

# **Report / Economic Advisory Council. Committee on Slaughtering of Livestock.**

## **Contributors**

Great Britain. Economic Advisory Council. Committee on Slaughtering of Livestock.

De La Warr, Herbrand Edward Dundonald Brassey Sackville, Earl, 1900-1976.

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ECONOMIC ADVISORY COUNCIL  
COMMITTEE ON  
THE SLAUGHTERING  
OF LIVESTOCK  
REPORT

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## COMMITTEE ON THE SLAUGHTERING OF LIVESTOCK.

### COMPOSITION AND TERMS OF REFERENCE OF THE COMMITTEE.

On the 3rd January, 1931, the Prime Minister appointed a Committee of the Economic Advisory Council with the following terms of reference :—

To consider and report on the question whether the present arrangements for the slaughtering of livestock for food are satisfactory from the economic standpoint.

2. The Committee is constituted as follows :—

The Earl De La Warr, Parliamentary Secretary, Ministry of Agriculture and Fisheries, *Chairman*.

Sir Ernest R. Debenham, Bart.

Councillor Andrew Gilzean.

Professor J. Harry Jones.

Sir Basil E. Mayhew, K.B.E.

Mr. Francis Hemming, C.B.E.,  
Joint Secretary, Economic  
Advisory Council

Mr. P. K. Debenham, Assistant,  
Economic Advisory Council

} *Joint Secretaries  
to the Committee.*

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# REPORT.

## I.—INTRODUCTORY.

### (a) Procedure adopted by the Committee.

On the 16th January, 1931, we held a preliminary meeting for the purpose of laying down the procedure to be followed in our inquiry and in order to inform ourselves generally of the problems to be studied. We decided, in the first instance, to obtain from the Ministry of Agriculture and Fisheries and from the Department of Agriculture for Scotland written evidence describing the present arrangements for slaughtering in England and Wales and in Scotland respectively. At the same time, we asked those Departments to put forward any suggestions for future development that they might wish to make. In addition, we invited the Ministry of Health to furnish us with written evidence, in view of their special interest in this problem in relation to sanitation and public hygiene. We also invited corresponding evidence from the Department of Health for Scotland.

2. At the same meeting we decided that, in view of the highly technical character of the questions involved and of the large number of complicated operations conducted in a modern slaughterhouse, it was desirable that we should acquaint ourselves at first hand with some of the problems with which we were confronted. We accordingly arranged for two members of our Committee (Mr. Andrew Gilzean and Sir Basil Mayhew) and Mr. P. K. Debenham, one of our Joint Secretaries, to visit the City Corporation's slaughterhouse at Islington and the slaughterhouse maintained by the London Co-operative Society at Leytonstone.

3. As a result of our preliminary survey we were much impressed with the need for obtaining adequate information in regard to slaughtering practice abroad, and, in particular, in regard to packing-house methods in the United States and in South America. Slaughtering methods in this country admittedly fell short of the best foreign practice and we hoped, by obtaining information from abroad, to secure material which would be of great value to us in the preparation of our recommendations to the Economic Advisory Council. We accordingly prepared a short questionnaire indicating the points on which we desired information, and this we invited the Department of Overseas Trade to forward to His Majesty's Commercial Diplomatic Officers stationed in the United States (with special reference to Chicago), Sweden (with special reference to Stockholm), Germany (with special reference to Berlin, Dresden and Frankfurt), Switzerland (with special reference to Berne), France (with special reference to Lyons), Holland, Argentine and Uruguay. We are



greatly indebted to that Department for the assistance they have rendered to us in this way and to their officers abroad for the information which they have obtained for us on this important aspect of our inquiry. We also received a memorandum regarding methods of slaughtering in Brazil prepared by Mr. Lamb Froom, the representative at Buenos Aires of the Ministry of Agriculture and Fisheries. We also informed ourselves in regard to slaughtering practice in the Dominions. In particular, we made a special study of the system in operation at Adelaide in South Australia.

