shell, nuts of equal flavour and quality grown on dark-coloured soils do not find a ready sale. There is an abundance of good peanut soil in Queensland.

The peanut will thrive under a great variety of climatic conditions, provided there is a season of at least five months free from frosts. It has been thought by some that the peanut only grows well in a warm climate, but this is a mistake, since the nuts develop chiefly during the cool weather in the late summer and early autumn. weather conditions most favourable to maximum production are an early spring, warm, even summer temperature, with a well-distributed rainfall, and a comparatively dry autumn. Of course, climate has an influence on the character and composition of the nuts, since it has been demonstrated that in tropical countries a larger percentage of oil is obtained. As to any other influences which climate may exert but little is known.

FERTILISERS.

Since the peanut is adapted for growth on a soil which is not naturally rich in any of the essential elements of plant food, the proper fertilisation of the crop becomes a matter of the utmost importance. It has been found that 60 bushels of nuts with a ton of hay will remove from the soil about 85 lb. of nitrogen, 15 lb. of phosphoric acid, 32 lb. of potash, and 47 lb. of lime. Of this amount, about 41 lb. of nitrogen, 6 lb. of phosphoric acid, 20 lb. of potash, and 42 lb. of lime were found in the hay; and since the vines would either be left on the ground or fed to stock, and the resulting manure applied to the land, the peanut is seen to be a comparatively easy crop on the land as far as soil exhaustion is concerned. It must be remembered that the plant derives a large percentage of its nitrogen from the air. The needs of a crop of peanuts may be supplied by 1,300 lb. of acid phosphate, 300 lb. of dried blood, and 400 lb. of muriate of potash. This mixture would contain about 2 per cent. of nitrogen, 10.4 per cent. of phosphoric acid, and 10 per cent. of potash. This should be used at the rate of 300 to 500 lb. per acre. Cotton-seed meal may be used to supply the nitrogen, and kainit the potash, although larger amounts of these per acre would have to be supplied.

Farmyard manure may be used to advantage, and will increase the vigour of the plant. Lime may be employed where wanting in the soil, in various forms, 20 to 30 bushels per acre being sufficient.

CULTIVATION.

The cultivation of the peanut is a very simple matter. The seed-bed should be finely pulverised to a depth of at least 5 in., then harrowed and rolled to obtain a level surface. Only well-developed and perfectly matured seed should be planted. About 2 bushels of seed in the pod should be allowed for each acre of land. Planting may be done at any time after danger of killing by frost is past. The seed is usually sown in drills 3 to 3½ ft. apart, and the kernels are placed from 15 to 18 in. apart in the drills. The land must be kept thoroughly clear of weeds, and this must be done early in the season, since the runners must not be disturbed after they form and spread.

HARVESTING.

Peanuts must be harvested before frosts occur, as frost injures both the vines and the kernels. The crop is generally harvested by means of a plough without a mouldboard, and which has a swordlike cutting share attached to the side. The knife passes under the row without injuring the nuts, and cuts the roots. Men following behind the plough with pitchforks, shake the nuts free from the soil,

and pile them in windrows. Other labourers follow and stack them around poles 7 ft. high, which are set at convenient places in the field. Care is taken to see that the vines do not come in contact with the soil, and the nuts are placed on the outside of the stacks. After the stack has been completed it is carefully covered with straw or grass as a roofing to keep off the water during rainy weather. After curing in these stacks for twenty days or more, the peanuts are ready to be picked. This is slow and tedious work, and one of the greatest expenses of the peanut-grower. After the nuts are picked, they should be cleaned before being packed in sacks, which hold about 100 lb. each.

VARIETIES.

There is a number of varieties of peanuts, all of which are cultivated extensively. Of these, the Virginia "bunch" and "running" are two of the most popular and widely known in the trade. In Australia, we have only two varieties—the ordinary little dwarf, mostly grown by Chinese gardeners, and the "Giant." The latter develop into magnificent plants, with deep tap-roots and widely spreading stems. They yield, on an average, about 100 good pods per acre. As fifty "Giants" go to make 1 lb., this is equivalent to 2 lb. per plant, or considerably over 4 tons (8,960 lb.) to the acre. But it would not be wise to reckon always on such yields, 2 tons being nearer the average crop. Even at that rate, peanut-growing pays better than horseracing (when you win at the latter game, which is seldom the case), whilst in gardening you are always on the winning side. At current market prices, an acre of peanuts may run fairly up to the three figures, whilst, at the price paid for seeds, one may reckon by hundreds.

In a paper on the peanut in the "Agricultural Gazette of New South Wales," 2nd July, 1918, by W. D. Kerle, Experimentalist, Hawkesbury Agricultural College, much valuable information on this crop is given, and is thus summarised:—

1. There are large areas of suitable land in the State.
2. The climatic conditions are favourable.
3. There is an extensive market for nuts of good quality for roasting and confectionery.
4. There are large quantities of edible and crude peanut oil imported annually, which could be produced locally.
5. The leading importers are prepared to use locally-grown nuts if the quality is equal to the imported article.
6. The protection afforded by the import duties of 2d. per lb. on nuts and 2s. 6d. per gallon on edible oil, with the possibility of increased duty when the area of production warrants it.
7. Excellent machines for handling in all stages of the industry are procurable from overseas.
8. The uses to which the peanut is put are ever increasing, and the demand is greater each year.
9. It is of considerable value on the farm holding as a soil-renovating crop and a quick-fattening fodder for all classes of stock.

This being so, how is it that so few of our farmers and others go in for this crop? We feel sure that, if the peanut were better known, there would not be a single farm, station, school, or cottage garden without its large or small crop of peanuts, which would supply both man and beast with that proportion of healthy vegetable fat which should never be wanting in a healthy and well-balanced diet.

GRAIN AND GRASS.

As an instance of the adoption of new methods that might be called revolutionary, we draw attention to the fact that England is growing wheat and oats on grass *without ploughing*. The seed and fertiliser are drilled in by a special tool on the end of the drills. This, as described by the *London Times*, is done

in July, and the growing crop is pastured off that autumn. The next spring the grain and grass are harvested together, the grain heads being cut by a "header," while the grass and grain straw are cut by another knife on the same machine. The claim is made that a sturdy growth of grain results, and that the grass sod is not injured. The aim is to prevent the ploughing up of all the permanent English pastures, owing to the need for growing more grain for war-feeding purposes. It is claimed that no injury is done to the grass sod—which would be sacrilege in England—while the sod serves to protect the grass from freezing or drought damage. Expense of ploughing is avoided, and the land is kept available for cattle pasturing. The war is causing us to use our wits, to devise new methods, to turn over old ones to see whether they are as sound as we thought.—"Farm Bulletin."

MARKET FOR LINSEED.

In our September issue, it was stated that Messrs. Meggitt, Limited, linseed oil and meal manufacturers, Sydney, guarantee growers of linseed a market for at least 10,000 tons annually. We have now been informed by the firm that their requirements approximate not less than 24,000 tons per annum. We refer our readers to the article on "Linseed and Flax Growing" in the Journal for September, for full instruction as to the cultivation, harvesting, threshing, and marketing of this valuable crop.

A THRIVING FARM HOMESTEAD IN THE GLADSTONE DISTRICT.

We are indebted to Mr. G. Carter, M.L.A., member for Port Curtis, for the following notes on farm settlement in the Boyne Valley, which will give some idea of what may be done by an energetic man on the land in this fertile district:—

The accompanying photos are taken from the farm of Mr. Nicholas Hellen, Boyne Valley, Gladstone district, and will serve to illustrate the



fertility and suitability of this extensive valley for closer settlement. The best of this well-watered and rich area is at present held under pastoral leases that will shortly expire, and the whole or greater portion,



1 and 2.—A crop (this year) of 52 acres of potatoes, which averaged about 5 tons to the acre, and were of excellent quality.

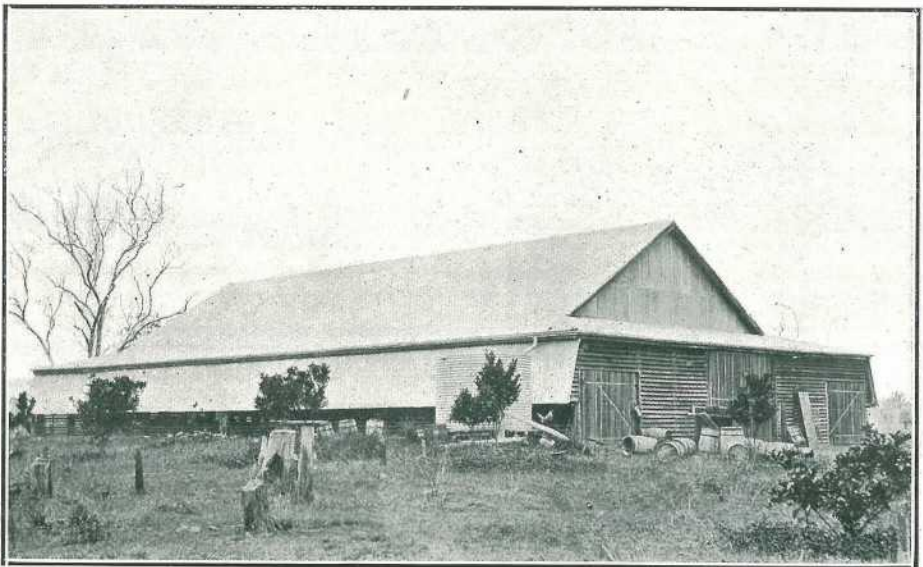
I understand, will then be made available by the Lands Department for agricultural and grazing farms. There will be room for a large number of settlers, and as the land is well adapted for both general, dairying,



3.—An area of about 50 acres of maize, which returned a very heavy yield of first-class quality.



4.—Photo. of Mr. Hellen driving his own motor-plough.



5.—The barn, erected prior to the war, at a cost of £1,000.

and fruit farming, it should make an excellent settlement for returned soldiers.

Mr. Hellen's farm is about 40 miles by rail from the North Coast Trunk Railway Line, and about 45 miles from the magnificent deep-water port of Gladstone.



6.—The kitchen.

The photos give a good representation of the salient features of the farm.

THE COTTON INDUSTRY.

Cotton-seed may still be sown during this month, and in late Southern districts in November. As stated in the Departmental Announcements in another part of this issue of the Journal, the Department of Agriculture continues to make a free distribution of first-class Upland cotton-seed to intending growers, and during 1919, when early application for seed should be made, intending growers stating at the same time the area which it is intended to devote to this crop. The Department undertakes to advance 2d. per lb. on all cotton delivered at the ginnery in William street, Brisbane, when it will be ginned and marketed on owners' account, and any surplus, after sale, will be paid to the growers *pro rata*, after deduction of charges. Consignments are to be forwarded addressed to the Under Secretary, Department of Agriculture and Stock, Brisbane, who should be advised of the despatch. Ten pounds of seed will be supplied per acre, to provide for replants or other contingencies.

ASTRONOMICAL DATA FOR QUEENSLAND.

TIMES COMPUTED BY D. EGLINTON, F.R.A.S.

TIMES OF SUNRISE AND SUNSET AT BRISBANE.

1918.	SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.		
Date.	Rises.	Sets.	Rises.	Sets.	Rises.	Sets.	Rises.	Sets.	
1	6·3	5·34	5·29	5·47	4·59	6·5	4·46	6·28	PHASES OF THE MOON. The Phases of the Moon commence at the times stated in Queensland, New South Wales, Victoria, and Tasmania. H. M. 5 Sept. ● New Moon 8 44 p.m. 14 " ☾ First Quarter 1 3 a.m. 20 " ○ Full Moon 11 1 p.m. 27 " ☽ Last Quarter 2 39 p.m. The Moon will be farthest from the earth on the 8th, and nearest to it on the 21st. 5 Oct. ● New Moon 1 5 p.m. 13 " ☾ First Quarter 3 0 p.m. 20 " ○ Full Moon 7 35 a.m. 27 " ☽ Last Quarter 3 35 a.m. The Moon will be farthest from the earth on the 6th, and nearest to it on the 20th. 4 Nov. ● New Moon 7 2 a.m. 12 " ☾ First Quarter 2 46 a.m. 18 " ○ Full Moon 5 33 p.m. 25 " ☽ Last Quarter 8 25 p.m. The Moon will be farthest from the earth on the 2nd and 29th, and nearest on the 17th. 4 Dec. ● New Moon 1 19 a.m. 11 " ☾ First Quarter 12 31 p.m. 18 " ○ Full Moon 5 18 a.m. 25 " ☽ Last Quarter 4 31 p.m. The Moon will be nearest to the earth on the 15th, and farthest from it on the 27th. There will be an annular or ring-shaped Eclipse of the Sun on 3rd December, but it will not be visible in Australia.
2	6·2	5·34	5·27	5·47	4·58	6·5	4·46	6·28	
3	6·1	5·35	5·26	5·48	4·57	6·6	4·46	6·29	
4	6·0	5·35	5·25	5·48	4·56	6·7	4·46	6·30	
5	5·59	5·36	5·24	5·49	4·55	6·8	4·46	6·31	
6	5·58	5·36	5·22	5·50	4·54	6·9	4·46	6·32	
7	5·57	5·36	5·21	5·50	4·54	6·9	4·46	6·32	
8	5·56	5·37	5·20	5·51	4·53	6·10	4·46	6·33	
9	5·54	5·37	5·19	5·51	4·53	6·10	4·46	6·34	
10	5·53	5·38	5·18	5·52	4·52	6·11	4·47	6·35	
11	5·52	5·38	5·17	5·52	4·52	6·12	4·47	6·35	
12	5·51	5·39	5·16	5·52	4·51	6·13	4·47	6·36	
13	5·50	5·39	5·16	5·53	4·51	6·13	4·48	6·36	
14	5·49	5·40	5·15	5·53	4·50	6·14	4·48	6·37	
15	5·47	5·40	5·15	5·53	4·50	6·15	4·49	6·37	
16	5·46	5·41	5·14	5·54	4·49	6·16	4·49	6·38	
17	5·45	5·41	5·13	5·54	4·49	6·17	4·50	6·38	
18	5·44	5·41	5·12	5·55	4·48	6·17	4·50	6·39	
19	5·43	5·42	5·11	5·55	4·48	6·18	4·50	6·39	
20	5·42	5·42	5·10	5·56	4·48	6·19	4·51	6·40	
21	5·41	5·43	5·9	5·56	4·48	6·20	4·51	6·40	
22	5·40	5·43	5·8	5·57	4·47	6·21	4·52	6·41	
23	5·39	5·44	5·7	5·58	4·47	6·21	4·52	6·41	
24	5·37	5·44	5·7	5·58	4·47	6·22	4·53	6·42	
25	5·36	5·44	5·6	5·59	4·47	6·23	4·54	6·42	
26	5·35	5·45	5·5	5·59	4·46	6·24	4·54	6·43	
27	5·33	5·45	5·4	6·0	4·46	6·25	4·55	6·43	
28	5·32	5·46	5·3	6·1	4·46	6·25	4·55	6·44	
29	5·31	5·46	5·2	6·2	4·46	6·26	4·56	6·44	
30	5·30	5·46	5·1	6·3	4·46	6·27	4·56	6·45	
31	...	...	5·0	6·4	...	...	4·57	6·45	

For places west of Brisbane, but nearly on the same parallel of latitude—27½ degrees S.—add 4 minutes for each degree of longitude. For example, at Toowoomba the sun would rise and set about 4 minutes later than at Brisbane if its elevation (1,900 feet) did not counteract the difference in longitude. In this case the times of sunrise and sunset are nearly the same as those for Brisbane.

