THE TABLE POULTRY INDUSTRY IN NEW SOUTH WALES.

by

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The present survey owes its origin to an investigation of poultry killing establishments in the Sydney metropolitan area carried out by officers of the Divisions of Animal Industry and Marketing and Agricultural Economics in 1951, with the object of studying conditions under which poultry stock are slaughtered and the scale of these operations. Subsequently these inquiries were extended to cover the remainder of the State. The intention has been to make available an overall appraisal of an industry which has hitherto received little publicity[1].

The manifold circumstances under which domestic poultry are raised and can be slaughtered make it virtually impossible to present a complete account of the table poultry industry. Apart from commercial poultry farming, birds can be run in suburban "backyards," or as a sideline to other major farming enterprises such as wheat-growing, dairying and the growing of citrus fruits. Furthermore, the equipment for slaughtering the birds need not be elaborate, with the result that a small backyard

[1] The author is indebted to officers of the Division of Animal Industry for their assistance and co-operation in carrying out the field investigations of this survey. It is also desired to express appreciation for the manner in which the many firms associated with the killing and marketing of table poultry offered their co-operation.

shed can be used to kill and dress a few birds each week. In some cases up to fifty or more birds may be killed weekly in such small sheds. The total number of birds slaughtered in this manner and sold to neighbours, passing motor traffic and cafes, must assume significant proportions.

1. COMPOSITION OF THE POULTRY INDUSTRY.

The physical requirements for raising poultry are not unduly exacting. The most suitable land for establishing a poultry farm is that composed of sandy soil, but sandstone and granite soils, often found in relatively poor agricultural districts, are also well suited to the running of poultry stock. Moreover, birds can thrive under a variety of climatic conditions, provided the farm is well drained, has a good water supply and some protection from westerly winds. As a result poultry are in evidence in most areas in New South Wales. Certain areas, however, notably the central coast and the region of the slopes, show marked concentrations of fowls and turkeys respectively.

(i) Distribution of Fowls.

It will be seen from Table I that the domestic fowl population is found mainly in the coastal regions of the State with the heaviest concentration in the County of Cumberland where over 40 per cent. of the total numbers are located. The Hunter-Manning district is also an area of heavy fowl population, but the number of stock in this region represents only one-third of that in the County of Cumberland. The poultry farming districts of these two areas maintain over one-half of the total number of fowls and chickens in the State. They owe their predominance to the large urban markets for poultry products, especially eggs, which exist in the cities of Sydney and Newcastle.

Outside the farming areas surrounding the cities of Sydney and Newcastle the districts in the Slopes division, particularly the North-western and South-western Slopes, are the most important. In both of these regions the number of fowls and chickens exceeds 500,000.

Although the actual ratio of hens to cockerels will vary from time to time according to the economic conditions and prospects of the two enterprises, viz., egg production and table poultry, it is reasonable to expect the distribution of cockerels to follow much the same pattern as the distribution of hens. This relationship exists insofar as the coastal districts are concerned, for example, the County of Cumberland is the outstanding egg producing area and also the leading district for cockerel raising. On the other hand the North-western Slope, an important contributor to the State's egg supplies, raises comparatively few cockerels.

(ii) Breeds of Fowls.

Generally speaking local poultry farmers have been more concerned with the production of eggs than with the rearing of table birds and this fact has influenced their choice of breeds when establishing a poultry run. Thus it was on the basis of a fowl's quality as demonstrated in egg-laying competitions that the various breeds of poultry stock won popularity with commercial poultry farmers.

TABLE I.

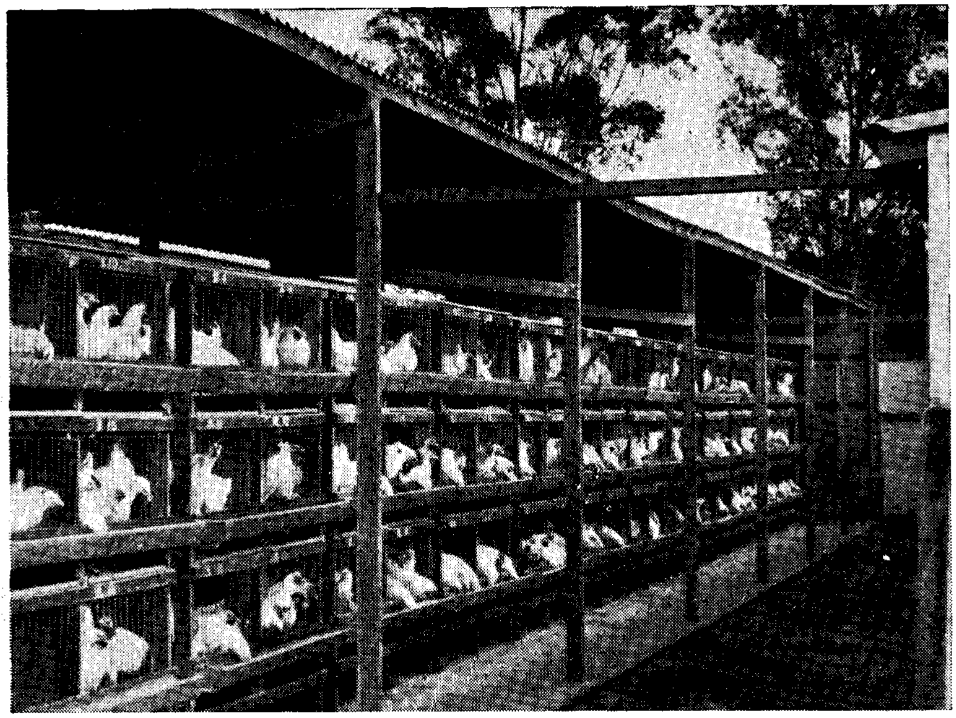
Population of Fowls, New South Wales, 1951.

Statistical Division.	On Holdings with 150 or more Fowls.				All other Fowls and Chickens.	Total.
	Chickens under 3 months.	Cocks and Cockerels.	Hens, 1949, and earlier.	Pullets and Hens hatched, 1950.		
	'000	'000	'000	'000	'000	'000
Coastal—						
North Coast ...	13	3	23	37	220	296
Hunter and Manning	64	28	297	478	236	1,103
Cumberland ...	292	130	1,005	1,497	305	3,229
South Coast ...	42	11	118	139	119	429
Total	411	172	1,442	2,151	880	5,057
Tablelands—						
Northern	4	1	14	25	72	116
Central	19	12	84	113	134	362
Southern	1	1	14	13	43	72
Total	24	14	112	151	249	550
Slopes—						
North-Western ...	30	6	179	238	85	538
Central-Western ...	7	6	24	38	91	166
South-Western ...	58	8	80	144	217	507
Total	95	20	283	420	393	1,211
Plains and Riverina—						
North-Central Plain	2	1	4	5	35	47
Central Plain ...	...	...	...	...	25	25
Riverina	20	5	31	58	131	245
Total	22	6	35	63	191	317
Western—						
East of Darling ...	...	...	1	3	9	13
West of Darling ...	...	...	9	13	7	29
Total	...	...	10	16	16	42
TOTAL	522	212	1,883	2,801	1,729	7,177

Source: New South Wales Bureau of Statistics and Economics.