4. We also took steps at our first meeting to obtain such published information as was already available in regard to our subject. Among the more important of these documents were the Interim Report on Meat prepared by a Sub-Committee appointed by the Standing Committee on Trusts under the Profiteering Acts, 1919 and 1920 (Cmd. 1057), the Interim Report on Meat, Poultry and Eggs of the Departmental Committees of the Ministry of Agriculture and Fisheries on Distribution and Prices of Agricultural Produce (Cmd. 1927) (the Linlithgow Committee), the Report on Markets and Fairs in England and Wales, Part I, General Review (Ministry of Agriculture and Fisheries: Economic Series No. 13, 1927), the Report on the Marketing of Cattle and Beef in England and Wales (Ministry of Agriculture and Fisheries: Economic Series No. 20, 1929) and the Report of an Inter-Departmental Committee of the Ministry of Agriculture and Fisheries and Scottish Office on the Grading and Marking of Beef (Cmd. 3648).

#### (b) Evidence received.

##### (i) Oral evidence.

5. We began the hearing of oral evidence on the 27th January, 1931, our first witnesses being the representatives of the Ministry of Agriculture and Fisheries. These were followed by the representatives of the Ministry of Health, the Department of Health for Scotland and the Department of Agriculture for Scotland. This completed our general survey of the present position.

6. On the conclusion of this part of our inquiry we began the hearing of oral evidence from organisations representative of the various sections of the industry. These included the Cattle Markets Committee of the Corporation of the City of London, the Smithfield and Aldgate Carcase Butchers' Association, the Northern Market Authorities' Association, the Association of Midland and Southern Market Authorities, the Association of British Chemical Manufacturers, the British Leather Manufacturers' Association, the United Tanners' Federation and the Leather Producers' Association, the National Federation of Meat Traders' Associations, the National Farmers' Union of Scotland, and the Scottish Chamber of Agriculture. In addition, we received evidence in regard to the conditions



of employment in slaughterhouses from the Journeymen Butchers' Federation of Great Britain, and from the National Union of Distributive and Allied Workers. Evidence was also given to us by the Parliamentary Committee of the Co-operative Congress in regard to the slaughterhouses maintained by the co-operative movement. Finally, we were assisted by a number of individual witnesses, who gave us the benefit of their special experience in one or other aspects of our problem.

(ii) *Written evidence.*

7. In addition to the evidence taken orally, we received a large number of written communications. The Departments of State, referred to in paragraph 1 above, and the Ministry of Transport and the Department of Scientific and Industrial Research, furnished us with memoranda on a number of miscellaneous points on which we invited their assistance. In addition, we received communications from a number of bodies, including the Railway Clearing House, the National Farmers' Union, the Scottish Federation of Meat Traders' Associations, the Aberdeen Fleshers' Incorporation, the Scottish Agricultural Organisation Society, the Glasgow United Fleshers' Society, and the Edinburgh Master Butchers' Association. Finally, we received from the Royal Society for the Prevention of Cruelty to Animals a statement of views (which coincided with those which have informed our inquiry) in regard to the need of avoiding unnecessary travelling of animals, and of systematising their care and treatment in the slaughterhouses and in the actual slaughtering.

8. We held 17 meetings for the purpose of hearing evidence. Further particulars regarding the evidence received are given in appendix 1 to this report. We desire to place on record our indebtedness to all who have assisted us in our inquiry, whether by giving oral evidence before us or by furnishing us with memoranda.

(c) *Arrangement and scope of Report.*

9. In preparing our Report we have thought it convenient to give first a survey of the organisation in Great Britain of the trade in animals for slaughter and of the trade in meat (section II), and, secondly, of certain aspects of slaughtering practices in those countries overseas from which we have received special information (section III). In section IV we consider the merits from the point of view of this country of the packing-house system. In section V we discuss what modification of this system would be suited to the needs of this country. Section VI contains our principal recommendations. In section VII we discuss certain questions concerning private slaughterhouses. Our principal conclusions and recommendations are summarised in section VIII. In appendix 2 we give statistics relating to various aspects of our inquiry.