At St. George, Cunnamulla, Thargomindah, and Oontoo the times of sunrise and sunset will be about 18 m., 30 m., 38 m., and 49 minutes, respectively, later than at Brisbane at this time of the year.

At Roma the times of sunrise and sunset during September, October, and November may be roughly arrived at by adding 16 minutes to those given above for Brisbane.

The moonlight nights for each month can best be ascertained by noticing the dates when the moon will be in the first quarter and when full. In the latter case the moon will rise somewhat about the time the sun sets, and the moonlight then extends all through the night, when at the first quarter the moon rises somewhere about six hours before the sun sets, and it is moonlight only till about midnight. After full moon it will be later each evening before it rises, and when in the last quarter it will not generally rise till after midnight.

It must be remembered that the times referred to are only roughly approximate, as the relative positions of the sun and moon vary considerably.

[All the particulars on this page were computed for this Journal, and should not be reproduced without acknowledgment.]

Pastoral.

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

The Office of the Secretary of the undermentioned Herd Book Societies 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, Tingoorra	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.

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 ..	"Fowlerston," Kings-thorpe	1	15	Do.
R. S. Alexander ..	Glenlomond Farm, Coolumboola	1	3	Do.
Ditto	Ditto	1	..	Holstein-Friesian Herd Book of New Zealand
S. H. Hoskings ..	St. Gwithian, Toogooloowah	..	..	Holstein-Friesian Herd Book of Australia
C. Behrendorff ..	Inavale Stud Farm, Bunjurgun, Q.	3	9	Do.
E. Swayne	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	3	43	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.
A. K. Yorksten ..	"Dunure," Miles ..	2	8	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

THE FRIESIAN CATTLE CLUB OF AUSTRALIA.

HOLSTEIN-FRIESIAN CATTLE.

At its annual meeting recently, the Friesian Cattle Club of Australia decided to reopen the Appendix of its Herd Book until 1st of April, 1919, for females showing not less than three-quarter pure blood, provided that they were approved by the Inspector on type, conformation, and colour. This step was taken in the interests of breeders in the Southern States who had not availed themselves of this appendix when it was opened two years ago.

Forms and full particulars on application to the Secretary, 303 Queen street, Brisbane.

PREPARATION OF WOOL CLIP FOR MARKET.—No. 1.

By R. WILSON, Assistant Instructor in Sheep and Wool.

CROSSBRED CLASSING.

Owing to late comment in the Press by the State Wool Committee and others in regard to the indifferent and faulty methods of preparing a wool clip for market I take the opportunity of giving some practical information on the subject.

Crossbreds were specially mentioned, as that class of sheep and wool are not so well known in Queensland as those of the merino, and in consequence do not receive the same careful handling. The classing of crossbred wool differs from merino classing, the latter being classed more by its general characteristics, while crossbred is classed according to the fibre.

In merinos we have first and second combings and clothings, classed mostly on account of their length, yield, and general appearance, whilst in crossbreds yield plays an unimportant part, as this description of wool does not vary in condition sufficiently to make two sorts of the one quality as in merinos, where one may be heavy and the other light.

The qualities of the merinos range from 60s. to 70s. for all practical purposes, while crossbreds have a wider range, from 36s. to 54s., and comebacks 56s. to 58s.

I mention the latter, as they are often found in a crossbred clip.

In the classing of the crossbreds *fibre* must be considered the main feature, other considerations taking next place.

I will take, for example, a clip of about 30,000, where the qualities would range from, say, 36s. to 54s., or 56s.

AAA (or fine) crossbred to contain all sound, lengthy-stapled fleeces of good colour and appearance and qualities, ranging from a good 48s. to 54s., having an average spinning value of about 50s. quality.

Where there are sufficient quantities of comeback wool to justify making a finer sort than your AAA, do so, and brand it "*super crossbred*."

AA (medium) crossbred to contain wool from 44s. to 46s. qualities, and any of the rougher 48s. that would suit the lower class better than the first.

All other features mentioned in the first line to be considered.

A (strong) crossbred to contain all qualities from 40s. and under.

The three lines, AAA, AA, and A will carry the bulk of the clip, but it may be necessary to make a line of the shorter-stapled fleeces or of a tender sort.

Short-stapled wool may be a little irregular in quality, but of short, blocky staples, and would suit the requirements of hosiery, the wool being short and spongy.

The irregularities in this line would be well compensated by the regularity of your leading lines as well as making a line suitable to the hosiery trade.

Rolling.—All fleeces should be rolled on the shoulders, showing the white skin side outward.

Skirting.—As clips differ so materially, the question must be left to the grower or expert employed.

I would advise that, should the burr, seed, or discoloured patches be light, they should be taken off, but if they are spread over the fleece, then only the lightest skirting possible be taken off, including rough bitty pieces and fatty edges.

Skirtings should be carefully picked over and put into various grades, as follows:—

1st Pieces crossbred should consist of all the biggest and lightest pieces.

2nd Pieces crossbred much the same as in merino. In a clip where skirtings are inclined to be heavy, sorting should be done well, and if practicable, all the bitch pieces taken out, packed separately, and branded A pieces.

The reason for doing this is on account of the bitch wool being so much rougher in quality than the wool from the sides, shoulders and neck, thus making two even lines of two distinct qualities.

Bellies, stain, and locks to be treated as in the case of the merino.

Small numbers of crossbreds should not be as finely classed. Any number from 10,000 sheep and upward could be treated on about the same lines as a clip of 40,000.

In clips numbering less than 10,000, which are more common in Queensland, the bulk of the fleece should be worked into two lines with, if necessary, a cast sort. The two bulk lines should be kept as even as possible, which would necessitate the cast sort being uneven.

As crossbreds cut a larger fleece and take up more space in a bale than merino, more can be done with them when in small numbers.

Where there are only a few crossbreds in a merino clip, it is always best to roll them unskirted and pack separately.

Should you have sufficient to make a bulk line, skirt lightly and pack pieces, bellies, &c., separately.

Classing of all wools, whether merino or crossbred, depends entirely on the bulk we are working from, and it is useless to try and force a sort when the clip you are handling does not contain it.

So when handling a clip of crossbreds where the finest quality is a 46s., gauge your sort accordingly, and do not think you must get a fine 50s. crossbred from every crossbred clip, but make it according to the quality that predominates.

[TO BE CONTINUED.]

A PRACTICAL SCHEME FOR THE ERADICATION OF THE RABBIT PEST.

By L. G. JONES.

The following suggestions for the elimination of the rabbit pest in Queensland by the writer, who has had considerable experience in rabbit-infested country in Tasmania, are well worth the attention of grazing farmers and others located in country where rabbits are numerous. Mr. Jones writes:—

We know that all schemes up to the present for the destruction of rabbits have been proved to be failures, more or less. When a station is grossly infested with rabbits, and the owner lays poison, a small percentage will be picked up dead, and the run will appear fairly clean; and at first sight, particularly if a man is of a sanguine nature, he will fool himself into the belief that they have all died in their burrows, hollow logs, &c., and conclude that he has done good work. Not so. Bunny is a very cunning animal. When a rabbit becomes poisoned, he squeals and shows other signs of distress, which alarms those not poisoned, and they drive into the next paddock; and if the laying of poison has been general over the whole station they drive on to the neighbouring stations. Then, after awhile, if the neighbours lay poison they drive back again. This is a fact, as anybody that has had experience in this matter will confirm. Likewise with destruction by trapping. All experienced rabbit-trappers know that in the early part of the rabbit season or when a trapper first sets his traps at a warren there is no need for him to shift his traps for two or three days, but as the season progresses it calls for a good deal of skill on the part of the trapper to make good catches, when he will need to shift his traps every day and often long distances if he desires to make good catches, and at the end of the season the run appears to be very clean. Very few rabbits are seen aboveground. The number of skins sold prove conclusively that the apparent scarcity is not due to the numbers that have been caught. No; they get cunning and avoid the traps and drive away from the locality where the traps are, and often stay underground for long periods during the hunting season. The same remarks apply to all other forms of rabbit destruction—hunting, shooting, ferreting, &c.

A general conception of how to cope with this pest will be as follows:—

Firstly, the Government should make a monopoly of all rabbit, hare, and marsupial skins, and make it illegal for any person or persons to traffic in them. All skins would then go through their hands, and they (the Government) should hold these skins and sell them at such a price as will defray the cost of catching them.

Secondly, the Government should then set the price of rabbit-skins, say, at 6s. per dozen (large and small), leaving no incentive for people to farm them. This

would have the effect of starting thousands of people catching rabbits in their spare time, Saturdays and Sundays, and thousands of others would be after them exclusive of any other work, because it would pay them so to do.

Thirdly, as it was judged that the rabbits in a district were getting scarce I would raise the price of the skin. This would not be adding expense to the scheme, because you would be buying a less number of skins. And as the rabbits got still more scarce I would raise the price again and again (always keeping up the incentive to kill) until I brought them within the power of their natural enemies, when I would expect them to complete the job.

This scheme would work itself out, without any expensive staff. Naturally if you make a thing worth having people will go after it, and the destruction of rabbits would become general. Follow this principle as far as it takes you and you will soon see the rabbit pest a thing of the past.

DEHORNING WITH SAW OR CLIPPERS.

After the horns of calves have reached a certain size it becomes necessary to cut them off. Saws and clippers are the two common instruments used for this purpose. The clippers are quicker and less painful to the animal, but the saw does not crush the horn as do the clippers, especially in the case of old animals whose horns have become hard and brittle. On the other hand, when the saw is used there is not so much bleeding, as the action of the saw causes the blood vessels to be lacerated, and a clot of blood forms quickly.

Clippers give very good results with young cattle, but with old animals the saw should be used, as the crushing of the hard bone in an older animal causes the bone to splinter, which makes a wound that heals very slowly. The loss of blood from older animals will also be more likely to cause trouble than with younger animals. Although some stockmen prefer using the clippers altogether, it is much safer to use the saw altogether than it is to use the clippers altogether. A desirable compromise would be to use the saw on the hard, brittle horns of the older animals and the clippers on the soft, tender horns of the younger animals.

Whichever instrument is used, care should be taken to cut enough of the horn to insure that unsightly stubs will not grow out. From one-eighth to one-half inch of skin should be taken off to insure this. When this is done the horn-forming cells are probably destroyed, which prevents further growth of horns. If none of the skin is taken off the stubs of horns will grow out and sometimes are almost as effective in hooking as the original horn. Occasionally, too, such a stub will grow down into the eye of the animal, which makes it necessary to perform the operation again.

TREATMENT AFTER DEHORNING.

Cattle should never be dehorned during warm weather—that is, weather that is warm enough to cause danger of the wound becoming infested with screw worms. If there is any danger of flies whatever, some fly-repellant should be applied to the wound immediately after the animal is dehorned. Either coal tar or pine tar is very satisfactory. Both are non-irritating and adhere well to the skin and the wound. Whichever of these is used, if too thick to apply conveniently, may be thinned with fish oil or linseed oil. Either an ordinary paintbrush or a swab made by tying a rag on a stick may be used to apply the tar.

The practice of placing a piece of cotton outing flannel over the wound made by dehorning, as advocated by some stockmen, usually meets with poor results, except possibly when the cattle are to be turned into fields where they will be exposed to burrs or to severe winds. In such cases the cloth protects the wound to some extent. Ordinarily, it requires too much time and trouble, and not 50 per cent. of the cloths will stick after they are put on. The practice of using a hot iron to sear the wound and stop the bleeding is not practicable, nor is it necessary.