In 1940 it was estimated by the Department of Agriculture that White Leghorn fowls comprised about 66 per cent. of all commercial flocks in New South Wales while Australorps represented a further 18 per cent. Langshans constituted 5 per cent., Rhode Island Reds 4 per cent., and Crossbred fowls 6 per cent. Miscellaneous breeds, which included the Light Sussex, Ancona, Brown and Black Leghorns comprised only 1 per cent. of commercial flocks[2].

[2] V. H. Brann, *Poultry Notes*, N.S.W. Department of Agriculture, September, 1941.



Cockerels in a Battery Rearing Plant.

With the increasing importance of the table poultry enterprise in the years following 1940, accompanied by a more general recognition of the merit of using fowls resulting from the crossing of two pure breeds, it was to be expected that some change in those proportions would soon become evident. In 1951 a similar estimation listed the proportion of each breed as follows:— White Leghorn, 40 per cent.; Australorp, 12 per cent.; Rhode Island Red, 9 per cent.; Lanshan, 3 per cent.; Cross-breds, consisting mainly of White Leghorn crossed with Australorp, Rhode Island Red, New Hampshire and Langshan (in that order of popularity) had now risen to 35 per cent.; Miscellaneous breeds were still 1 per cent.[3].

Important though these breeds are, the average poultry farmer is not so much concerned with purity of breed as with viability, its ability to produce eggs or meat and also to resist disease.

(iii) Distribution of Turkeys.

The concentrations of turkey numbers are found in the inland areas of New South Wales. Flocks of these birds are still given free range over large-area wheat farms and sheep properties. In many districts advantage is also taken of the fact that the turkey being a grain-eating bird, will thrive on the seed of the saffron thistle, a weed which farmers try to eradicate or at least control. In recent seasons, with the establishment of day-old poult hatcheries in the cities of Sydney and Melbourne, and also in certain country towns of the Riverina, farmers are taking greater care to select good quality stock. Intensive methods of raising turkeys are becoming more common.

[3] Loc. cit.

Nearly half the turkey population of the State is found on the western slopes. The districts on the South-western Slope and extending into the Riverina constitute the most important turkey raising area in New South Wales. Large flocks are also found on the Central Tablelands and the adjoining western slope. The districts to the north of this central region have been increasing their turkey numbers in recent seasons but are still much less important than either the southern or central turkey-raising districts.

Turkeys on range in the Riverina.

(iv) Ducks and Geese.

Ducks and geese are not important in the livestock economy of New South Wales.

The coastal section of the State supports a preponderance of the total population of ducks, with the Cumberland area occupying the leading position. The County of Cumberland supports 84,000 of the 135,000 ducks located in coastal areas, while the total population of the State according to available records, is only 180,000

Generally speaking the coastal and tablelands districts are considered most suitable for raising geese. Dairying districts are particularly well suited for they are able to provide the good pastures required for the birds. An increase in the migrant population from the continent of Europe, particularly Central European countries, may lead to some expansion of this section of the table poultry industry in the future.

TABLE II.

Receival of Eggs into Egg Marketing Board Floors, 1950-51.

Board Floor.	*Quantity.* *m. doz.*
Sydney	17.65
West Tamworth	5.52
Newcastle	3.97
Young	1.59
Albury	.72
Wagga Wagga	.69
Temora	.60
Lismore	.54
Junee	.54
Orange	.45
Mudgee	.45
Dubbo	.42
Grafton	.39
Narrandera	.24
Griffith	.24
Total	34.00*

*The remainder of the State's commercial egg production (16.47 m. doz.) was sold by producer agents.

Source: Egg Marketing Board for the State of New South Wales.

(v) Major Poultry Farming Districts.

The task of illustrating the distribution of poultry stock throughout New South Wales is rendered difficult by reason of the fact that although poultry farming is a widespread occupation the numbers of stock are not spread evenly over large areas of country. The tendency for poultry farms to be grouped together in certain comparatively small areas is most evident in inland areas where the farms cluster about the larger towns or cities, for example, Tamworth and Wagga Wagga.

Some indication of the relative significance of the various localities in regard to poultry production can be gained from the statistics in Table II, showing the receivals of eggs into the branch floors of the New South Wales Egg Marketing Board. Using these figures, in conjunction with the livestock statistics, it is possible to postulate five main areas of poultry production in New South Wales. They are: the Sydney Metropolitan; the Hunter River; the North-west, i.e., the area around Tamworth and Gunnedah; the South-west, i.e., the country which includes centres like Wagga Wagga, Temora, Young, Albury and Narrandera; and the Central-west, being the districts in the vicinity of Dubbo, Orange and Bathurst. The estimated proportion of New South Wales egg production and also fowl and turkey population applicable to each of these regions is given in Table III, and illustrated in Figure I.

TABLE III.

Estimated Proportion of New South Wales Egg and Poultry Production in Certain Regions.

District.	Proportion of Egg Production.	Proportion of Fowl Population.	Proportion of Turkey Population.
	per cent.	per cent.	per cent.
Metropolitan ...	52	45	...
Hunter River ...	12	15	...
North-west	16	10	12
South-west	14	10	51
Central-west ...	4	6	28
Other	2	14	9
Total	100	100	100

2. DEVELOPMENT OF THE POULTRY INDUSTRY.

(i) Increase in Stock Numbers.

Prior to 1940 conditions in the poultry industry were fairly stable, and stock numbers showed no significant fluctuation from year to year. The number of fowls and chickens remained steady at between 5 and $5\frac{1}{2}$-million from 1935 to 1940 inclusive. During the war years the encouragement given to food producers by the Government, accompanied as it was by generally favourable conditions of production, resulted in a considerable expansion of the poultry industry. By 1945 the number of fowls and chickens, as will be seen in Table IV, neared the 10-million mark. Each subsequent year has seen a decline in numbers but the fowl population has remained appreciably above the pre-war average. The official figure for the total fowl and chicken population does not, however, reveal the full strength of these poultry stock in New South Wales. In the annual collection of livestock statistics farmers are only asked to declare the number of birds held on the farm on 31st March. As the cockerel rearing season begins in March and most of these birds would be marketed by the early months of the following year it is obvious that the greater part of the cockerel population would not be shown in these statistics. It is possible, however, to estimate the number of cockerels reared in this State. In Table IV the number of chickens hatched on commercial poultry farms in 1951 is given as 10.59 million head and it can be assumed that male and female birds would be equally represented in this number. A proportion of the male chicks would be destroyed, in some seasons this proportion may be as high as 20-25 per cent. of male chicks hatched, and there would also be losses through subsequent disease and mortality but it seems likely that the number of cockerels available for the market each year would be 3 million, or more.

TABLE IV.

Fowl Population in New South Wales, 1935-51.
(million head.)

Year ended 31st March.	On Farms with 150 and more Fowls.		Fowls and Chickens on all Farms.
	Fowls and Chickens.	Chickens Hatched.	
1935	2.32	3.96	5.52
1940	2.65	5.94	5.47
1944	5.68	8.43	8.11
1945*	6.90	12.34	9.81
1946	6.06	10.95	8.64
1947	6.05	10.76	8.63
1948	5.53	9.10	8.04
1949	5.29	9.94	7.68
1950	5.43	9.98	7.64
1951	5.45	10.59	7.38

* The figures for 1945 partly reflect a more comprehensive collection of statistics.

Source : New South Wales Bureau of Statistics and Economics.