10. We have carried our inquiry to the furthest point possible without a costly expert investigation. To prepare a detailed scheme would not only have taken a long time, but would have involved an elaborate survey of the country, together with the preparation, which would have necessarily been costly, of estimates for the construction of an up-to-date slaughterhouse and of the operating costs of such a slaughterhouse. We have, consequently, ourselves stopped short at the point where the work of the National Slaughterhouses Board, whose appointment we recommend (paragraph 177), should begin.

## II.—THE ORGANISATION IN GREAT BRITAIN OF THE TRADE IN ANIMALS FOR SLAUGHTER AND OF THE TRADE IN MEAT.

11. We propose in this section to give a survey of the methods by which the trade in animals for slaughter and in the products arising from their slaughter is at present conducted in this country. Our object in doing so is to provide the background required to enable us to discuss the possible lines of development with which the later parts of our report are concerned. The chain of operations with which we are concerned may be divided into four parts. The first of these, described very briefly in sub-section (b) of this section, includes the purchase of live animals off the farm and their passage through one or, possibly, more live cattle markets up to the point of slaughter. Secondly, there is the actual process of slaughter, in which we are mainly interested. In this country this may be carried out either in a private slaughterhouse, which is generally the property of the butcher who ultimately sells the carcass as meat, or in a public slaughterhouse, owned by a municipality. The process of slaughter includes lairage, or resting, stunning (except in the case of kosher killed meat), bleeding, removal of the hide or skin and other offals, division of the carcass into two sides (an operation which is not performed for smaller animals), cooling, hanging and, finally, division into joints for sale. The organisation of this section of the trade is discussed in sub-sections (c) to (e). Thirdly, there is the wholesale and retail trade in meat and edible offals. The former of these we discuss in sub-section (f). Lastly, there is the treatment and disposal of inedible by-products, which are discussed in sub-section (g). In sub-section (h) and (i) we deal with some of the problems that confront local authorities. Our information on these questions is derived in part from the published investigations of the Ministry of Agriculture and Fisheries and of the Department of Agriculture for Scotland, and in part from memoranda and evidence submitted to us in the course of our inquiry by those Departments and by trade and other witnesses.

12. The meat supply of this country is divisible into three parts: (a) meat produced from home-finished animals which are, of course, slaughtered in this country, (b) meat produced from cattle finished overseas (for the most part in Ireland) but slaughtered in this country,



and (c) meat which is imported into this country as such. In the following table (Table 1) we give an estimate for the year 1928-29 of the amounts (in cwts.) and percentages attributable to each of these sources of supply. We have thought it prudent, here and elsewhere in this section, to select the year 1928-29 (though in most cases more recent figures were available), as that year was one of comparative stability and thus affords a better basis for comparison.

TABLE 1.

*Estimate of amounts of (a) meat produced from home-finished animals, (b) meat produced from cattle finished overseas, and (c) imported meat consumed in the United Kingdom in 1928-29 and percentages attributable to each of these sources of supply.*

(Millions of cwts.)

—	Beef and veal.		Mutton and lamb.		Pigmeat.	
		Per cent.		Per cent.		Per cent.
Home-finished* ...	11·62	44	5·40	47	6·69	39
Imported alive* ...	2·38	9	·29	3	·48	3
Imported meat ...	12·53	47	5·76	50	9·81	58
	26·53	100	11·45	100	16·98	100

\* 10 per cent. added for red offals.

13. The greater part of the supplies of beef and veal imported from abroad come from the Argentine and of mutton and lamb from New Zealand. The percentage of the total consumption of meat represented by imported meat varies in different parts of this country. Large urban areas are more convenient markets for the importer than small towns and villages, and there is a natural tendency for the sales of foreign meat to be concentrated in such cities as London, Liverpool and Manchester. There is a further tendency for a larger proportion of foreign meat to be sold in the south of England than either in the north of England or Scotland. We have no accurate figures, but it is not unlikely that two-thirds of the total meat consumed in London is imported. In Manchester, on the other hand, the corresponding figure is only 45 per cent. In Scotland we understand that the practice of consuming imported meat has not greatly developed.