If in spite of all precautions the wound becomes infested with screw worms they may be removed by saturating a piece of absorbent cotton with chloroform and inserting it into the wound, or by pouring gasoline into the horn cavities. The chloroform or gasoline will kill the screw worms, after which they may be removed with a pair of forceps, a probe, or by forcing the animal's head to one side and allowing them to drop out. Carbolic acid or some other efficient disinfectant may be used for killing the worms, but these are not so effective as chloroform or gasoline. If the carbolic acid solution is used, add three tablespoonfuls of the acid to a quart of water. A stronger solution than this is liable to injure the skin or the tender tissue of the wound. This solution can be applied with a syringe or by using a brush or a swab.

After the worms have been removed, either pure pine tar or one of the coal-tar disinfectants in proper dilution may be applied.—“Pastoral Review.”

Dairying.

THE DAIRY HERD, QUEENSLAND AGRICULTURAL COLLEGE, GATTON.

MILKING RECORDS OF COWS FROM 31ST JULY TO 31ST AUGUST, 1918.

Name of Cow.	Breed.	Date of Calving.	Total Milk.	Test.	Commercial Butter.	Remarks.
			Lb.	%	Lb.	
Auntie's Lass ...	Ayrshire ...	3 Aug., 1918	1,211	3.5	50.60	
Lady Melba ...	Holstein ...	31 Mar. "	971	3.2	36.22	
Miss Betty ...	Jersey ...	9 June "	542	4.7	30.01	
Rosalie II. ...	Ayrshire ...	2 July "	503	5.0	29.68	
Magnet's Leda ...	Jersey ...	20 June "	538	4.6	29.15	
Skylark ...	Ayrshire ...	25 July "	613	4.4	28.29	
Buttercup ...	Shorthorn ...	30 May "	730	3.2	27.25	
Charming Damsel ...	Ayrshire ...	1 May "	526	4.4	27.24	
La Hurette Hope ...	Jersey ...	10 July "	501	4.6	27.15	
Miss Security ...	Ayrshire ...	19 July "	632	3.5	25.86	
Sylvia II. ...	Shorthorn ...	14 July "	678	3.2	25.36	
Nina ...	"	19 July "	674	3.2	25.02	
College Bluebell ...	Jersey ...	18 July "	602	3.0	24.87	
College Damsel ...	Holstein ...	4 Aug. "	739	2.8	24.33	
Lady Margaret ...	Ayrshire ...	27 Dec., 1917	448	4.6	24.27	
Leda's Jessie ...	Jersey ...	25 Mar., 1918	383	5.3	23.88	
Yarraview Ida's Hope ...	Guernsey ...	5 May "	491	4.8	23.29	
Miss Edith ...	Jersey ...	23 Dec., 1917	265	6.2	23.09	
Dawn of Warragburra ...	"	4 May, 1918	424	4.6	22.98	
Lady Peggy ...	Ayrshire ...	30 Mar. "	569	3.4	22.63	
Lady Loch II. ...	"	13 June "	533	4.6	22.44	
Snowflake ...	Shorthorn ...	28 June "	530	3.4	22.06	
Mistress Bee ...	Jersey ...	23 Jan. "	311	5.9	21.72	

NOTE ON THE JUICE OF THE CHOKO.

The following note on the juice of the choko vegetable was sent to the Government Botanist of New South Wales, Mr. J. H. Maiden, and was published in the July issue of the "Agricultural Gazette of New South Wales":—

The writer, Mr. E. W. Smith, of Bexley, said—"A few weeks ago, my wife informed me that when she was peeling a choko, her hands became numb, and she thought they were becoming paralysed. A fortnight later the same thing happened under similar circumstances, and I came to the conclusion that the juice of this vegetable must have local anæsthetic properties. I have since had this opinion confirmed from questions I put to another lady whose experience was the same. I feel sure that the concentrated juice of this vegetable would prove a very powerful and valuable local anæsthetic." Mr. Maiden stated that, on speaking to a member of his household on the subject, she at once replied that the peeling of chokos makes her hands cold and rough, and therefore she always uses a fork in order that she may touch them as little as possible.

Poultry.

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

All pens, with the exception of one or two odd cases, are now in full lay. Broodiness has not been so prevalent as during the corresponding month last year. The following competitors have had broodies:—Mee (4), Feilly (3), W. Smith (2), Lutz (1), Fitzpatrick (1), Claussen (1), and Puff (1). Three deaths have occurred, viz.:—Zahl (2) and W. Reilly (1). Five cases of sickness have been treated. Some fine laying has been done by the heavy breeds during the month. D. Fulton's "A" bird has laid for forty-three consecutive days, and "C" for forty-one days. The "A" bird missed only three days from 5th June. The weather on the whole has been good, though some cold nights have been experienced, on some of which the thermometer registered 4 degrees below freezing point. During the month the eggs were weighed, with the results shown in table below. In carry out this weighing each individual egg was weighed, and, though complete details cannot be given, one very interesting point stood out in the case of the pullets which are being single tested. Thus it was found that in some cases the pullet laid consecutive eggs of almost identical weight. For example: G. W. Hindes's "D" bird laid five consecutive eggs of 2 oz. each, and throughout Mr. Hindes's hens showed little individual variation. In other cases, hens laid on consecutive days eggs of very varying weights (double-yolked eggs were not considered): thus, Mrs. A. T. Coomber's "B" bird laid eggs weighing $1\frac{5}{8}$, $1\frac{3}{4}$, $1\frac{7}{8}$, $1\frac{3}{4}$, and $1\frac{3}{4}$ oz. As a matter of analysis, 25 birds showed no variation, 139 a variation of $\frac{1}{8}$ oz., 56 a variation of $\frac{1}{4}$ oz., 5 a variation of $\frac{3}{8}$ oz., 4 a variation of $\frac{1}{2}$ oz., and 1 a variation of $\frac{5}{8}$ oz. Thus it would seem that uniformity of eggs is a character which may be bred in our pullets. From the table of weights it will be seen that there are a fair number of birds amongst the light breeds below standard, but amongst the heavy breeds the condition is deplorable, only 5 out of the 18 competing groups yielding eggs up to requirements, while 47 out of the 66 single tested birds are ineligible for prizes. One other point is worthy of notice. The pen of the Dixie Egg Plant, which put up the very fine record of 579 eggs up till the 31st July, yielded another nine eggs by 2nd August. Thus their total for the four full months of winter laying (the College competition started on 3rd April) is 588 eggs, a world's record for numbers. This

is unfortunately largely discounted, inasmuch as every one of the six birds concerned lays an egg below the standard of 24 oz. to the dozen. The following are the individual records:—

Competitors.	Breed.	August.	Total.
LIGHT BREEDS.			
*Dixie Egg Plant	White Leghorns ...	144	723
*G. W. Hindes	Do.	137	633
*E. Chester	Do.	145	631
*G. Howard	Do.	143	620
C. P. Buchanan	Do.	136	610
*C. Knoblauch	Do.	133	609
*G. Prince	Do.	140	601
*T. Fanning	Do.	131	596
*G. H. Turner	Do.	137	580
*W. Becker	Do.	133	580
*Mrs. L. Henderson	Do.	118	576
*R. Holmes	Do.	137	567
*W. Lyell	Do.	134	566
*L. G. Innes	Do.	135	546
*O.K. Yards	Do.	119	546
*Oakland Poultry Farm	Do.	132	541
*E. A. Smith	Do.	133	540
B. Caswell	Do.	122	529
*Dr. E. C. Jennings	Do.	125	514
H. Fraser	Do.	111	506
*Range Poultry Farm	Do.	115	501
J. J. Davies	Do.	117	498
*T. Taylor	Do.	115	496
*Quinn's Post Poultry Farm	Do.	134	495
*Chris. Porter	Do.	122	494
O. W. J. Whitman	Do.	108	489
*Mrs. A. T. Coomber	Do.	128	471
*J. Zahl	Do.	118	471
R. T. G. Carey	Do.	110	462
*J. M. Manson	Do.	130	440
*Homalayan Poultry Farm	Do.	124	430
G. Williams	Do.	80	426
Mrs. L. F. Anderson	Do.	128	413
S. Wilkinson	Do.	91	408
*T. B. Hawkins	Do.	122	407
Mrs. A. G. Kurth	Do.	114	380
G. Trapp	Do.	106	378
*Mrs. R. Hunter	Do.	121	377
Shaw and Stevenson	Black Leghorns ...	118	377
*J. W. Newton	White Leghorns ...	115	376
H. B. Stephens	Do.	108	372
H. F. Britten	Do.	104	368
Progressive Poultry Pens	Do.	88	347
B. Chester	Do.	120	337
P. C. Oldham	Do.	112	316
W. A. Wilson	Do.	96	295
A. W. Walker	Do.	114	274
HEAVY BREEDS.			
*Nobby Poultry Farm	Black Orpingtons ...	138	668
*E. F. Dennis	Do.	144	550
*E. Morris	Do.	141	549
*A. E. Walters	Do.	157	547
T. Hindley	Do.	123	544
*Mars Poultry Farm	Do.	136	497

EGG-LAYING COMPETITION—*continued.*

Competitors.					Breed.	August.	Total.
HEAVY BREEDS— <i>continued.</i>							
*W. Smith	...	...	...	...	Black Orpingtons	124	497
*R. Burns	...	...	...	...	Do.	146	491
*W. H. Reilly	...	...	...	...	Chinese Langshans	117	491
*J. W. Macrae	...	...	...	...	Black Orpingtons	119	484
E. M. Larsen	...	...	...	...	Do.	105	482
*D. Fulton	...	...	...	...	Do.	164	474
A. Shanks	...	...	...	...	Do.	138	420
W. J. Mee	...	...	...	...	Do.	98	396
T. W. Lutze	...	...	...	...	Do.	132	364
*F. A. Claussen	...	...	...	...	Rhode Island Reds	124	363
H. Puff	...	...	...	...	Do.	90	308
J. Fitzpatrick	...	...	...	...	Do.	124	266
Totals	...	...	...	...	...	8,023	31,103

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

RESULTS OF SINGLE HEN PENS.

Competitor.	A.	B.	C.	D.	E.	F.	Total.
LIGHT BREEDS.							
Dixie Egg Plant	116	117	130	112	121	127	723
G. W. Hindes	131	107	104	105	100	86	633
E. Chester	105	112	97	123	96	98	631
G. Howard	96	104	110	102	98	110	620
C. P. Buchanan	99	95	107	96	110	103	610
C. Knoblauch	99	92	115	98	104	101	609
Geo. Prince	73	111	109	106	97	105	601
T. Fanning	110	98	108	71	106	103	596
W. Becker	96	97	79	112	89	107	580
G. H. Turner	54	77	108	109	127	105	580
Mrs. L. Henderson	101	86	97	64	112	116	576
R. Holmes	110	102	89	88	80	98	567
W. Lyell	99	102	102	92	84	87	566
O.K. Poultry Yards	83	102	104	83	100	74	546
L. G. Innes	94	114	122	60	57	99	546
Oakland Poultry Farm	78	99	102	103	85	83	541
E. A. Smith	70	107	96	106	95	66	540
Dr. E. C. Jennings	73	109	97	83	90	62	514
Range Poultry Farm	33	115	62	89	95	107	501
Thos. Taylor	54	96	92	74	85	95	496
Quinn's Post Poultry Farm	111	66	80	69	104	65	495
C. Porter	49	91	96	71	88	99	494
J. Zahl	100	76	90	88	67	50	471
Mrs. Coomber	52	96	75	81	55	102	471
J. M. Manson	104	95	106	49	35	51	440
Homalayan Poultry Farm	93	79	60	52	92	54	430
T. B. Hawkins	83	67	94	46	64	53	407
Mrs. R. Hunter	61	93	11	60	69	83	377
J. W. Newton	72	101	27	49	72	55	376
HEAVY BREEDS.							
Nobby Poultry Farm	125	108	100	100	114	121	668
E. F. Dennis	116	93	85	41	123	92	550
E. Morris	77	91	111	109	94	67	549

DETAILS OF SINGLE HEN TESTS—*continued.*

Competitors.	A.	B.	C.	D.	E.	F.	Total.
HEAVY BREEDS— <i>continued.</i>							
A. E. Walters	90	115	69	99	113	61	547
W. Smith	125	91	28	82	75	96	497
Mars Poultry Farm	83	96	85	83	77	73	497
W. H. Reilly	87	111	89	31	75	95	491
R. Burns	73	82	64	70	108	91	491
J. W. Macrae	48	50	107	78	98	103	484
D. Fulton	88	84	69	65	39	129	474
F. A. Claussen	71	68	46	71	76	31	363

WEIGHTS OF EGGS, SINGLE HEN PENS.