The number of hens available for sale each year would also be in the vicinity of 3 million head. These would consist mainly of culls from the older laying stock. On the basis of official statistics it can therefore be assumed that at least 6 million head of fowls and chickens would be marketed each year.

The turkey population of New South Wales has shown considerable variation over the past fifteen years. There was a marked increase in turkey flocks after 1946 and in 1949 the turkey population was probably the highest on record. The collection of data regarding turkey flocks is beset by many difficulties with the result that official statistics may, on occasions, reveal only half the actual number of turkeys in the State. It is estimated that the south-western turkey districts, i.e., the areas surrounding the centres of Young, Temora, Narrandera and Wagga Wagga, produced in the vicinity of 150,000 turkeys in 1950. This number would probably represent about half the States' turkey population for that season.

(ii) Feed Supplies.

During the period of war-time expansion feed supplies for stock were comparatively plentiful as is indicated in Table V. The quantity of wheat sold for stock feed in New South Wales rose from 5-million bushels in 1940 to 7½-million bushels in the following two seasons, to 13¼-million bushels in 1943, and to a peak of 17½-million bushels in 1944. Early in 1945 official action was taken to ration wheat for use as stock feed in order to assure supplies for human consumption. The use of wheat for stock feed in the post-war years has not approached the level attained in 1944 but the poultry industry remains heavily dependent on wheat supplies. The difficulties of obtaining stock feed wheat in recent seasons, accompanied by its rapidly increasing cost, have been largely responsible for the contraction in the poultry industry.

TABLE V.

Wheat Sold for Stock Feed in New South Wales, 1940-51.

Season *	*Quantity* *m. bus.*
1940-41	4.96
1941-42	7.41
1942-43	7.45
1943-44	13.28
1944-45	17.62
1945-46	7.91
1946-47	7.96
1947-48	6.93
1948-49	5.22
1949-50	8.62
1950-51	10.85

* Season ended November 30th.
Source: Australian Wheat Board.

For the year 1952 the livestock industries in New South Wales have been allocated 10 million bushels of wheat for feed by the Commonwealth Government and up to 24th May, 1952, 5.67 million bushels of wheat had been sold in this State for stock feed. On present indications the production of brain and pollard is expected to be in the vicinity of 16 million bushels. This means a reduction in the supplies of the poultry industry's main feedstuffs of at least 4½ million bushels (in terms of wheat) as compared with 1951. Negotiations are in progress to obtain additional wheat supplies from other States which, although they may not add to the amount of grain available for stock feed, will add to the supplies of bran and pollard.

TABLE VI.

Production of Certain Stock Feeds, New South Wales, 1938-1951.

Year.	Bran (wheaten).	Pollard (wheaten).	Wheat Meal.	Meat Meal.
	'000 tons.	'000 tons.	'000 tons.	'000 cwt.
1938–39	108	121	n.a.	n.a.
1946–47	98	124	n.a.	337
1947–48	97	120	n.a.	363
1948–49	118	151	29	395
1949–50	98	133	27	398
1950–51	114	148	30	397

Source : New South Wales Bureau of Statistics and Economics.

Statistics showing the production of bran, pollard, wheat meal and meat meal are given in Table VI. Such figures as are available indicate a fluctuation of about 10 per cent. in bran and pollard supplies during the past few years, but the production of wheat meal and meat meal appears to be fairly stable.

(iii) Feed Costs.

During the greater part of the war the wholesale price of stock feed wheat remained fairly steady at about 3s. 4d. per bushel. After 1945, however, the price rose steadily from 4s. 3d. per bushel to its present level of 12s. to 12s. 2d. per bushel which represents the full export price of 16s. 1d. per bushel less the Commonwealth subsidy on stock feed wheat of 4s. 1d. per bushel. Details of the various changes which have occurred since 1940 in the Australian Wheat Board's selling price for stock feed wheat are given in Table VII.

TABLE VII.

Changes in the Price of Wheat for use as Stock Feed, New South Wales, 1940-1951.

Date of Change.	*Price per bushel.** s.	d.
January 1, 1940	3	10½
April 12, 1940	4	1
July 29, 1940	4	0¼
November 13, 1941	3	9¾
April 16, 1942	3	3¾
November 28, 1945	4	3
December 13, 1946	4	11
December 22, 1947	5	0
January 19, 1948	6	3¾
December 1, 1948	6	8¾
December 11, 1950	7	10¾
December 1, 1951	12	2

* Selling prices quoted on the basis of truck lots f.o.r. port.
Source: Australian Wheat Board.

The cost of other stock feeds has also risen. The sharp increases in the costs of the various stock feeds which have taken place within the last twelve months have had a serious impact on the industry and in view of the reduced prices paid for poultry will continue to restrict its development.

Each year from 1947 to 1951 there appears to have been a rise of 15 to 20 per cent. in the cost of feed delivered to the farm. Towards the end of 1951 feed prices rose sharply and the cost for that year showed a 60 per cent. increase. The cost to the farmer of a sample ration of feed has been estimated for certain months during the past five years and these cost figures have been listed in Table VIII.

TABLE VIII.

Estimated Cost of a Sample Ration of Feed.

Date.	*Cost per lb. Pence.*
February, 1947	1.10
July, 1947	1.17
December, 1947	1.21
June, 1948	1.40
October, 1948	1.48
May, 1949	1.65
October, 1949	1.68
July, 1950	1.71
January, 1951	1.94
June, 1951	1.94
December, 1951	3.13
March, 1952	3.25

(iv) Egg Production v. Table Poultry.

In earlier seasons the relation between production costs and the price received for poultry products was generally favourable to the producers of table poultry. Conditions were especially favourable during the war years (when poultry production was expanding rapidly) as may be gauged from the fact that in 1944 and 1945 when egg prices were about 1s. 7d. to 2s. a dozen, cockerels were bringing from 10s. to 15s. per bird in the Sydney wholesale markets. In recent months, however, with a fall in the export prices of table poultry and a severe reduction in killing operations there has been a reversal in the relative economic conditions of the two enterprises.

Present circumstances could not be described as entirely favourable to egg producers but the price of eggs has risen steadily in the past few years, and in May, 1952, producers were receiving a gross return of 4s. 5d. per dozen for eggs while hen prices were from 5s. 8d. to 8s. 8d. per bird. They could therefore be considered more favourably placed than cockerel raisers who were receiving less than 2s. (in some cases less than 1s. 6d.) per lb. for birds delivered to a killing establishment during March and April. With many killing works closed and others operating on a much reduced scale these farmers were faced with the unpleasant prospect of selling the stock at unsatisfactory prices or retaining them on the farm. The latter course of action would involve the farmer in the additional expense of feeding the birds at a time when the prospects of an appreciable rise in cockerel prices did not seem propitious.

3. THE OUTPUT OF POULTRY MEATS.

(i) Expansion of Killing Establishments.

The war and post-war years saw both an expansion of the poultry killing industry and an increase in the scale of operations of the major individual firms, particularly those which entered the export trade. Nearly half the firms which can be classed as major producers of poultry meats have been operating less than eight years. These have been attracted to the industry mainly by the favourable prospects for export trade in poultry. Quite large establishments have been built within the last two years or are still in the course of construction. One killing works, partially constructed, was planned to handle 3,000 birds per day, to be obtained in part from the firm's own intensive houses. Construction of this establishment has been delayed pending some improvement in the overseas market prospects.