(a) The extent and distribution of the production of cattle, sheep, and pigs.

14. In the following table (Table 2), we give an estimate of the number of animals sold off the farm in Great Britain for slaughter in the year 1928-29. The figures for England and Wales are those given



by the Ministry of Agriculture and Fisheries in Part I of their Agricultural Statistics for that year. The figures for Scotland are roughly estimated by us from the Department of Agriculture for Scotland's Annual Statistics, 1929, Part I.

TABLE 2.

*Estimated number of animals sold off the farm for slaughter.  
1928-29.*

(Figures in thousands.)

—					England and Wales.	Scotland.	Great Britain.
Cattle	...	...	...	...	1,420	320	1,740
Calves	...	...	...	...	926	110	1,036
Sheep and lambs	...	...	...	...	7,007	3,500	10,507
Pigs	...	...	...	...	4,109	150	4,259
					13,462	4,080	17,542

15. The cattle figures for England and Wales for the average of the period 1923-24 to 1927-28 have been published in greater detail in the Ministry of Agriculture and Fisheries Economic Series, No. 20, from which the following table (Table 3) is taken :—

TABLE 3.

*Estimated average number of cattle fattened and slaughtered in  
England and Wales annually in period 1923-24 to 1927-28.*

(Figures in thousands.)

Cows	...	...	...	...	600
Steers and maiden heifers	...	...	...	...	387
Baby beeves	...	...	...	...	30
Bulls	...	...	...	...	21
					—
Total home-produced	...	...	...	...	1,038
Irish imported as stores	...	...	...	...	256
					—
Total slaughtered	...	...	...	...	1,294

16. In addition to those animals which were fattened in Great Britain (see Table 2), large numbers of fat stock are imported into this country, mainly from Ireland. In 1928, the number of fat cattle imported from this source was 321,000 and the total imported from all sources was 378,000, while the number of sheep was, from all



sources, 576,000.\* Adding these figures and the comparable figures for calves and pigs to those in Table 2, we obtain the following figures of animals slaughtered in Great Britain :—

TABLE 4.

*Estimated number of animals slaughtered in Great Britain in 1928-29.*

(Figures in thousands.)

Cattle	...	...	...	...	2,118
Calves	...	...	...	...	1,097
Sheep	...	...	...	...	11,083
Pigs	...	...	...	...	4,566
					<hr/>
					18,864

17. The distribution of livestock among different counties and between summer and winter is shown in appendix 2, Tables 1-4. From the information there given, we draw attention to the following points, which appear to us significant :—

- (1) Large numbers of steers are finished in the midland counties, especially Leicester and Nottinghamshire. In this part of England they are largely fattened on grass. Output is consequently heaviest in the summer months.
- (2) The output of steers from Norfolk is also heavy, but in this case is mainly confined to the winter and spring months, the animals being largely stall-fed on straw and roots.
- (3) In Scotland fat cattle are mainly concentrated in the counties of Aberdeen, Argyll, Fife, Forfar, Kincardine and Stirling.
- (4) The cow population (from which a large number of beef-producing animals is drawn) is heaviest in Lancashire and Cheshire, owing to the double advantages of suitable natural conditions and a large consuming population.
- (5) In the case of sheep, production is heaviest in the counties on either side of the Scottish border, in Wales and the adjoining counties, in Devon and Kent.
- (6) Pigs are most numerous in the Eastern counties, where supplies of home-grown grain have been available; and in Cornwall and Cheshire, where they are fattened on the skimmed milk or whey produced in the factories for dealing with milk in those areas.