Competitor.	A.	B.	C.	D.	E.	F.	Group.
	Oz.	Oz.	Oz.	Oz.	Oz.	Oz.	Oz.
LIGHT BREEDS.							
G. W. Hindes	2 $\frac{1}{8}$	1 $\frac{7}{8}$	2	2	2	2 $\frac{1}{4}$	2
O. K. P. Farm	2 $\frac{1}{8}$	2	2 $\frac{1}{8}$	1 $\frac{3}{8}$	2	2	2
Range P. Farm	..	2 $\frac{1}{8}$	1 $\frac{7}{8}$	2 $\frac{1}{8}$	1 $\frac{7}{8}$	2	2
L. G. Innes	2	2	1 $\frac{8}{8}$	2 $\frac{1}{8}$	2 $\frac{1}{4}$	2 $\frac{1}{8}$	2 $\frac{1}{8}$
Geo. Prince	1 $\frac{7}{8}$	1 $\frac{7}{8}$	1 $\frac{3}{8}$	2	2	1 $\frac{3}{8}$	1 $\frac{7}{8}$
C. Knoblauch	2	2 $\frac{1}{8}$	1 $\frac{7}{8}$	2 $\frac{1}{4}$	1 $\frac{7}{8}$	2	2
Oakland P. Farm	2 $\frac{1}{4}$	2	2	1 $\frac{3}{4}$	2	2 $\frac{1}{8}$	2
E. A. Smith	2 $\frac{1}{8}$	2 $\frac{1}{8}$	1 $\frac{7}{8}$	2 $\frac{1}{8}$	2 $\frac{1}{8}$	1 $\frac{8}{8}$	2
G. Howard.. .. .	2	2	2 $\frac{1}{4}$	2	2 $\frac{1}{8}$	2	2 $\frac{1}{8}$
T. Fanning	2	..	1 $\frac{7}{8}$	2 $\frac{1}{4}$	2	2 $\frac{1}{4}$	2
R. Holmes.. .. .	2 $\frac{1}{8}$	2	1 $\frac{7}{8}$	2	2 $\frac{1}{8}$	2 $\frac{1}{8}$	2
T. B. Hawkins	2	2 $\frac{3}{8}$	2	2 $\frac{1}{8}$	1 $\frac{7}{8}$	2 $\frac{1}{8}$	2 $\frac{1}{8}$
G. H. Turner	2 $\frac{1}{8}$	2 $\frac{1}{8}$	2	1 $\frac{7}{8}$	1 $\frac{8}{8}$	2	2
Mrs. Henderson	3	..	2 $\frac{1}{8}$	2	1 $\frac{7}{8}$	2 $\frac{1}{4}$	2
J. H. Wright	2	2	2 $\frac{1}{4}$	2 $\frac{3}{8}$	2 $\frac{1}{8}$	2	2 $\frac{1}{8}$
C. Porter	1 $\frac{1}{8}$	1 $\frac{3}{4}$	2 $\frac{1}{4}$	2	2	2	2
C. P. Buchanan	1 $\frac{3}{8}$	2	2 $\frac{1}{8}$	2 $\frac{3}{8}$	1 $\frac{7}{8}$	1 $\frac{7}{8}$	2
J. W. Newton	2 $\frac{1}{8}$	1 $\frac{7}{8}$	2	2	2 $\frac{1}{8}$	2 $\frac{3}{8}$	2 $\frac{1}{8}$
Dixie Egg Plant	1 $\frac{8}{8}$	1 $\frac{6}{8}$	1 $\frac{7}{8}$	1 $\frac{7}{8}$	1 $\frac{5}{8}$	1 $\frac{1}{4}$	1 $\frac{7}{8}$
J. Zahl	1 $\frac{7}{8}$	2	2	2 $\frac{1}{4}$	..	..	2
Mrs. R. Hunter	2	1 $\frac{7}{8}$	2	2 $\frac{1}{8}$	1 $\frac{3}{4}$	2 $\frac{1}{8}$	2
W. Becker	2	2	2	1 $\frac{7}{8}$	2	2 $\frac{1}{8}$	2
E. Chester	1 $\frac{7}{8}$	1 $\frac{5}{8}$	2	1 $\frac{3}{4}$	1 $\frac{7}{8}$	2 $\frac{1}{8}$	1 $\frac{7}{8}$
Quinn's Post R.F.	1 $\frac{7}{8}$	1 $\frac{3}{4}$	1 $\frac{3}{4}$	2 $\frac{1}{8}$	1 $\frac{7}{8}$	1 $\frac{7}{8}$	1 $\frac{7}{8}$
Mrs. Coomber	2	1 $\frac{3}{4}$	2 $\frac{1}{8}$	2	2	2	2
Thos. Taylor	2	2 $\frac{1}{8}$	2	2 $\frac{1}{8}$	2 $\frac{1}{8}$	2	2
J. M. Manson	1 $\frac{7}{8}$	1 $\frac{7}{8}$	2	1 $\frac{7}{8}$	2	1 $\frac{7}{8}$	1 $\frac{7}{8}$
Dr. Jennings	2 $\frac{1}{8}$	2	2	1 $\frac{7}{8}$	2	2	2
W. Lyell	1 $\frac{7}{8}$	2	1 $\frac{3}{4}$	1 $\frac{7}{8}$	2	1 $\frac{3}{4}$	1 $\frac{7}{8}$
HEAVY BREEDS.							
J. W. Macrae	2 $\frac{1}{4}$	2	2	2	1 $\frac{3}{4}$	1 $\frac{7}{8}$	2
W. Smith	1 $\frac{7}{8}$	2 $\frac{1}{8}$	2	..	..	1 $\frac{3}{8}$	1 $\frac{7}{8}$
F. A. Claussen	1 $\frac{3}{4}$	1 $\frac{7}{8}$	2	2	2 $\frac{1}{8}$	1 $\frac{7}{8}$	1 $\frac{7}{8}$
W. H. Reilly	1 $\frac{3}{4}$	1 $\frac{3}{4}$	1 $\frac{3}{4}$	1 $\frac{7}{8}$	1	1 $\frac{3}{8}$	1 $\frac{3}{4}$
E. F. Dennis	1 $\frac{3}{8}$	1 $\frac{5}{8}$	1 $\frac{5}{8}$	2	2	2	1 $\frac{3}{4}$
Mars P. Farm	1 $\frac{7}{8}$	1 $\frac{3}{8}$	1 $\frac{3}{8}$	1 $\frac{7}{8}$	1 $\frac{3}{8}$	1 $\frac{5}{8}$	1 $\frac{3}{4}$
A. E. Walters	1 $\frac{7}{8}$	1 $\frac{7}{8}$	1 $\frac{3}{4}$	1 $\frac{3}{4}$	1 $\frac{3}{8}$	1 $\frac{5}{8}$	1 $\frac{3}{4}$
E. Morris	2	2	1 $\frac{3}{4}$	1 $\frac{3}{4}$	1 $\frac{3}{4}$	1 $\frac{3}{8}$	1 $\frac{7}{8}$
R. Burns	2 $\frac{1}{8}$	1 $\frac{7}{8}$	1 $\frac{7}{8}$	2	2	1 $\frac{7}{8}$	2
D. Fulton.. .. .	1 $\frac{7}{8}$	1 $\frac{3}{4}$	1 $\frac{3}{4}$	1 $\frac{7}{8}$	1 $\frac{3}{4}$	2	1 $\frac{7}{8}$
Nobby P. Farm	1 $\frac{3}{4}$	1 $\frac{3}{8}$	1 $\frac{7}{8}$	1 $\frac{7}{8}$	1 $\frac{3}{4}$	1 $\frac{7}{8}$	1 $\frac{3}{4}$

GROUP PENS.

						Average.	Variation.
LIGHT BREEDS.							
H. F. Britten	..	..	..	..	..	2 $\frac{1}{8}$ CZ.	1 $\frac{3}{4}$ to 2 $\frac{1}{8}$ CZ.
G. Williams	..	..	..	..	..	2 $\frac{1}{8}$ "	1 $\frac{3}{4}$ to 2 $\frac{1}{8}$ "
A. W. Walker	..	..	..	..	..	2 $\frac{1}{8}$ "	1 $\frac{3}{4}$ to 2 $\frac{1}{8}$ "
Harold Fraser	..	..	..	..	..	1 $\frac{7}{8}$ "	1 $\frac{3}{4}$ to 2 "
W. A. Wilson	..	..	..	..	..	2 "	1 $\frac{3}{4}$ to 2 $\frac{1}{4}$ "
S. Wilkinson	..	..	..	..	..	1 $\frac{7}{8}$ "	1 $\frac{3}{4}$ to 2 "
Mrs. Anderson	..	..	..	..	..	1 $\frac{7}{8}$ "	1 $\frac{3}{4}$ to 2 $\frac{1}{4}$ "
B. Chester	..	..	..	..	..	2 "	1 $\frac{3}{4}$ to 2 $\frac{1}{8}$ "
Geo. Trapp	..	..	..	..	..	2 "	1 $\frac{3}{4}$ to 2 $\frac{1}{4}$ "
R. T. G. Carey	..	..	..	..	..	1 $\frac{3}{4}$ "	1 $\frac{3}{4}$ to 2 $\frac{1}{8}$ "
O. J. W. Whitman	..	..	..	..	..	1 $\frac{7}{8}$ "	1 $\frac{3}{4}$ to 2 $\frac{1}{4}$ "
B. Caswell	..	..	..	..	..	2 "	1 $\frac{3}{4}$ to 2 $\frac{1}{4}$ "
P. Oldham	..	..	..	..	..	2 "	1 $\frac{3}{4}$ to 2 $\frac{1}{4}$ "
J. J. Davies	..	..	..	..	..	2 "	1 $\frac{3}{4}$ to 2 $\frac{1}{8}$ "
Shaw and Stevenson	..	..	..	..	..	2 "	1 $\frac{3}{4}$ to 2 $\frac{1}{4}$ "
H. B. Stevens	..	..	..	..	..	2 "	1 $\frac{3}{4}$ to 2 $\frac{1}{4}$ "
Mrs. A. G. Kurth	..	..	..	..	..	2 $\frac{1}{8}$ "	1 $\frac{3}{4}$ to 2 $\frac{1}{8}$ "
Progressive P. Pens	..	..	..	..	..	2 $\frac{1}{8}$ "	2 to 2 $\frac{3}{8}$ "

HEAVY BREEDS.

E. H. Larsen	..	..	..	..	..	1 $\frac{7}{8}$ CZ.	1 $\frac{3}{4}$ to 2 "
J. Fitzpatrick	..	..	..	..	..	2 "	1 $\frac{3}{4}$ to 2 $\frac{1}{8}$ "
T. Hindley	..	..	..	..	..	1 $\frac{7}{8}$ "	1 $\frac{3}{4}$ to 2 "
H. Puff	..	..	..	..	..	2 "	1 $\frac{3}{4}$ to 2 $\frac{3}{8}$ "
W. J. Mee	..	..	..	..	..	1 $\frac{3}{4}$ "	*
A. Shanks	..	..	..	..	..	1 $\frac{3}{4}$ "	1 $\frac{5}{8}$ to 2 "
T. W. Lutz	..	..	..	..	..	1 $\frac{7}{8}$ "	1 $\frac{5}{8}$ to 2 $\frac{1}{8}$ "

* Not sufficient eggs to secure fair average.

QUEENSLAND AGRICULTURAL COLLEGE.

POULTRY CONFERENCE.

The second annual conference of poultrymen was held at the Gatton Agricultural College on Wednesday, 21st August. The morning was spent in inspecting the fowl runs and competition birds, and in the afternoon the conference was held in the gymnasium hall. The Principal of the College (Mr. Cathbert Potts, B.A.) presided, and supporting him on the platform were the Minister for Agriculture (Hon. W. Lennon) and the Under Secretary of the Department (Mr. E. G. E. Scriven).

Mr. Potts said that he was quite sure they would recognise how pleased he was to see before him such a splendid crowd of representative poultrymen, and to feel that the College was the centre of common interest to poultry fanciers. It was an appropriate place, he felt, at which to hold such a conference. Last year they made a commencement with the annual conferences, somewhat doubtful of what success would be attained, but he had now no doubt that the conference would continue for everlasting. He was pleased to know that they had with them the Minister for Agriculture, and he had much pleasure in introducing him to the conference. (Hear, hear.)

The Minister, who was given a very cordial reception, said that it afforded him considerable pleasure to be there that day. He wanted to remind them that that was the second conference of that nature at the College. The one last year was by way of an experiment, but he was glad to think that the holding of that had done a lot of good to the industry, and that it had acted as an incentive to people throughout the State to take an interest in poultry. That the interest had grown was shown by the fact that the attendance at that (the second) conference had grown to double that which they had last year. He had on the stocks at present a Bill which aimed at solving a somewhat difficult problem—a Bill to provide for the standardisation