As previously explained it is not possible to obtain details of all individuals or firms who slaughter poultry for sale. There are at least forty establishments in New South Wales which are known to have been killing poultry on a substantial scale and it can be claimed with some confidence that these establishments would constitute the greater part of the slaughtering industry which is organised to operate on a fairly permanent basis.

The output of these establishments would vary greatly from year to year; a variation which may be illustrated by reference to the fact that poulterers were competing keenly for poultry stock towards the end of 1951, but early in 1952, mainly as a result of the continuing decline in poultry prices on the London market, most firms severely curtailed poultry buying and many ceased killing operations. The number of birds killed and packed by these establishments each year, however, would be approximately five million, comprised mainly of hens and cockerels.

Holding Pens with Birds Awaiting Slaughter.

Each year the killing of poultry would follow a seasonal pattern, the operations of the poulterers being governed by the available supply of suitable birds. During the early months of the year, from January to May inclusive, there are normally heavy supplies of all poultry except turkeys. The turkey season begins in earnest early in June and continues through to August and sometimes later. Other classes of table poultry are in light supply during these winter months and many city firms travel to turkey-raising districts either to buy birds for subsequent slaughter or to set up temporary killing premises. During the final three months of the year increasing supplies of other poultry, e.g., hens, grillers, cockerels, ducks, etc., are again available.

(ii) Location of Killing Establishments.

The location of killing establishments is governed mainly by the distribution of stock and to some extent by the transport pattern. Thus the greatest concentration of large slaughter houses is in the Sydney metropolitan area where there are a dozen large-scale establishments. A large killing works is also operating on premises adjoining the abattoirs at Waratah, near Newcastle.

Outside the metropolitan area the most important region is the Riverina with a quite significant killing capacity concentrated in centres like Wagga Wagga, Young, Temora and Narrandera. In fact it may reasonably be said of this area, and especially of Young, that the number of stock in the district would not be sufficient to meet the demands of all the firms operating in it at the height of the season. Large-scale killing is also a feature of establishments on the North-western Slope, namely at Tamworth and Gunnedah. Competition for poultry stock in these country districts is not confined to the local killing establishments, some of which are controlled by Sydney firms. Slaughterers operate over large tracts of country and in some cases may be buying stock more than 200 miles from their headquarters. In other districts killing establishments are not so large. They serve a greater area and competition from Sydney firms is less keen.

Generally speaking, killing establishments in the Sydney metropolitan area would acquire the greater part of their stock for slaughter from poultry districts within, or adjoining the county of Cumberland. The coastal area lying within the region bounded by the towns of Gosford, Windsor, Penrith and Picton would provide most of the stock.

There have been instances of transporting birds considerable distances to killing works in the Sydney area, for example, turkeys have been transported by motor truck from the Riverina, but the expense of road freight would combine with other factors, such as the loss in weight of birds in transit, to make the enterprise of dubious economic merit except in unusual circumstances. The more common practice is to set up temporary killing premises in a country town during the turkey season.

In country areas the distances travelled by the stock from the farm to the killing works are necessarily longer and journeys of over 100 miles are not uncommon. Such conditions would apply on the North Coast, in areas on the Northern Tableland, in the Riverina and on the South-western Slope. In this latter region there would also be operating a number of buyers from Victoria who have been known to travel as far north as Central-western districts. Some Riverina firms have apparently bought stock from Victoria and on occasions have sought particular birds, e.g., geese and ducks, in the Melbourne market but the number of stock involved would not be great.

(iii) The Wholesale Poultry Markets.

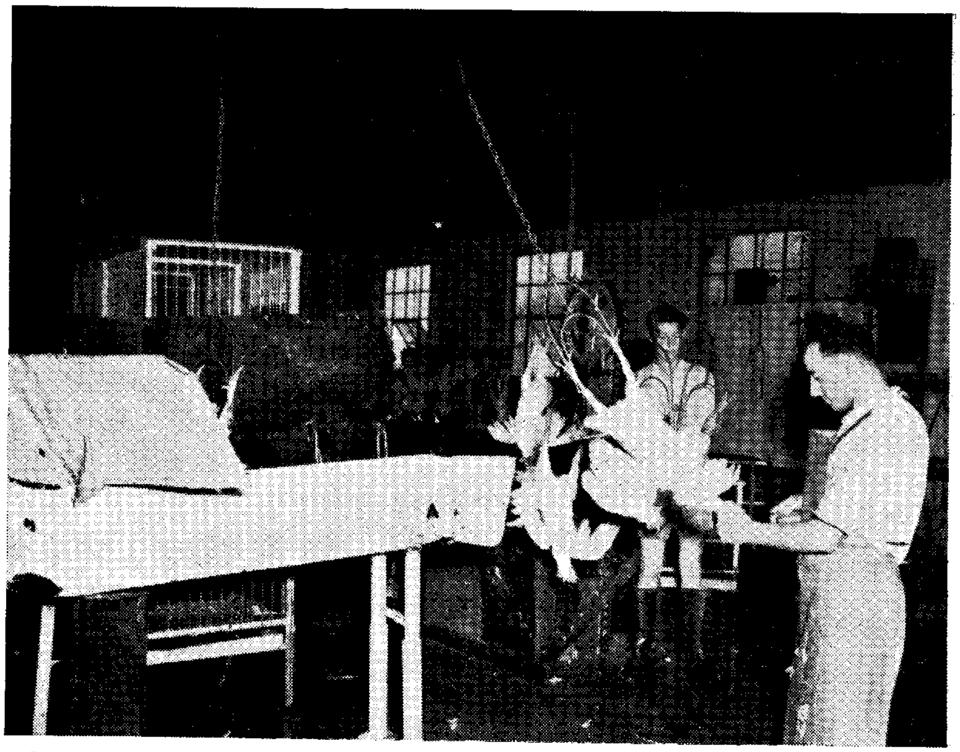
The poultry markets at Sydney and Parramatta still provide much of the stock for slaughter by metropolitan abattoirs although the numbers now handled are considerably less than in the peak period of the war. In 1943, for example, about two million birds were sold at these markets and in each of the three years from 1945 to 1946 the number sold was almost two million. By 1951 the number had dropped to 1.3 million head. The reduction was partly due to the overall decline in the poultry population but the more extensive operations of poultry abattoirs in purchasing stock direct from farmers, especially in seasons when competition for poultry for local and export markets was keen, also played an important part.

With the change in the market prospects for table poultry and the curtailment of killing operations there has been some return to the wholesale markets and this preference can be expected to manifest itself whenever there exists a marked discrepancy between the prices offered for birds on the farm by poulterers and those realised at auction sales.

(iv) Classification of Killing Establishments.

A combination of three factors provide the most satisfactory basis upon which the known killing establishments can be classified. These factors are: the output, the degree of mechanisation and the cold storage facilities.

Although the output is the main criterion it does not provide an adequate basis for classifying killing establishments. Not only does the number of birds slaughtered vary from season to season but the establishment may not be working at full capacity. In fact it may be true to say that no firm in New South Wales has worked to its full capacity for any but a very short period in any season. Nor do all the major establishments employ the chain system of handling birds from the point of slaughter to the final plucking; one firm even continues to pluck by



Commencement of Killing Operations in an Establishment employing a Chain System.

hand but both its output and its long established reputation in the industry rank it among the ten most important firms (controlling seventeen large killing establishments) in the poultry killing industry. Again, in respect of refrigeration, some establishments possess excellent facilities and ample cold storage space while others are only able to chill the carcases which are then stored in nearby cold stores. Some of the smaller operators have neither chilling nor freezing facilities.