of foods for poultry. (Hear, hear.) There were many patent foods on the market, more or less good, but the object of the Bill was to see that, by analysis, the people who bought those foods were getting something which they were buying and paying for; and that they were not buying rubbish. That was a rather difficult matter to solve. At a conference of Ministers of Agriculture, held in Sydney recently, this matter had been brought up by himself, in order to see if anything had been done in the other States in regard thereto. He hoped that Act, which was founded on some of the provisions of measures adopted in other States, would be an improvement on them. He was not free to divulge the nature of the Bill at that juncture. Proceeding, he said that he considered Queensland an ideal place for poultry-raising. They had, in the main, a long and not too oppressive summer, and a moderately short and not too severe a winter. Consequently poultry-raising would not be hampered by so many difficulties as were met with in other parts of the world. He regretted to say, however, that they had in Queensland only a fraction of a fowl to each person in the State. In America, with a population thirteen times as great as ours, they had three fowls to every person. In strong comparison with that was Japan, where they had only one fowl to every three persons. That would give them an idea of the great difference in these countries of the measure in which poultry-raising was gone in for, and would demonstrate the fact that America had shown great progress in the poultry industry. As a matter of fact, America stood to-day as unrivalled in the importance attaching to the industry, and in the profitable nature in which it was carried on. Queensland had yet a lot to learn in regard to the industry. They did not want to see people rushing blindly into an industry before seeing where they were going to end. Queensland was an ideal place for poultry-raising, and he hoped that the rising generation, and the present generation, would be seized with the necessity of going on and improving the industry, and in that connection he hoped they would be influenced by the fanciers already in the business. So that he might not display his ignorance too greatly, he intended to act on a suggestion from the Principal, and content himself with reading for them a few facts prepared for the purpose. "That was the second conference held at the College," continued Mr. Lennon, "and your deliberations should be of value to your industry and to the State. I understand that the majority of those present are breeders of poultry, and not in a true sense poultry farmers. I recognise the good work a keen breeder can do, even if he has taken the work up as a hobby, and is only operating in a small way. For, assisted by the various egg-laying competitions, the egg-producing capacity of poultry has shown a steady improvement during the last sixteen years, and it is a remarkably fine performance for Australia that two hens last year—one in Victoria and the other in Queensland—should have laid 335 eggs in 365 days. But perhaps the most important feature indicated by the competitions is that the average yield per hen has steadily improved. At the inception of Australian egg-laying competitions, it was the aim to obtain the 200-egg hen, but since then our aspirations have become greater, and there seems no reason why we should not get the 250-egg hen, or even the 300-egg hen. Careful breeding, then, has produced stock which are efficient and more economical producers. The results of the competitions, however, represent chiefly the success of the breeders. They do not fully reflect the average egg-laying capacity of the flocks of the State. Hence I regret that we have not here represented a greater proportion of poultry farmers—men who are entirely dependent on poultry-raising, and of those farmers who depend on poultry for part of their revenue. Most of you are probably dependent on the selling of settings of eggs and stud birds to cover your expenses and yield a profit. But I would impress on you that the success of the industry depends on the successful marketing of eggs and table poultry. In glancing through the agenda paper, I find several subjects for discussion in connection with the competition, but I do not find these broader issues raised. Yet your success as breeders must depend on the commercial utilisation of your well-bred stock. Eggs, as you are aware, varied in price from about 6d. per dozen to 2s. 5d. per dozen during the past year in the Brisbane market. Again, in the north and out in the western districts eggs have remained consistently high in price. Something should be done to stabilise the price of eggs in the big markets, either through cold storage, egg pulp, or dried eggs, while it would appear possible to develop the possible market for eggs in the north and west." The Minister added that he hoped that eventually accommodation would be made in the cold storage buildings, to be erected in Brisbane, for eggs. Proceeding, he said, "There is another section of the poultry work which remains to be developed—this is the table poultry. This year the College exhibited a very fine collection of cross-bred and pure-bred capons, cockerels, and hens at the Exhibition. It would seem that much could be done to develop the table poultry market for the purpose of absorbing the surplus cockerels of the year's hatch as capons. Whether an overseas trade can be developed later remains to be seen. Since you were here last year, considerable development has taken place at the College poultry farm. To supply poultry for repatriation purposes more equipment was required, and, as a result, you saw to-day

the breeding pens, incubator house, and brooders which have recently been erected. Further, to meet the demands of the competition, another 120 single pens have been completed this year. All these buildings have been placed on a new site, well chosen for aspect and drainage, and at present work is in progress transferring the old yards and houses to the new site. In this work an endeavour has been made to lay out the buildings on a model plan, and in this I trust we have been successful. He felt sure they all appreciated the work done by Mr. Potts in modernising the pens. They would see how he had placed them facing the rising sun—than which they had no better purifier. The pens seemed to him to be as perfect as it was possible to make them, and were in striking comparison to the old ones. On this improvement he thought the present Principal was to be congratulated. He thought also that the Government, and even the Minister, was to be congratulated on this state of affairs, because no matter how skilful, earnest, or expert the Principal might be, unless he had a sympathetic Minister and a sympathetic Government to make the money forthcoming, he could not do very much. He (Mr. Lennon) was only sorry that he could not do more to assist them. He would conclude by expressing the hope that they would not only enjoy themselves, but would benefit by the trip to the College, and that their deliberations would assist in developing and bringing forward much more rapidly the great poultry industry in this State of Queensland. (Loud applause.)

Mr. Potts said that since he had been in Queensland he had endeavoured to do a great deal, but he had never attempted to do anything without having the sympathy of the Minister. He called for cheers for Mr. Lennon, which were heartily given.

Mr. A. Harwood (Poultry Instructor) said he had been asked to speak upon the question of table poultry, but would preface his remarks with a few words on feeding, &c. He said he was often asked the question by competitors "How is it that my birds are not doing so well at the College as they are doing at home?" There were several reasons he could give for that. The first related to pens. The system adopted at the College was practically free range. Birds taken from intensive or semi-intensive pens would have a certain set-back when changed straight away when they came to the College. At first they had had ideal weather, which gave them a good chance to get quickly off, but when the westerlies came, those birds used to intensive penning stood no chance of keeping up with the birds which had had no coddling. The former birds, when encountering the westerlies, seemed to tuck up, and go off their food and break into adult moults. That was one of the worst troubles which they had. The question of feeding was another important item. The feeding method adopted was published in the annual report. On the commencement of the competition he did not give the birds a full percentage of blood. If he was to give them the full complement of blood at the commencement of the competition he would have trouble galore—mostly bowel troubles. He usually gave them a 3 per cent. ration, and gradually increased it. Putting those birds used to grain on to a concentrated food was going to upset them. He started on the small percentage and worked up. The type question was one which was going to cause a good deal of unrest amongst the competitors for two or three reasons. One was the question of utility birds, which he held must be standardised. If this were done, practically every pen of birds in the present competition would be passed through. They were endeavouring to improve the standard of the birds, and by adopting the present standard he did not think that they were doing any injustice. In connection with housing and feeding, if they all made a note of what he said about this, he thought they would have a better start for next year's competition. He went on to refer to the climatic conditions in Queensland for the raising of poultry, and said that he had reared poultry in the mountains of Derbyshire, in the south of England, and in Queensland, but give him Queensland every time. He thought of the long hours he spent here with the birds and the chickens, but in contrast to that he thought of the trouble and the overtime spent in the old country. There was, for instance, the vaselining of the combs—something which they did not have to contend with in this country. He had been in Australia eight years, and he thought he was now capable of forming an opinion of the lot of the breeders here and in England. In the poultry literature published in this country he noticed a lot of quibbling. This was a grave mistake, and was in distinct contrast to the course followed in America, where the poultry journals were full of interesting information. So long as they pulled against each other they would never come to a satisfactory basis. Here it seemed to be, that everyone considered he was above his neighbour, and made pretensions to know more about his business than his neighbour. That was the gravest mistake they ever made. Since he had come to Australia he had seen a tremendous leap forward made by the industry, but he hoped to see still greater strides. To do it they must all work together. If they did that, he was sure they would meet with success and get good results.

Proceeding to deal with the question of table poultry, he said that this branch of the industry was practically unknown here. He could not see any reason why table poultry should not eventually be of great commercial value to this State. Con-

trasting the way table poultry were sold here with that in Great Britain was enough to make one smile. Here the birds were sold so much per head, whilst in England the sale was by weight of the birds. Was the system of buying by what they could see, as followed here, fair to the man who paid great attention to his feeding? The breeder who bred the birds was worth considering. Should he not have more consideration than the person who only fattened? It was about time that they adopted the practice of selling by weight—so much per pound. When they did that, they were going to make a good start with this branch of the business. His home was on the Sussex border, where practically every farm was a fattening establishment. It was not their purpose to feed for muscle in this feeding process. The coops stood on legs about 3 feet from the ground, and in these, six birds were placed. The birds had no exercise whatever. To protect them from the wind, they placed 6-inch saplings about 7 feet out of the ground. Wire-netting was placed on either side of this, and litter of any kind was used as a breakwind. The "higgler" was a man who went round the district and collected the birds from the farmers. The price would vary considerably. Each higgler had his own customers. The cart he used was a flat-topped affair with no sides, with crates standing on top. It was not an uncommon sight to see a higgler's cart going along with one or two hundred birds hanging out through the bars. The birds which were selected were those which had no pin feathers. They were kept in close confinement for over three weeks, during which time they naturally put on considerable weight; but the majority of the weight was put on during the last week. The feeding for the first ten days was trough feeding. No water was supplied to the birds, all the moisture being derived from the feed. No food was left in front of the birds; all they had to do was to browse and put on fat. Another essential was to be sure that the birds had no lice on them. It was no use whatever feeding a bird which had lice on it. Fatteners would reject these birds until they were clean. In the fattening process they had what they called a crammer—a "blow out" machine. To cram properly, it was necessary to get the pipe right down the bird's neck. Without cramming they could not put on weight in the old country. The heat would perhaps be too oppressive to do that here. But the best form of feeding was to put the birds in an isolated place with plenty of feed and water. The question of dealing with the cockerel must engage their attention. In America these birds were turned into a rich commercial article. It seemed a wanton waste to him to follow the system in vogue here, of sewing their necks and feeding them to the other birds. He suggested that they should form a committee for the purpose of threshing out the table poultry question. If they went on with the present system one saw here, and sold the birds anyhow, the market would be a loss to everyone, and would be very discouraging to those engaged in the industry. They had to go on and not stop in the task. Wherever he could render any assistance in that forward movement he would be only too happy to do so. In connection with the marketing of the birds, the practice here seemed to be to scald the birds. Such a system in the old country would not be looked at, where the poultry were dry-plucked. He instanced the fact that at the Exhibition he had been requested on Wednesday to remove birds which had been scalded on the Monday, whilst others which had been dealt with by the process of dry-plucking were sold on the following Saturday. The latter birds were purchased by a person who he knew appreciated good table birds. In America a certain amount of scalding was done. In the old country the birds were brought in by the fattener, dry-plucked, and the women did the stuffing. A person with a little bit of practice would soon become proficient in getting the feathers off quickly. The regular pluckers got to know in which way the feathers came off—there was a way in which the feathers left the birds much easier than another. The feathers were a side line which they made a good deal out of. A price of 2d. per dozen was paid for removing pin feathers in England. In Australia they did not pay attention as to the time when they should kill the birds; so long as they looked nice, that was considered sufficient. In the old country, the feathers on the birds were lifted to see the pin feathers. Having been plucked and the pin feathers removed, the birds were thrown to the person who was doing the singeing. To do this he got some straw, made a long row of the birds to be dealt with, started a fire at one end, and worked automatically. They then went to the shaping man, and eventually were packed up in readiness for sale. The birds, being warm, the flesh would solidify. The packing was done in open crates with straw, but he was afraid that this would not do here in this climate. In England they did not glut the one market; they had markets all over the country, and they worked systematically on those markets, and so got the wider field of buyers. The Sussex people, by making a particular study of table poultry, got the advantage of the market.

Questions were called for, and Mr. Harwood was asked if he would be in favour of setting out the system of feeding for the competition in the rules relating thereto?

The Principal said that he would undertake to answer the question himself. They did not change the system of feeding, which was published each year in the annual report. If they got the report, that would not entail the inclusion of the

feeding system in the rules of the competition. It was possible for them to get a copy of a pamphlet dealing with last year's competition.

In reply to another question, Mr. Harwood stated that the birds were always marketed with their entrails, because they would keep much better in that way.

Asked how long the birds were starved in connection with the table poultry fattening, Mr. Harwood stated that the length of time was twenty-four hours.

Another questioner asked for information regarding feeding, and Mr. Harwood replied that if he was to deal fully with this question he would keep them there for a week. He took it they were there that day to learn how to improve the industry. In connection with the plucking of birds, he stated that as there was an absence of pluckers here, it would probably be necessary to first go in for the scalding process. He added that an efficient dry-plucker would pluck a couple of dozen birds whilst the other person was getting his water hot. (Laughter.)

A delegate: What price per head would be a payable price to sell birds at?

Mr. Harwood: At the present time the selling of birds, as they stand—per head—I am sure does not pay. It was essential that they should sell them by weight. If they came to an understanding on this matter, then the poultrymen would get what they required, and would be able to command a price for their cockerels.

Mr. Potts (to Mr. Harwood): Will you promise to write a pamphlet on feeding during the year for the "Agricultural Journal?"

Mr. Harwood: Certainly.

Mr. Beard read the following report dealing with his tours:—"It is now twelve months since we last met in conference in this hall, and since that time I have travelled over a large portion of the State from the Southern border to as far north as Herberton. In many of the districts I visited I found the poultry-fancying industry very stagnant. This was due to the want of someone to impart the advice that is required. I came across many large plants being worked by people with scarcely any knowledge of poultry. Yet some of these people are on a good payable proposition, notwithstanding the high prices of poultry food. They were getting good returns for their eggs and surplus stock. Many of the large poultry farmers in the North hold twelve months' contracts for eggs at 1s. 6d. per dozen, whilst others are satisfied to accept the ruling prices, which range from 10d., in the flush of the season, to 2s. 6d. per dozen in the off season. Townsville and Cairns are the chief markets for the disposal of eggs and surplus stock. Mareeba I found to be the most suitable climate in the North for poultry, being located in a dry belt of country. Here one of the largest plants in the North is situated, whilst several small plants are installed. No disease of any kind came under my notice. At Cairns there are no large plants, but I met a number of fanciers there who are most enthusiastic. Since my visit, poultry clubs have been formed in Halifax, Ingham, Innisfail, Babinda, Atherton, Malanda, and Yungaburra. I am afraid poultry will not make much headway, owing to the continuous wet seasons experienced at those places, although there are many small farmers. At Townsville and Charters Towers there are some really live fanciers. In these places some very large plants have been installed. I saw in the Towers the most up-to-date poultry plant in the North. In the Ayr and Proserpine districts there are some large plants; also a lot of small farmers. Some of the yards at Proserpine were meeting with diseases in various forms. Coming back to the South, commencing at Killarney, there is only one large plant, but a fair number of small ones are being utilised. Killarney, although a large farming centre, holds the unique position of not being able to supply its own demands for eggs, the local storekeepers having to obtain supplies from Yangan, where there are several large plants installed, in addition to a good number of small ones, which are making a great success of the undertaking. Warwick has become a very large centre within the last twelve months. Over a dozen large plants have been put down, in addition to a large number of smaller ones. The most flourishing poultry society in the State is established in Warwick. At Allora, Clifton, and Nobby I found large poultry plants. Nobby I call the hot-bed of the State for Black Orpingtons. At Hidden Creek and Doctor's Creek, although I might call them outlandish places, there are some keen fanciers, who have very large plants installed. Toowoomba is another large centre of the industry. Within the last couple of years not only have several large plants been installed, but quite a number of new fanciers have come into the industry. Within the next few years we can look forward to the Downs being very large suppliers of eggs and poultry."

Mr. Potts said that the only questions which had been submitted for consideration were a series sent in by Messrs. D. W. L. Anderson, W. R. Parker, A. E. Walters, M. J. Lyons, Thomas Carpatt, and L. G. Innes. These would be dealt with seriatim. He called upon Mr. Anderson to submit the first suggestion.

Mr. Anderson, in moving the following proposal:—"That a standard for poultry be fixed and published for the next College competition, and a copy of same be printed on the entry form," said that he considered the standardisation of poultry was one which should be taken up by the Gatton College in its competition. For a number of years, in his opinion, the birds, and especially the White Leghorns, had been rather deteriorating, so far as standard was concerned. If the birds competed up to a standard laid down, giving a larger number of eggs and a greater amount of flesh, he thought the poultry industry would be greatly benefited. If they continued to breed a laying machine it was almost certain that the weight of the egg would deteriorate. That, he thought, could be shown by the chart they had in connection with the competition. As to the standard set out by the National Utility Club, he was not in favour of every item contained therein. That was agreed upon by the Utility Club's conference of delegates throughout the Commonwealth. These they were trying to have embodied into other competitions. He argued that Orpingtons and Silver-laced Wyandottes had also deteriorated in point of standard. He agreed with Mr. Harwood as to the standard, which he thought would bring birds back, not only to flesh-producers, but also to egg-producers. He considered that the standard, with a few modifications, laid down by Mr. Harwood, would be suitable. To obviate the birds deteriorating, he considered that they should take the matter up.

In supporting the proposal Mr. Innes said that the reason he would like the standard set out in the schedule was that every breeder might have a correct idea as to what birds he should pick. He had been a competitor for two years, but had never known what standard the birds were picked from.

Another delegate expressed the opinion that it would be wise for the College not to adopt this standard, because he considered it would not act to the benefit of the competition.

Mr. Finlayson said he thought they had a standard now which was moderately fair.

Mr. Evans asked if it would not be feasible, as was done in the case of cattle, to have a line of demarcation? They could have a standard for utility poultry, and a distinct standard for meat poultry, as in the cattle classes. He was prepared to say that they could not breed meat and eggs at the same time. They would come to a minimum point of success if they attempted to do that. He certainly thought that with such a man as their poultry expert, they could easily form a standard for utility birds, as against meat birds.

Mr. M. Elms said that he was present in Sydney when the standard which had been referred to had been drawn up. The decision really was the outcome of a conference on the whole of the standard breeds recognised in New South Wales and other parts of the Commonwealth. The object was to endeavour to reach a standard for utility poultry. As for the birds deteriorating, he held that the results of the Hawkesbury competition showed that that was not the case. The expert there (Mr. Adlinton) (?) stated that this had not had a detrimental effect, but that the standard agreed upon had increased the stamina of the birds and the weight of the eggs. It was very noticeable, in going over the records of the Hawkesbury College, that there were very few eggs under the standard weight. In Queensland they had to admit that they could not say the same thing. In respect to the standard of the birds, they did not have the stamina they should. Of what use, then, for market purposes, were they if they were going on with that. Their birds must have the utility qualification. The keen man in the poultry industry had sufficient judgment to pick out those birds which were going to do him justice in a competition, barring accidents. In forming those standards the consensus of opinion was that it would give the poultryman something to work on, as it was desirable to see how it would work in improving the standard, so that eventually they could evolve something which would be of advantage to the whole of the country."

Mr. Wallace raised the question as to what utility was. He said that so long as the shape of the bird was not incompatible with the greatest usefulness, what was to be gained? A person had to find a breeder on whom he could rely, and to be assured that the type was correct. If he had to start afresh and work until he found the breeder on whom reliance could be placed, and who had the type he was looking for, he was going to be put to a great deal of trouble. In England they had their own shapes and types, and all had magnificent profundity. This also applied in America. If they had their types in these countries, would Australian type-breeders have to start afresh? The industry was coming on by leaps and bounds, but it was still young, and the breeders were inexperienced. They must remember that one had to walk before he could run. In introducing new blood to improve his type, he ran a big risk of breaking up his strain, which he had probably spent years to build up.

Mr. Hindes said that he felt very keenly on this question. He did not think that there were any poultrymen there that day who would have the temerity to say that some of the birds shown as Black Orpingtons had any possible chance of being considered Black Orpingtons. (Hear, hear!) The same thing might be said, in moderation, of some of the Leghorns. If they got away from shape, &c., they lost the type. Some years ago he had sounded a note of warning in respect to this matter. He had observed that the trend of the Black Orpingtons indicated that they were going to pieces. There was many a bird now shown as a Black Orpington which was scarcely as big as a Leghorn. He thought that something should be done in the matter of preserving these good old birds. Leghorns were admittedly a laying type; they had been bred for generations for egg-production alone. Then why try to spoil their good useful birds? They could not get the two extremes in the one bird. They must be satisfied with a first-class layer, a table bird, or a generally useful bird. Why not standardise and keep them to their proper place and breed—i.e., general purpose fowls, layers, or table birds, as the case might be? They had got special prizes for typical birds—birds approaching the standard—why not apply the motion before the conference to that particular section for the next competition, and let those special prizes apply only to typical birds or birds approaching the utility standard mentioned there? This very nearly approached the poultry club of England's standard, with the exception of some details. This, he considered, would be a step in the right direction.

Mr. Innes said that the trouble he wanted to get over was this: Mr. Harwood picked the birds for the type prizes; there was a standard in the competition at the College to-day, but it was hard for a breeder to breed to the poultry standard competition of England and here, and in other parts of the Commonwealth. All he wanted to know was, on what standard Mr. Harwood was going to pick next year's birds. He had been a competitor for the past two years; he picked his birds, but he did not know really what he had to pick.

Mr. Harwood said that the competitions were run purely for utility purposes—it was a question of egg-production. The utility clubs throughout Australia had drawn up a standard, but that was very vague. No one standard helped a person if he had to judge every breed. It was rather a peculiar thing that the most typical pen in the whole of the competitions for Leghorns stood second place. If some men could breed birds for eggs and size, then others could do it. They might say that they could not get the number of eggs from typical Black Orpingtons—the thing was to alter the standard. He did not see what was to stop Australia from forming a fresh standard for utility purposes. They did not want to get away from the breed, otherwise they might as well go to mongrelism. If they were going to produce eggs, they had to produce size of eggs; they could not compete with the Asiatics by marketing a small egg. He urged that they should pay attention to the size of the eggs and have a minimum weight.

Mr. Potts said that he was pleased this matter had been brought up. About two years ago they had raised the question that the type of birds was going down, and expressed the opinion that something would have to be done to standardise the birds. They promised certain regulations, and had stipulated a certain weight for the eggs. They called this a 2-oz. egg. He did not intend to alter that. They had offered certain prizes for those birds true to type. Then the question had been raised as to what they meant by that "true to type." The old English standard type of Leghorn and their modern type he did not think were the same; they must vary. Referring to the argument about the line of demarcation in cattle, he said he did not think that the beef Shorthorn cow was ever going to be the same as the milking Shorthorn; but there was no reason why they should not be Shorthorns all the same. Unfortunately they had in their competitions birds entered as Black Orpingtons which showed signs of absolutely improper blood. They allowed to enter the competitions, practically any birds which complied with the utility standard, but for the "true to type" prizes they looked for certain definite conditions to be complied with. He certainly did not want to see Leghorns which were one straight back from head to tail. They could not class these as being on the standard; there must be something conforming to the type. The main idea was to produce profundity. The competition was not for the benefit of the man who was making money by a few poultry, but for those who were breeding for the distribution of birds throughout the State. He did not think that they should let the birds develop down to nothing. Utility poultry were really a high standard of egg-laying machine. They wanted to develop a superior type as an egg-laying type. If they were going to take some of the old standards, they were going to kill those birds developing into a good egg-laying strain. He would ask the conference if it would appoint two or three gentlemen to consult with Mr. Harwood and himself, to draw up the type considered most suitable for them to adopt. They wanted to be on safe ground, and he thought they should insist on "true to type" prizes, and give them to something above the ordinary utility type.

Upon receiving the assurance from Mr. Potts that he proposed to have that committee appointed, Mr. Anderson agreed to allow his proposal to stand in abeyance.

The second motion on the agenda paper was as follows:—"That the standard be the one adopted by the National Utility Poultry Breeders' Association of Australia." In view of the decision arrived at in the former matter this also was allowed to stand over.

In launching the discussion on the following proposition, "That the conditions under which competitors enter their birds for the competition be modified as to number of settings being reduced to ten," Mr. Potts said that this referred to one of the conditions which they had in their rules, which meant that the competitor had to be in a position to supply 100 settings for distribution to the public. He was being asked to reduce that to ten.

Mr. Innes, in proposing the motion, said that now that there was so much individual mating this was a rather hard condition to comply with.

Mr. Fanning said that some time ago he had supported a proposal to this effect, but he did not intend to again ask that the number be cut down. Even though those rules were enforced he was going to be bold enough to say that there were men in that room, who, although they had signed a declaration that they could fulfil the conditions, were not able to comply with them. They would put birds into the competition when they did not have half-a-dozen birds in their yards at home. He did not think that the College was going to benefit very much if they altered this condition.

Mr. Oldham said he did not think it was advisable to cut down the number. If a man had any quantity of fowls, it would not take him very long to get that number of settings. A reduction, he argued, would be against the man who was depending on poultry for a living, in preference to the person who only had a few fowls in his back yard.

Mr. Arnold said that before a person was allowed to enter the competition he had to sign a declaration that he could supply 100 settings. But the question was whether it was worth any man's while to have 100 settings? Would they be required? And were his birds of any consequence? He was coming into the competition to improve his connection, and if his birds had done well, he could rest assured that his name was made. He wanted to be successful in the competition so that he would be qualified to have 100 settings to sell. He was very much in favour that the number should come down.

Mr. Finlayson pointed out that the idea of the competition was to encourage breeders to breed birds.

Mr. Potts said that the rules were insisted on, but, unfortunately, they were not always complied with.

Mr. Finlayson said that if the conditions were for 100 settings now, he thought that ten and twenty were too low. He would favour rather a compromise of, say, fifty. Any man who entered birds should be prepared to let the public have the advantage of the competition. Unless a breeder was prepared to let the public have access to his yard, he had no right to have birds in this competition.

Mr. Irvine asked how it was known that the conditions were complied with? He entered fowls for the competition and was never questioned. He supposed that there were a number of competitors who could not comply with the condition. There was no doubt they had many of the competitors who did try to comply with the conditions, whilst others would not care a fig about them. But how did the College know that they were complied with?

Mr. Caswell pointed out that in regard to the quantity of eggs it was not stipulated in what time they were to be produced. He did not think that a man required a great number of birds to be able to supply 100 settings of eggs. The stipulation had to be signed before a justice of the peace, and that should be sufficient to guarantee its genuineness.

Mr. Dennis: Would you request that these eggs should be 2-oz. eggs?

Mr. Potts: There is no stipulation as to the weight of the eggs.

Mr. Newman said that he took it that these competitions were for the purpose of advancing poultry-keeping generally. It appeared to him that if they insisted that an exhibitor should be able to supply 100 settings they were going to block out the small man who was only feeling his way. In course of time the fanciers would get hold of him, and he would become a big fancier himself. He was in favour of the reduction. He took it that the competitions were for the purpose of increasing the number of poultry-keepers. If they insisted on the 100 settings, the small man did not get the desired fillip. He thought that it would be wise to remove the restriction to some extent; he would not say how much.

Mr. Harwood said that the competitions were run for the good of the industry, not for a few hobbyists. It was the man with a flock, not for the person with a few fowls in his back yard.

Mr. Potts said that this proviso was put in for the reason that they had not got in Queensland the same organisation which allowed them to know the breeders as well as they did in New South Wales. The declaration, which they asked should be signed before a justice of the peace, was only as a small guarantee. But he regretted to know that some of the exhibitors had deliberately flouted the guarantee. They had signed a declaration which they knew they could not comply with. That being so, the only course left open to him was to disqualify such persons for life. He did not intend to carry out that punishment this year, but if that was continued in, and the provision was violated, he would have no other option. One hundred settings only meant about thirty breeding pullets, and at the outside five or six weeks' layings. If they were not big enough to run those, then they were not big enough to run at the College and take advantage of their prizes. They wanted every man to be keen on poultry, but they did not want them to come there as a sporting competitor to win their prizes. There must be some qualification behind them. He did not think for one moment that they anticipated that he would reduce the number in any way. Rather he would have to make it a great deal more severe if it was not complied with.

Mr. Anderson submitted the fourth proposal. It was, "That the selling of poultry for market be by weight." He pointed out that there were some College birds at the recent Exhibition, and if these birds had been sold by weight it would have given the movement a start off. For some time past he had visited the markets, and he could say that during the last two years the quality of the birds had been on the up-grade. Some two years ago White Leghorns were very weedy as regards weight, but they were coming on now. He had seen them sold for 4s. 6d. per pair, whilst this had now advanced to 7s. 6d. That proved to the poultry-breeder that it was better to breed the improved class of birds. There were times, of course, when the demand for poultry went off. A lot of breeders were under the impression, apparently, that immediately before Easter and Christmas was the ideal time to dispose of their birds, but he had seen these persons send their poultry in to the markets at that time and had fallen in. He thought that they should endeavour to get the Government to realise the advantage of selling by weight. The State Produce Agency could assist them in establishing this system. He thought that the State would find this a very profitable undertaking.