Of the establishments encountered in the course of the present survey seventeen can be classed as large-scale poultry killing works with an annual output of from 200,000 to over 300,000 birds each. These establishments would kill a total of about $3\frac{1}{2}$ million birds in a favourable season. In aggregate they would employ about 150 operatives on a fairly permanent basis and about 300 men and women during the peak period of the season. The majority of firms in this category are mainly, if not exclusively, interested in export markets so that their premises for the most part meet the requirements of the Commonwealth regulations governing the conditions of hygiene under which poultry are slaughtered and packed for export[4].

The necessity to meet the requirements of Government regulations and the introduction of slaughtering methods employed in the United States of America have contributed to the evolution of a fairly standard type of large-scale killing works but there remain variations between establishments not only in the lay-out of premises and in the degree of mechanization but also in efficiency.

In the second most important class of killing establishment there are eight firms killing approximately 100,000 head each per year. Individual output may rise considerably above this in favourable circumstances and one or two firms would be capable of killing and handling about 200,000 birds, but generally speaking their annual output is in the vicinity of 100,000. With such an output a chain system would hardly be justified. Conversely, the installation of a chain system would raise the killing capacity of at least one of these establishments to about 300,000 per annum.

The firms in this group are for the most part of recent origin. Most have been set up within the last ten years and although three of the firms are primarily interested in exporting their output, a higher proportion of the poultry handled by these works would be sold locally than would reach overseas markets. The facilities for killing, handling and storing poultry in these establishments are generally less satisfactory than those possessed by the larger works.

The remaining twelve firms included in the survey can be conveniently grouped together. All appear to have handled less than 100,000 birds annually although four of them have each achieved an output close to 100,000 head. At least two of these firms could handle an average annual kill well above the 100,000 mark. Of the remaining eight firms, six would handle between 20,000 and 40,000 birds each year, one would average about 50,000, and one about 10,000 head of stock.

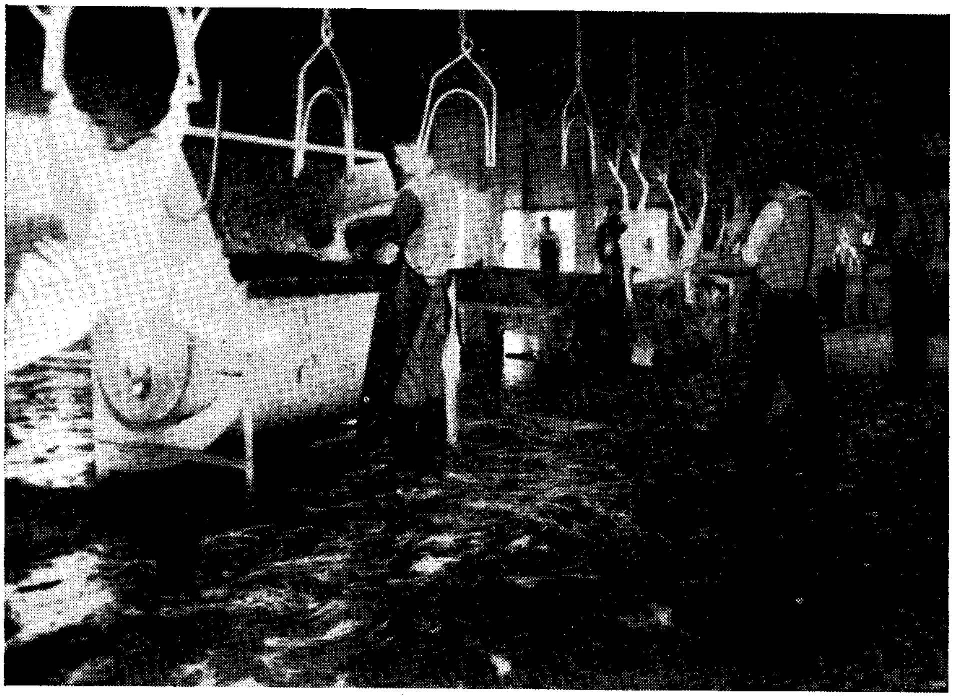
Their common characteristic is that, with one exception, they are exclusively concerned with the local trade and in some cases are actually engaged in retail trading.

The facilities for killing and handling birds possessed by establishments in this group are generally poorer than in either of the other two groups, and although some premises are of a very high standard from the point of view of cleanliness and overall efficiency, many are sub-standard.

Quite apart from the killing works encountered in the course of this survey, there are numerous places where the killing of poultry is carried out on a comparatively small scale. The dressing of poultry can be

[4] Regulations (Statutory Rules 1948, No. 99) under the Customs Act 1901-47 provide that premises shall not be approved as a registered establishment for the killing, dressing and packing of poultry intended for export unless it has suitable holding pens for live birds; has a separate killing and dressing room of a height not less than 12 feet; has a chilling room and also a packing room of a height not less than 10 feet.

Regulations gazetted in 1939 under the New South Wales Pure Food Act, 1908, govern the conditions under which poultry may be killed and dressed for local consumption.



Plucking machine at work in an establishment near Newcastle.

done in shops and residences in the city and suburbs, in country towns and on farms. The number killed by each premises may be as low as 20 per annum; on the other hand, the annual kill may be several hundred. It is not practicable to estimate either the number of such places or the total number of stock handled, although both are probably of significant proportions. Most of this output would be sold to shops, cafes, restaurants, and, in the case of roadside stalls, for example, to passing motor traffic.

The most important disadvantage of the lack of information regarding much of the poultry killing industry is the resultant lack of knowledge concerning the conditions of hygiene under which considerable quantities of table poultry are slaughtered and handled for local consumption, especially through cafes, delicatessen and other retail shops.

The conditions observed in many large establishments leave much to be desired, and it is open to question whether many of the people who are engaged in this industry realise the importance of maintaining certain minimum standards of hygiene in all operations where produce is being handled for human consumption.

Sale of Feathers.

Of the twenty-five poultry killing works which, by local standards, could be called large-scale operators, only six sell their feathers. All other establishments considered the sale of feathers an uneconomic proposition, the return being in their opinion too small to justify the work and expense involved in drying and carting the feathers to their destination. Despite a reported shortage of feathers, the position is likely to remain as it is for some time to come.

Other Activities.

In country areas the packing of frozen rabbits for export is an important adjunct of some poultry-killing works, and in recent months it is to this enterprise that firms have looked in order to cushion the effects of the declining export trade in poultry.

This alternative is not open to firms in the Sydney metropolitan area. However, one metropolitan firm commenced meat canning as soon as it ceased poultry killing, and others carry on businesses apart from the dressing of poultry, e.g., retail shops, produce stores and farming.

4. MARKETING POULTRY MEATS.

(i) Market Classification of Birds.

The main classes of birds marketed in New South Wales are as follows:—

Poussins: these are chickens six to eight weeks old and weighing up to 1 lb.

Grillers are poussins at a more advanced stage of growth. They are usually eight to twelve weeks old and weigh between 1 lb and $2\frac{1}{4}$ lb.