Mr. Irvine said that he thought they were all agreed that the time had arrived when they should dispose of their poultry by weight. The Minister had stated that a measure was likely to be brought before the House, and he thought they should sound the spirit of the meeting, and thus do something to help this movement along. He thought they should endeavour to induce the Minister to have something put in that measure that would compel them to sell their poultry by weight alone. If that were done the breeder who bred the small birds would be the loser, and the public would know just what they were getting.

Mr. Newman said that the difficulty was to tell what the weight was. Sometimes the best-looking birds did not weigh as much as the inferior-looking ones. The great difficulty was as to how they were going to come to the conclusion as to the weight of the birds. They could not weigh the crates and their contents *holus bolus*. In some cases, the birds might be one weight when they left the yard, and another one when they were sold. (Laughter.) The whole question, so far as he could see, was how they were going to arrive at the weight. It would be a question for a committee to endeavour to arrive at an easy method of coming somewhere near the weight; otherwise the poultry industry was going to suffer in the future.

Mr. Pacey expressed the opinion that the people of Australia were not yet educated to poultry-eating. He thought this was a question which they could not go on with that day. Till Australians were educated up to eating poultry this was a matter best left alone.

Mr. Oldham said that some of the fowls sold on the market at 4s., 5s., and 6s. did not weigh a quarter of a pound when they were taken home. They wanted to give the public a share of what they were making, and they could do that by selling poultry by weight. In America poultry was sold by weight, and they found this a very profitable method.

Mr. Carey said that he had been selling poultry for the last twenty years, and his advice to breeders was to get the best birds. If they did that they would get the best prices. His opinion was that birds should be sold by weight.

Mr. Potts said that it was apparent that the conference was not unanimous on this proposal. His opinion was that the system was quite essential if they were going

to give their attention to table poultry. It was possible for them to breed birds running to a high weight, but that those birds should be sold at the same rate as feathered birds was not right.

Mr. Caswell expressed the opinion that the breeders were strong enough themselves without wanting to be nursed by the Government. If they were not unanimous on this question, the one lot would go one way and the other the opposite. But they sold chaff and other varieties of produce by weight, then why not poultry?

Without having come to a decision, the conference proceeded to deal with the fifth item on the agenda paper. This was—"That poultry inspectors for diseases among poultry be educated for that purpose."

Mr. Anderson initiated the discussion. He said that his reason for mentioning this matter was this: There were many persons at the present time advocating that experts in diseases of poultry should be appointed, considering themselves experts of all diseases which poultry suffered from. He understood that Mr. Lennon was bringing forward a Bill, and he thought that it should be a recommendation to him that this matter should be included therein and brought under the Stock Acts. Further, he advocated that poultry experts appointed relative to diseases in poultry should pass an examination, to comply with the Stock Diseases Act. He also thought that it would be a wise scheme for the soldiers passing through the College to follow up this branch of the industry minutely, with the object of sitting for the examination thereon. The Minister had said that nothing could be done this session on this matter, but that it was proposed to bring it forward next parliamentary session. He (the speaker) thought that it would be a good thing to make a start in the matter now. In following out the suggestion, he thought they would get competent men appointed. As a recommendation, he suggested that the Minister should be asked to bring this under the Stock Act, and that every poultry diseases expert should pass an examination of some sort for that purpose. (Hear, hear!)

Mr. Potts said that Mr. Anderson had brought forward a matter which was of considerable importance. The only method by which they knew that the persons appointed to carry out the work of inspection were competent was by the conducting of an examination. He thought they could quite safely recommend this matter for consideration, but it would probably come better from the various clubs and not from the conference. However, he could assure them that it would be somewhat difficult to comply with the request. A great many of their poultrymen were men who had grown up in a practical school, and knew the local requirements. They would have to fall back on those sound practical men, and gradually it would be possible for a proper examination of inspectors. However, he did not think that they should put this matter through the conference that day.

In connection with the sixth matter on the paper—"That an inspection committee be appointed for the competition"—Mr. Potts said that he thought he could not let them discuss that matter at the conference, but he was going to take it as a recommendation, because he was in favour of having an advisory committee to assist them in running the competition. He had on one occasion brought the matter before the Minister and the Under Secretary, and they were half-heartedly in favour of it. It was thought that it would not be right for the running of the competitions to be taken out of their hands, but an advisory committee could do an enormous amount of work, by not having executive powers. He proposed to have such a committee appointed.

Mr. Innes brought forward a suggestion for the numbering of leg-bands on competition birds, suggesting that they should be numbered consecutively from, say, 1 to 6, and so on. This would assist the College officials, he thought, in taking the birds from the coops.

Mr. Potts said that this was only a small detail, but it was a very useful suggestion. Competitors were often very careless of the manner in which they sent along their pens, and they only wanted to be at the College when the pens were arriving to realise how much trouble that carelessness led to. He thought they might all follow out the suggestion. If they were to use consecutive numbers it would be decidedly better for them.

In connection with a suggestion regarding reserved carriages being made available for the use of the delegates, Mr. Potts said that now that the success of the conferences had been assured, they would be able to look after these details. He did not see why they should not have a special train.

A delegate asked if it would be possible to issue weekly reports in connection with the competition, and, in reply, Mr. Potts said that they did not have the staff at the College necessary to do this. Not many of them seemed to realise the amount of work which the preparation of these reports involved. They did not quite get the support from the Press in Queensland which they did in the South.

This concluded the discussions, and the conference closed with a hearty vote of thanks to Mr. Potts.

Viticulture.

PRACTICAL HINTS ON ESTABLISHING A VINEYARD.—No. 5.

By P. MAHONEY.

MANURING.

Although the soil may be rich enough to grow and produce satisfactory crops, the money spent in manuring the vine in rich soil is returned twofold, providing it is given judiciously—that is, supplying those constituents in which the soil is deficient. To do this a person should know the constitution of his soil. Most soils, rich as they may appear to be, are very often deficient in some kind of plant-food, and if that deficiency be not made up artificially the plant cannot produce to its limit. Even though the soil may be rich enough to grow and produce heavy crops, it should be maintained in that condition by light dressings of artificial manures. If manuring is practised from the commencement, the soil never becomes weakened in plant-food, but retains, and perhaps improves, the supply, which should be the aim of the successful man.

In the event of no manures being used for a number of years, the dressings will have to be heavy to keep up the supply of food, for during those years large quantities of food have been utilised by the vines, and there may be doubts about its ever again reaching its original and required fertility. For, if the vine has borne heavy crops, the utilisation of the plant-food would have been great.

If light manuring is practised from the commencement of the time of planting the vine, it would not prove as expensive as heavy manurings later on, and the crops would be more regular in time of fruiting and in quality.

The point in making a success of grapegrowing, as in anything else, is not to wait until the soil has become deficient in plant-food before supplying it, but to have a good supply ever ready for the plants. If such conditions are complied with, only half the quantity of land or perhaps less need be used to equal the results from unmanured land, thus saving enough working expenses to pay for manure.

The foods required for the upkeep of the vine and production of crops are phosphoric acid, potash, and nitrogen, all of which can be supplied artificially, although supplies of potash cannot be obtained now, owing to war conditions. These dressings—viz., 2 cwt. of superphosphate, 1 cwt. of sulphate of potash, and $\frac{1}{2}$ cwt. of nitrate of soda—when sown in the bottom of a furrow at the spring ploughing, have been proved to give the best results. Green manuring, such as the ploughing-in of field peas or tick bean, which are the best nitrogen-producers, are also highly beneficial in keeping heavy soils open and friable, as well as in producing nitrogen.

It is not always advisable to practise green manuring. For instance: If the spring rains are not too reliable, and the moisture being taken out of the ground by the peas or beans, these factors will have a tendency to retard the starting of the vine in spring time, and thus to prolong the time of ripening of the fruit, whereas it is important to have the fruit off before the wet season sets in, in which case the damage would be considerable if the fruit happened to be ripening up; and for table grapes, the earlier they are the higher price they realise. Therefore, my contention is, that nitrogen supplied artificially is much preferable to green manuring under such circumstances.

Where irrigation is installed, green manuring can be resorted to with advantage. The best method of ploughing-in green manure is to chop it up with the disc cultivator, by which means it is possible to cover every particle of the manure satisfactorily, and afford a thorough cultivation. Lime is beneficial in any soils, more especially in heavy soils, for it keeps it open and friable, thus making it easy to work, and consequently increasing its power of retaining the moisture for a longer period. It also makes food in the soil available for the plant, through its action upon the soil.

Light dressings at short intervals are better than heavy ones at long intervals.

[TO BE CONTINUED.]

The Markets.

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

Article.							SEPTEMBER.
							Prices.
Bacon	...	...	...	...	...	lb.	9d. to 10d.
Barley	...	...	...	...	...	bush.	4s. 7d.
Bran	...	...	...	...	...	ton	£7 5s. to £7 10s.
Broom Millet	...	...	...	...	...	"	£40 to £80
Broom Millet (Sydney)	...	...	...	...	...	"	£90
Butter (First Grade)	...	...	...	...	...	cwt.	168s.
Chaff, Mixed	...	...	...	...	...	ton	£6 3s. to £7 15s.
Chaff, Oaten (Imported)	...	...	...	...	...	"	£4 15s. to £8 13s.
Chaff, Lucerne	...	...	...	...	...	"	£9 to £12 7s.
Chaff, Wheaten	...	...	...	...	...	lb.	£4 10s. to £7 10s.
Cheese	...	...	...	...	...	lb.	11½d.
Flour	...	...	...	...	...	ton	£12
Hams	...	...	...	...	...	lb.	1s. 3d. to 1s. 10d.
Hay, Lucerne	...	...	...	...	...	ton	£3 10s. to £7 10s.
Hay, Oaten	...	...	...	...	...	"	...
Hay, Wheaten	...	...	...	...	...	"	...
Honey	...	...	...	...	...	lb.	3½d. to 4½d.
Maize	...	...	...	...	...	bush.	5s. 8d. to 5s. 9d.
Oats	...	...	...	...	...	"	3s. 3d. to 4s.
Onions	...	...	...	...	...	ton	£26 to £28
Peanuts	...	...	...	...	...	lb.	5d. to 8d.
Pollard	...	...	...	...	...	ton	£5
Potatoes	...	...	...	...	...	"	£9 5s. to £10
Potatoes (Sweet)	...	...	...	...	...	cwt.	3s. 3s. to 3s. 6d.
Pumpkins (Table)	...	...	...	...	...	ton	£4 10s. to £6
Pumpkins (Cattle)	...	...	...	...	...	"	£8 to £11
Eggs	...	...	...	...	...	doz.	8d. to 10½d.
Fowls	...	...	...	...	...	per pair	5s. 11d. to 10s.
Ducks, English	...	...	...	...	...	"	3s. 3d. to 7s. 6d.
Ducks, Muscovy	...	...	...	...	...	"	4s. 5d. to 7s.
Geese	...	...	...	...	...	"	12s.
Turkeys (Hens)	...	...	...	...	...	"	10s.
Turkeys (Gobblers)	...	...	...	...	...	"	17s. 6d. to 33s.
Wheat (Milling—Imp.)	...	...	...	...	...	bush.	4s. 3d. to 5s.

VEGETABLES—TURBOT STREET MARKETS.

Beans, per sugar-bag	...	...	...	...	...	9s. to 14s.
Beetroot, per dozen bunches	...	...	...	...	...	1s. to 2s.
Cabbages, per dozen	...	...	...	...	...	6s. to 10s.
Carrots, per dozen bunches	...	...	...	...	...	1s. to 2s.
Cauliflowers, per dozen	...	...	...	...	...	8s. to 17s.
Chokos, per quarter-case	...	...	...	...	...	...
Cucumbers, per double case	...	...	...	...	...	18s.
Lettuce, per dozen	...	...	...	...	...	9d. to 1s.
Marrows, per dozen	...	...	...	...	...	2s. to 7s. 6d.
Parsnips, per dozen bunches	...	...	...	...	...	1s. to 2s.
Peas, per sugar-bag	...	...	...	...	...	7s. to 14s.
Sweet Potatoes, per cwt.	...	...	...	...	...	3s. to 5s. 4d.
Table Pumpkins, per sack	...	...	...	...	...	4s. to 5s.
Tomatoes, per quarter-case	...	...	...	...	...	7s. to 14s.

SOUTHERN FRUIT MARKETS.

Article.	SEPTEMBER.	
	Prices.	
Bananas (Queensland), per case ...	...	10s. to 16s.
Bananas (Tweed River), per case ...	...	14s. to 28s.
Bananas (Fiji), per case ...	...	22s. to 23s.
Bananas (G.M.), per bunch ...	...	10s. to 14s.
Bananas (G.M.), per case ...	...	22s. to 23s.
Lemons (local), per bushel-case ...	...	4s. to 7s.
Mandarins, per bushel-case ...	...	7s. to 11s.
Oranges (Navel), per case ...	...	6s. to 12s.
Oranges (Other), per case ...	...	8s. to 9s. 6d.
Oranges (Queensland), per case ...	...	8s. to 10s.
Papaw Apples, (Queensland), per double-case ...	...	12s.
Passion Fruit, per half-case ...	...	10s. to 20s.
Pears, per bushel case ...	...	...
Pineapples (Queens), per double-case ...	...	8s. to 11s.
Pineapples (Ripleys), per double-case ...	...	6s. to 8s.
Pineapples (Common), per double-case ...	...	...
Tomatoes (Queensland), per half-case ...	...	2s. to 6s.

PRICES OF FRUIT—TURBOT STREET MARKETS.