Roasters are male birds older and heavier than grillers. Small roasters are aged twelve weeks and over and weigh $2\frac{1}{4}$ lb. to 4 lb. Prime roasters are between four months and about seven months old and weigh over 4 lb.

Stags are old cockerels carrying hardened spurs.

Hens for table purposes are classed by size and weight rather than by age as with other table poultry. A medium hen of a light breed would average $3\frac{1}{2}$ to $4\frac{1}{2}$ lb. and a good hen in the same breed would weigh 5 lb. or more. With heavy breeds a medium hen would weigh 4 lb. or 5 lb. and a good hen $5\frac{1}{2}$ lb. or over. Boiler fowls are usually hens weighing 3 lb. and more which are too old to be cooked by roasting.

Turkeys: Gobblers and hens are usually mature and ready for marketing at about ten months of age. Gobblers then weigh 15 lb. and over. The best market weight for hens is considered to be 10 lb. or more.

Detailed information regarding the disposal of poultry meat as between local and overseas markets is not available. Official statistics of poultry exports from New South Wales to overseas countries are available from Commonwealth sources but, useful as these are, they would not include the quantities exported through Melbourne either by New South Wales poultry-killing establishments or by Victorian firms purchasing stock from New South Wales farms. Moreover, the quantity of poultry meat sold on local markets can only be estimated.

The problem is further complicated by the rapidity with which the distribution pattern may change. When overseas markets are unsatisfactory, for example, many poulterers who originally operated solely for export trade would seek to divert part or all, of their output into local channels.

The majority of the killing works operating on a large scale were primarily interested in packing for overseas markets. In previous years export markets, mainly in the United Kingdom, offered attractive prices and enabled the exporters to market their pack in bulk quantities instead of meeting numerous comparatively small demands on the home market. The unfavourable change in selling conditions on the London market have caused a significant change in this respect, not only have exports fallen but much of the poultry originally intended for export is now being sold on local markets. In their best year, 1950, New South Wales firms would have packed in the vicinity of 2½ million birds for export either through Sydney or Melbourne.

(ii) Home Consumption.

The consumption of poultry meat in Australia has been estimated by the Commonwealth Statistician at 9.7 lb. per caput. With a population of 1.53 million in the Sydney metropolitan area and a New South Wales population of 3.15 million, this would mean that the metropolitan area would consume about 15 million lb. of poultry meat annually, while the entire State would require 30.6 million lb. Assuming an average weight of 3¾ lb. per bird there must be about 4 million birds slaughtered each year in the metropolitan area and about 8 million birds to supply the State's consumption.

The establishments surveyed appear to place at least 2 million birds on local markets. Working on this basis it is estimated that almost 6 million birds are killed each year by very small operators and by other individuals, i.e., by farmers killing birds for home consumption and by urban dwellers killing a few birds obtained from a backyard fowl run, a nearby farm or the poultry markets.

TABLE IX.

Estimated Average Per Caput Consumption of Poultry Meats in Certain Countries.

Country.	1939.	1947.	1948.	1949.	1950.
	lb.	lb.	lb.	lb.	lb.
United Kingdom ...	4.5*	...	4.9	5.9	5.9
Canada	19.5	24.8	19.2	21.2	22.0
Australia	9.7†	10.7‡	9.7‡	9.7‡	...
U.S.A.	21.7	28.1	26.7	29.7	31.9
Denmark	14.3	9.0	9.5	10.8	9.9
Sweden	2.6	3.7	4.0	3.7	4.0

* 1934–38 average.

† Average for 1936–39 includes rabbits.

‡ Twelve months ending 30th June of year following that stated.

Source: Commonwealth Economic Committee—*Meat Summary*, London, 1951, p. 65.

The per caput consumption of poultry meat in Australia is one of the lowest among the nations which have a fairly high standard of living. This is seen in Table IX, where Australian per caput consumption is shown to be about one-half of the Canadian and one-third of the

American consumption. To raise local consumption to the Canadian level, for example, would necessitate the annual slaughter of over 18 million birds in New South Wales.

With such a large apparent scope for developing local markets it is natural to pose the question why the expansion in the table poultry industry has not been even greater than it has.

The dietary habits of the local population doubtless constitute one factor in limiting consumption, but the main explanation seems to lie in the high price at which poultry meats have been retailed.

The retail prices quoted in Table X have been gathered partly from the Quarterly Summary of Statistics issued by the Commonwealth Statistician and also from weekly market reports issued by the Department of Agriculture. It is not claimed that all meats sold in the metropolitan area were sold at these prices, nor is it claimed that the price of sirloin beef, for example, is strictly comparable with that of a cockerel. The prices, however, are fairly representative of retail prices charged in metropolitan shops and do give an indication of the relative cost of the foods stated.

The expensiveness of poultry meats is quite outstanding. Beef prices have risen from 17d. per lb. in 1949 to 28d. per lb. in mid-1951, and the price of pork (generally considered an expensive commodity) has moved from 26d. per lb. to 42d. per lb. in the same period. As compared with these items the price of cockerels was about 48d. per lb. in 1949 and by June, 1951, had risen to as high as 84d. per lb.

TABLE X.

Retail Prices of Various Meats in the Sydney Metropolitan Area.
(Pence per lb. to nearest penny.)

Date.	Cockerels.	Hens.	Beef, Sirloin.	Mutton Chops.	Pork Loin.
January, 1949	48	42	17	14	26
April, 1949	47	41	17	14	26
September, 1949 ...	56	45	17	15	28
December, 1949 ...	56	46	19	15	32
January, 1950	56	46	19	15	31
April, 1950	56	48	19	15	32
September, 1950 ...	60	49	20	18	35
December, 1950 ...	63	54	25	18	39
March, 1951	70	56	27	19	40
June, 1951	84	64	28	22	42

Source : Commonwealth Bureau of Census and Statistics and New South Wales Department of Agriculture.

A paradoxical situation developed early in 1952 in regard to the price of poultry meats. Although export prices declined sharply (as did prices paid to farmers for birds) and export shipments were difficult to clear, the retail prices charged for poultry remained high. There were instances of retail prices of chicken, for example, falling to 54d. per lb., and there are still retailers selling at prices less than those quoted above, but the retail price of poultry meats, generally speaking, remained high.

The sharp rise which had occurred in the prices of most meats may constitute a partial explanation for the seeming rigidity of poultry prices, but the circumstances of the early months of 1952 represented an opportunity to expand local trade in poultry meats. Such an expansion, if achieved, would have been to the benefit both of distributors and farmers.

If the retail prices of poultry meats is greatly out of alignment with those of other meats it is unlikely that local per caput consumption will rise to any great extent. Under these circumstances any expansion in local trade would only result from an increasing population and the presence of a greater number of migrants from countries where poultry meats are more frequently consumed.

(iii) Export Markets.

Export trade in New South Wales poultry meats was of no great importance prior to 1945 as can be appreciated from the statistics in Table XI. These figures show that exports from New South Wales did not average more than 30,000 pairs annually from 1936 to 1945 but rose to 136,000 pairs in 1946 and were above one million pair in 1949 and 1950.

TABLE XI.

Poultry Exported from New South Wales, 1936-1951.