Article.	SEPTEMBER.	
	Prices.	
Apples, Eating, per case ...	...	8s. 6d. to 15s.
Apples, Cooking, per case ...	...	11s. to 12s.
Bananas (Cavendish), per dozen ...	...	2½d. to 6½d.
Bananas (Sugar), per dozen ...	...	2d. to 3½d.
Cape Gooseberries, per half bushel-case ...	...	12s. to 14s.
Citrons, per hundredweight ...	...	16s.
Cocoanuts, per sack ...	...	15s. to 25s.
Cumquats, per quarter-case ...	...	...
Custard Apples, per quarter-case ...	...	2s. 6d. to 5s.
Lemons (Lisbon), per case ...	...	4s. to 10s.
Mandarins, per case ...	...	3s. 6d. to 16s.
Oranges (Navel), per case ...	...	5s. to 13s.
Oranges (Seville), per hundredweight ...	...	14s.
Oranges (Other), per case ...	...	4s. to 8s.
Papaw Apples, per quarter-case ...	...	1s. to 3s. 6d.
Passion Fruit, per half bushel-case ...	...	7s. to 13s. 3d.
Peanuts, per lb. ...	...	5d. to 9d.
Pineapples (Ripley), per dozen ...	...	6d. to 2s. 6d.
Pineapples (Rough), per dozen ...	...	6d. to 2s. 3d.
Pineapples (Smooth), per dozen ...	...	1s. to 3s.
Rosellas, per sugar bag ...	...	...
Strawberries, per dozen boxes ...	...	8s. to 15s.
Tomatoes, per quarter-case ...	...	9s. to 11s.

TOP PRICES, ENOGGERA YARDS, AUGUST, 1918.

Animal.	AUGUST.
	Prices.
Bullocks	£26 to £29 2s. 6d.
Cows	£13 10s. to £18 17s. 6d.
Merino Wethers	46s.
Crossbred Wethers	41s. 6d.
Merino Ewes	34s. 3d.
Crossbred Ewes	...
Lambs	34s. 3d.
Pigs (Bacon)	91s.
Pigs (Porkers)	56s. 6d.

EXHIBITION SALES.

Animal.	AUGUST.
	Prices.
Bullocks	£31 15s.
Bullocks (Champion)	£37 15s.
Bullocks (Guessing)	£31 10s.
Cows	£24 10s.
Cows (Champion)	£23 15s.
Merino Wethers	48s.
Crossbred Wethers	74s.
Crossbred Lambs	55s.

THE DEEPEST BORE IN AUSTRALIA.

Mr. J. H. Hart, owner of Springleigh Station, in the Blackall district, has (says the "Pastoral Review") struck a flow of 250,000 gallons of water in a bore sunk to 6,000 feet, which is claimed to be the deepest bore in Australia. It took four years to put down. The bore struck a flow of 80,000 gallons at 4,000 feet, but boring was continued, and the water is now flowing 1 foot over casing, and increasing. The cost as the bore got deeper was very great, being up to £4 7s. 6d. per foot latterly for boring, and 12s. 6d. for casing. The temperature of the water is 198 degrees.

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

Divisions and Stations.	AVERAGE RAINFALL.		TOTAL RAINFALL.		Divisions and Stations.	AVERAGE RAINFALL.		TOTAL RAINFALL.	
	Aug.	No. of Years' Records.	Aug., 1918.	Aug., 1917.		Aug.	No. of Years' Records.	Aug., 1918.	Aug., 1917.
<i>North Coast.</i>					<i>South Coast—continued:</i>				
Atherton	In.	In.	In.	In.	Nambour	In.	In.	In.	In.
Cairns	0·91	17	1·51	1·70	Nanango	2·03	22	4·27	2·28
Cardwell	1·88	36	2·34	3·12	Rockhampton ...	1·47	36	1·78	0·79
Cooktown	1·29	46	2·05	1·28	Woodford	1·04	31	0·45	3·41
Herberton	1·43	42	1·99	0·79		2·00	31	1·68	1·34
Ingham	0·67	31	1·17	1·44					
Innisfail	1·40	26	3·22	1·73					
Mossman	5·52	37	7·23	16·82					
Townsville	1·42	10	...	1·26					
	0·45	47	1·27	2·07					
<i>Central Coast.</i>					<i>Darling Downs.</i>				
Ayr	0·48	31	1·22	3·05	Dalby	1·27	48	1·75	1·05
Bowen	0·69	47	1·15	3·05	Emu Vale	1·25	...	1·85	0·68
Charters Towers ...	0·52	36	0·83	4·03	Jimbour	1·33	...	2·16	0·71
Mackay	1·06	47	0·89	4·58	Miles	1·29	33	1·02	0·78
Proserpine	1·12	15	2·27	4·50	Stanthorpe	1·93	45	2·53	0·83
St. Lawrence	0·91	47	0·53	1·78	Toowoomba	1·84	46	1·90	1·89
					Warwick	1·55	31	2·32	0·99
<i>South Coast.</i>					<i>Maranoa.</i>				
Biggenden	1·27	...	0·82	4·51	Roma	0·98	44	1·31	0·89
Bundaberg	1·45	35	1·22	1·14					
Brisbane	2·23	67	1·24	1·03					
Childers	1·30	23	1·35	1·28					
Crohamhurst	2·43	25	3·81	3·61					
Esk	1·67	31	2·27	0·78					
Gayndah	1·27	47	1·90	0·85					
Gympie	1·93	48	2·15	1·75					
Glasshouse M'tains	1·81	10	2·06	2·04					
Kilkivan	1·63	39	0·98	0·65					
Maryborough	1·82	47	1·29	2·35					
<i>State Farms, &c.</i>									
Bungeworgorai ...	0·93	4	...	1·65					
Gatton College ...	1·33	...	1·53	0·82					
Gindie	0·82	...	0·15	3·27					
Hermitage	1·52	...	1·95	0·82					
Kairi	1·11	4	1·53	1·67					
Kamerunga	1·56	...	...	2·51					
Sugar Experiment Station, Mackay	0·95	...	...	3·17					
Warren	1·13	4	0·90	3·06					

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

GEORGE G. BOND, Divisional Officer.

A Brazilian correspondent writes to an oversea paper as follows:—"I have witnessed some remarkable cures of bites from poisonous snakes while on a trip in the district of the Rio Taquary. One of these was an Indian peon, who was bitten in the foot by a 'Yaraoca' snake. He arrived at the estancia, apparently in the final stages, bleeding from the gums and all swollen up. A drink of banana juice taken from the tree trunk was given him, and in three days he was quite sound. Another case was that of a child who was treated in the same way and recovered. I also saw the case of a bullock which was snake-bitten and seemed to be dying, unable to get up. We made an experiment by forcing it to swallow the juice. The swelling subsided, and next day the bullock was almost sound and able to graze."

[The above remedy was recommended by a Dr. Speisséger in Carolina as far back as 1749. It was discovered by a negro slave, and was said to be infallible. As a reward for his discovery, he was given his freedom and a pension for life. The directions were to crush the roots of the banana (or of horehound), squeeze out the juice, and give, as soon as possible, one large spoonful. An hour later, give another spoonful, which never fails.—Ed. "Q.A.J."]

Orchard Notes for November.

THE SOUTHERN COAST DISTRICTS.

November is somewhat of an off month for fruit, as the crop of strawberries is about over; pineapples, with the exception of a few off season fruit, are not ready for marketing; and citrus fruits of all sorts, with the exception of those grown in the latest districts, are now over. Bananas should, however, be improving, particularly if the season is favourable.

The most important work of the month is the cultivation of the orchard, as, in order to retain moisture in the soil, it is essential that the soil be kept in a fine state of tilth. Where the land is liable to wash, breaks should be left between the fine-worked land, or, even better, a good break of cowpea or other leguminous crop, valuable for producing nitrogen and humus, should be grown. All fruit pests should be attended to; cyaniding can be carried out where necessary, and is especially useful now in the case of the Red, Purple, Mussel, Circular Black, and Glover Scales. Fruit fly should be systematically fought; all infested plums, peaches, guavas, or other fruits should be gathered and destroyed, so as to prevent the spread of the pest. Sucking bugs of all sorts should be gathered and destroyed, the egg-clusters, as well as the immature and mature insects, being destroyed. Hand-gathering is as good a plan as any. Fig beetles should be destroyed by spraying with Kedzie's mixture; and the egg-clusters should be destroyed whenever found.

Bananas and pineapples can be planted during the month, taking care, in the case of the pineapples, not to set out suckers that will immediately throw out a fruit, but those that will become firmly established before they fruit. Examine the vineyard carefully, and keep it well worked. Look out for Oidium and Black Spot, and treat for same as recommended in the Orchard Notes of the two previous months.

Early ripening grapes will be reaching maturity towards the end of the month; but few, if any, will be ripe. In any case do not market too immature fruit; rather wait a few days longer, till it is fit to eat.

THE TROPICAL COAST DISTRICTS.

The main crop of pineapples will ripen during the month; and if gathered at the right time—viz., when fully developed, but not turned colour—they will carry all right South, if carefully handled and well packed. Papaws and granadillas are still in season, and will meet with a good Southern demand; they must be packed in cases containing only a single layer of fruit, and should be sent in the cool chamber. I am certain that a good market can be got for these fruits in both Melbourne and Sydney, particularly at this time of the year, when their winter fruits are off and their summer fruits are not yet on.

Watch bananas carefully for fly. Keep the orchards well cultivated.

Only ship good mangoes South; for too much rubbish is sent to Brisbane. Good mangoes will pay to pack properly, but the common sorts, which predominate to an enormous extent, will barely pay freight, if there is a good crop. The canning of good types of fibreless mangoes of good flavour is well worth taking up commercially in the North, as a ready sale for the canned fruits can be obtained.

As in the Southern Coast districts, all fruit pests should be systematically fought, and the orchard should be kept in a good state of tilth, as, once the wet season starts, there is little chance of cleaning up weeds and rubbish of all kinds, or of cultivating and sweetening the soil.

THE SOUTHERN AND CENTRAL TABLELANDS.

The earlier kinds of summer fruits, such as cherries, will ripen during the month. See that, if fruit fly makes its appearance, it is systematically fought.

Look out for Codling Moth, and continue the spraying with Kedzie's mixture.

Look out carefully for any San José scale that may have escaped the winter spraying, as, if the trees are sprayed whilst the young are hatching out, the bulk of the insects are killed and little damage is done either to tree or fruit.

The sulphide of soda spray is one of the best to use now. Keep Woolly Aphis in check, should it make its appearance, using the resin washes; or, if it and San José scale are both present, use the sulphide of soda spray.

Watch the vineyards carefully for Black Spot and Oidium. Keep the orchard and vineyard well cultivated, so as to retain all the moisture in the soil required for the growth of the tree and development of the fruit. In the warmer parts, irrigate when necessary, following the irrigation by deep and systematic cultivation.

See that grape vines have plenty of foliage to protect the ripening fruit from sun scald, but yet not so dense a foliage as to induce Oidium or Black Spot. Look out for Red Scale on citrus trees, and cyanide to check same. Look out for fruit fly in the early ripening fruits, and gather and destroy all that may be so affected.

Farm and Garden Notes for November.

FIELD.—Under ordinarily favourable conditions, harvesting the wheat and barley crops may now begin. Those who have oats for hay should cut it when the grain has formed, but before it is ripe, for then the plant is in its most nourishing condition. Destroy caterpillars on tobacco plants, and top the latter so as to throw all the strength into the leaves. Keep down the weeds, which will now try to make headway; earth up any growing crops requiring the operation; sow maize, imphee, setaria, kafir corn, teosinte, sorghum, cotton, &c. Plant sweet potatoes, sisal hemp, yams, peanuts, and ginger.

KITCHEN GARDEN.—Why do so few gardeners and farmers grow their own vegetables? This is a question frequently asked by visitors to the farming districts. The reason probably is, that vegetables require a good deal of care and attention, which means also a good deal of time taken from the ordinary farm work. In many cases it pays the farmer better to buy many kinds of vegetables than to grow them himself. The only vegetables grown on many fine farms are cabbages and pumpkins, not to class potatoes under the head. Many people have an idea that European vegetables cannot be grown during the hot summer months, but this is a great fallacy; the Chinese gardeners supply the towns with all kinds of vegetables, except, perhaps, cauliflowers, during the whole of the summer. It is, therefore, clear that, by constant work, plenty of manure, water, and some shade for seedlings, most vegetables can be produced during the hot months from November to March. If your ground has been trenched or deeply dug and well worked, the advantages will be seen during the coming months. It does not pay to work shallow-dug ground. When sowing and planting during this month, give plenty of room between the rows and the plants; otherwise they will be drawn up and worthless, and keep the ground open by constant forking and hoeing. Thin out melon and cucumber plants. It is a good plan to peg down the vines; they will then not be blown about by the wind; they will take root at intervals, and thus help the main stalk. Give plenty of water to tomatoes planted out last month. They should also be mulched. Sow cabbage, French beans, melons, lettuce, radishes, pumpkins, cucumbers, marrows, rosellas, &c., and transplant for succession in calm, cloudy weather.

FLOWER GARDEN.—Stake any dahlias which may be now above ground, and plant out the bulbs which were stored in a moist place. If the weaker bulbs are reserved, they will come in for autumn planting. Take up all bulbs which have done flowering, and store them in a dry place. Winter-flowering plants will have gone off almost; still, the garden should be in full bloom, and will well repay the trouble bestowed on it, and a little fertiliser given as a top-dressing will assist the plants to bloom and look well for a longer time than if they were neglected. Give weak liquid manure to chrysanthemums, and allow no suckers to grow till the plants have done flowering. Take up narcissi. Do not store them, but plant them at once in new situations. Sow antirrhinum, balsam, zinnia, summer chrysanthemum, calliopsis, and nemophila.