Year ended 30th June.	Quantity.	Value per Bird.
	'000 pairs.	s. d.
Average, 5 years 1936–1940	29	8 10
Average, 5 years 1940–1945	30	7 11
1946	136	9 7
1947	360	12 11
1948	726	10 6
1949	1,012	12 0
1950	1,124	11 4
1951	684	15 1

Source: New South Wales Bureau of Statistics and Economics.

A contract was negotiated by the Australian Government with the British Ministry of Food in 1945. In that year a fall in the available supplies of poultry feeds, particularly stock feed wheat, was anticipated and in view of the consequent likelihood of heavy culling of poultry stock, it was arranged that the British Ministry of Food would purchase 1,000 tons of "boiler" type poultry at 1s. 6¾d. per lb (Australian currency), f.o.b. Australian ports of shipment. For the following four and a half years Australia continued to ship poultry to the United Kingdom under contract to the British Ministry of Food. During the period from 1946 to June, 1950, Australia despatched over 25,000 tons to this market.

Packing Table Poultry for Export.

The three eastern states of Australia produce most of the table poultry for export. It is not possible, however, to say exactly what proportion of the exports are produced in each State as a significant quantity of New South Wales poultry, for example, is either purchased by Victorian killing firms or exported by New South Wales killing establishments through Melbourne. On the whole, however, New South Wales can be regarded as the leading producer of export poultry. Statistics relating to New South Wales and Australian export trade in poultry meats are given in Table XII.

TABLE XII.

Exports of Poultry from Australia, 1945-1951.

(Quantity: '000 pairs.)

Year.	Ducks.		Fowls and Capons.		Turkeys.		Other Poultry.	
	N.S.W.	AUST.	N.S.W.	AUST.	N.S.W.	AUST.	N.S.W.	AUST.
1945–46 ...	2	5	110	242	19	21	5	15
1946–47 ...	9	23	291	858	58	74	2	3
1947–48 ...	27	92	640	1,654	59	124	...	1
1948–49 ...	42	140	868	2,197	102	153	...	3
1949–50 ...	51	271	968	2,439	105	162	...	3
1950–51 ...	26	118	583	1,754	76	137	...	4

Source : Commonwealth Bureau of Census and Statistics.

Contracts with the British Ministry of Food ceased on 30th June, 1950, but the shipment of poultry to Great Britain continued on a private basis. Although the contracts ceased in 1950 and total exports declined in the subsequent export season, the United Kingdom remained by far the most important market for Australian poultry. All other overseas markets are insignificant by comparison.

Statistics regarding the imports of poultry meats into the United Kingdom are given in Table XIII. The most notable feature of this trade in poultry is the change which has occurred in the relative importance of the sources from which Britain draws her supplies. In 1949-50 imports from the countries of the British Commonwealth and the Irish Republic represented 60-70 per cent. of all imports as compared with less than 30 per cent. in 1938. The remarkable increase in Australian shipments to the United Kingdom is also evident. Conversely, Hungary supplied 35 per cent. of the pre-war imports but in 1950 supplied only a very small proportion of the total. The importance of supplies from the Irish Republic is also indicated in the Table. The United Kingdom, however, supplies the greater part of her poultry requirements; it is estimated that 130,000 tons of poultry are available each year for consumption in that country.

TABLE XIII.

Imports of Poultry into the United Kingdom, 1938 *to* 1950.
('000 tons.)

Country.	1938.	1949.	1950.
Canada	0.6	...	...
Australia	0.1	9.2	7.9
Other Commonwealth Countries ...	...	0.2	...
Irish Republic	5.1	11.0	10.6
Foreign—			
U.S.A.	0.1	...	...
Argentina	1.0	...	1.4
Uruguay	0.5	0.5	0.4
Hungary	7.3	3.6	0.8
Poland	0.4	2.8	6.0
Other Foreign Countries ...	5.6	2.5	3.8
Total	20.7	29.8	30.9

Source : Commonwealth Economic Committee *Meat Summary,* London, 1951, Page 68.

(iv) London Prices.

The prices paid for Australian poultry exported under contract to the British Ministry of Food, and the conditions under which exporters were then able to operate, are generally considered to have been very favourable. It was during this period that a number of poulterers were able to establish their poultry-killing business on a fairly large scale.

In 1950 the contract prices were as follows:—

Boiler Fowls—2s. 3½d. per lb. (Australian).
Chickens, 2s. 8½d. per lb. (Australian).
Ducks, 2s. 6d. per lb. (Australian).
Turkeys, 2s. 11d. per lb. (Australian).

When the British contract ceased in June, 1950, the prices received for Australian consignments were determined on the free London market. Little information regarding offerings on this market are available but it is believed that conditions remained favourable in the 1950-51 season. Prices apparently varied from 3s. 8d. to 4s. 6d. per lb. for chickens, and from 2s. 10d. to 3s. 4d. per lb. for boilers and 5s. 6d. to 6s. 1d. per lb. for turkeys.

It was towards the end of 1951 that conditions in the London market became unfavourable for Australian exporters. During September and October of that year the prices quoted for first-grade Australian chickens were in the vicinity of 50d. per lb. (Australian currency). In November these prices appeared to range from 49d. to 62d. per lb., but thereafter trade slackened further and prices generally receded. In January and February, 1952, price offerings were about 45d. to 50d. per lb. and in March and April they again receded to 36d. to 45d. per lb.[5].

It can be assumed that if the London price of poultry is about 1s. 0d. per lb. in excess of the cost of the bird at the killing works there is a margin for profit by the packer and exporter. On this basis it seems that Australian exporters would have been able to clear their stocks of frozen poultry on the London market without loss up till the end of November, 1951. They would then be selling stock bought and killed in Australia up to September.

Stocks held in cold store in London were apparently not cleared by November. Moreover, local buying of poultry for export continued at fairly high prices, for example, 3s. per lb. for cockerels.

Poultry farmers had been receiving good prices for their table birds because killing firms and exporters as a whole were optimistic about export trade for the 1951-52 season. Although there were early indications that this optimism was unfounded, export operations continued partly because it was hoped the London market would improve and partly, perhaps, because there was then little that any individual could do except cease killing. In the early months of 1952 the London market still showed no signs of the desired improvement, and with the increasing financial stringency conditions became most difficult for firms engaged in the poultry export trade. Some firms ceased killing, others continued at a much reduced rate, and the price paid to the farmer for his birds dropped sharply.

Although there seemed no alternative, the decline in killing operations, and in the prices offered for birds, was a severe blow to farmers and the poultry industry generally. It was doubly unfortunate in that it came at a time when farmers were already experiencing grave difficulties in regard to feed supplies and their costs of production.

The development of poultry markets both locally and overseas depends on the existence of farmers who are not only able and willing to raise the appropriate number of birds but who also have the incentive to produce the right quality of table poultry. It is generally conceded that considerable scope for improvement exists in the quality of carcases packed for both local and overseas consumption, and it must also be realised that in times of expanding markets, if such are again experienced,

[5] The author is indebted ot C. R. Lawrence (Aust.) Pty. Ltd. and Lovell & Christmas Ltd. for information regarding these price quotations.

there is difficulty in obtaining sufficient birds. Drastic curtailment of killing operations and reductions in prices offered for birds are not conducive to the attainment of the best conditions in the industry.

5. SUMMARY.

(i) Poultry farms are found in most parts of New South Wales, but areas such as the Central Coast show a marked concentration of fowl numbers while the Slopes support the greater proportion of the turkey population. Ducks and geese do not assume any great importance in the contemporary livestock economy.

(ii) In the past egg production has been the main motive for farmers establishing a poultry run and this consideration has dominated their selection of suitable breeds of birds. Formerly White Leghorn flocks constituted two-thirds of the commercial fowl population and Australorps nearly one-fifth. In recent years the increasing importance of table poultry production has assisted in raising the proportion of other breeds of fowls, particularly crossbreds.

(iii) There are five main regions for poultry farming in New South Wales. For convenience these are denominated as follows: (*a*) the Sydney metropolitan area; (*b*) the Hunter River district; (*c*) the North-western Slope; (*d*) the South-western Slope and Riverina; (*e*) the Central-western Slope and adjacent tableland.

(iv) Favourable conditions led to a considerable expansion in the poultry industry during the war. By 1945 the number of fowls and chickens was nearly 10 million. Though the number has since declined the total fowl population has remained appreciably above the pre-war average.

(v) During the period of expansion poultry farmers had little difficulty in obtaining feed supplies. Recently, however, these supplies, particularly of wheat, have been insufficient to meet the demand for them. Reduced feed supplies and increased costs have constituted a serious problem for poultry farmers.

(vi) The majority of the large-scale poultry killing works are located in the Sydney metropolitan area. The most important inland area is on the South-western Slope and in the Riverina. Large-scale establishments are also located at Newcastle and on the North-western Slope.

(vii) Many of the largest killing firms have been operating less than eight years. These have been attracted to the industry mainly by the hitherto favourable prospects for export trade in poultry products.

(viii) With the expansion in killing operations there was some change in the method of obtaining stock for slaughter. As competition for birds became keen increasing quantities of poultry were purchased direct from farms, thus circumventing the wholesale poultry markets in Sydney.

(ix) Of the forty establishments known to be killing poultry in New South Wales, seventeen establishments (controlled by ten firms) can be classed as large-scale operators with an annual output of 200,000 to over 300,000 birds. Eight firms each kill approximately 100,000 head per year. The remaining firms kill less than 100,000 head in a year.

(x) Prior to the drastic change in overseas prospects, which occurred towards the end of 1951, the majority of large killing works were primarily interested in export markets. In their best year, 1950, New South Wales firms exported about $2\frac{1}{2}$ million birds, mainly to the United Kingdom.

(xi) It is estimated that the local New South Wales market annually consumes 30.6 million lb. of poultry meat, or the equivalent of about 8 million birds.

(xii) The Australian per caput consumption of poultry meats is among the lowest of those nations with fairly high living standards. The explanation appears to be partly the dietary habits of the Australian people, but the very high prices at which poultry meats are customarily retailed also represents a barrier to an expansion in home consumption.

(xiii) Following a sequence of favourable export seasons the prices of poultry declined sharply on the London market towards the end of 1951. As a result, many exporting firms sustained financial losses. Local killing operations have been severely curtailed in 1952 and the prices paid to farmers for their birds in some cases fell to almost half the peak price offered during 1951.

(xiv) Although there were indications of increasing firmness in the demand for poultry stock in May, 1952, it is suggested that prices were reduced more severely than circumstances warranted. Drastic price reductions and the severe curtailment of killing operations, although to some extent inevitable, are not in the best interests of the poultry industry as a whole.

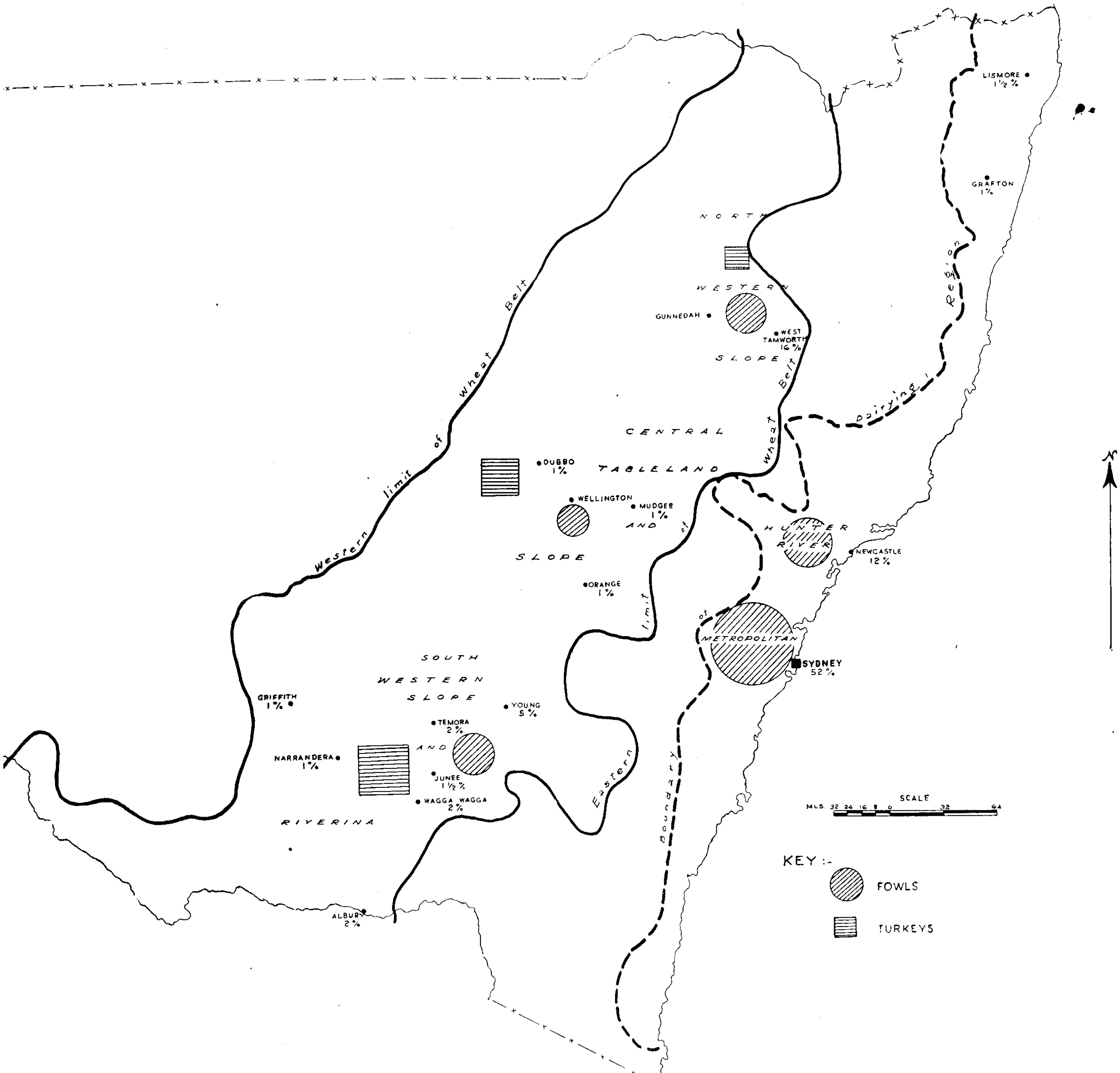


Fig. 1.—Distribution of Poultry Population in New South Wales.

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