18. This distribution is of special importance when compared with that of the human population, the bulk of which lies in a belt

\* This figure represents the total imports of sheep and lambs for food, less 8,000, which is the estimated import of store sheep as given in "the agricultural output and food supply of Great Britain." The external trade in sheep and lambs of Northern Ireland has been ignored.



joining London and Lancashire. To this area must be added the subsidiary centres of population situated in south Wales, on the north-east coast of England and between Edinburgh and Glasgow. The rest of Great Britain, apart from a few large towns, is not heavily populated. Broadly, therefore, it will be seen that the counties producing the greatest number of cattle for slaughter are, with the exception of Norfolk and Aberdeen, situated between a number of consuming centres. The counties producing the greatest number of sheep for slaughter are, however, generally remote from the more populated districts. These facts are of considerable importance in determining the most desirable situation for slaughtering centres, to which we refer later (paragraph 147).

#### **(b) The marketing of animals for slaughter.**

19. The buyers of fat cattle are local butchers, agents for wholesale and retail butchers and independent dealers, who buy and sell according to their view of the trend of the market. The first two classes call for no special comment, as they have an assured outlet for their purchases. The position of the independent dealer is less clear. It is his function to direct supplies to those markets where the demand for them is greatest, and to even out temporary irregularities of supplies. In so far as he is successful, he performs a useful function. It by no means follows, however, that he always performs it in the best way. The quality of cattle is impaired by frequent moving from market to market, but it is difficult to see how else the dealer is to carry on his trade. Sales of cattle are made either on the farm direct to dealers and butchers or at markets. Markets are now largely carried on by auction, though sales by private treaty still take place. It is now compulsory for all cattle to be weighed before auction, but bidding is generally per head and only occasionally per hundredweight live-weight. A certain number of cattle are consigned by farmers direct to butchers on the understanding that they receive so much per lb. deadweight. This form of sale is very satisfactory, where confidence exists, but it is clearly impossible between farmers and butchers who are not known to one another. Cattle are generally moved alive to the ultimate point of consumption, though the trade in meat from Aberdeen and Birkenhead forms an important exception to this rule. In other words, slaughter at present takes place very largely in centres of consumption.

20. Sheep are sold to local butchers, wholesalers' agents, dealers and dealer slaughtermen. The latter in some cases own local slaughterhouses, and in others use the railway killing yards. They distribute meat to the different centres of consumption. The wholesaler operating in the consuming centre is, consequently, a less important figure than in the cattle trade. The reason for this difference is that it is cheaper to carry sheep dead than alive, whereas in the case of cattle it is generally cheaper to carry them alive than



dead. The dealer slaughterman is most in evidence in the south-western counties. As in the case of cattle, sheep are sold both at markets and on the farm.

21. Pigs for the pork trade are generally disposed of through dealer slaughtermen, who themselves buy either from higgler or through agents or direct. Some operate in the exporting areas, *e.g.*, in the west of England, and others concern themselves with supplying the needs of particular towns.

### (c) Slaughtering in England and Wales.

22. Slaughtering is conducted in England and Wales either in public or private slaughterhouses. The former are the property of the local authority of the area concerned. The latter, which are of many types and vary greatly in efficiency, are usually the property of individual retail butchers. In some cases, however, they are owned by co-operative societies or large companies.

23. There are about 16,000 private slaughterhouses in England and Wales. No direct information as to the number of butchers' shops is available, but the number of proprietors and managers of retail butchers' shops is given in the census of 1921 as 37,366. Thus, nearly half the existing retail butchers have a slaughterhouse in connection with their businesses.

24. A privately-owned slaughterhouse in England and Wales may only be used if it holds one of three qualifications. It must either be (a) registered, or (b) hold a licence without limitation of time, or (c) hold a licence for a limited period, usually one year. Registered slaughterhouses are those which have been continuously in use from the date when the relative provisions of the Towns Improvement Clauses Act, 1847, came into operation in the area. The right to slaughter in registered slaughterhouses is attached to the premises and is independent of the occupier. Slaughterhouses hold a licence without limitation of time if they were first used after the critical date referred to above, but before the provisions of the Public Health Act Amendment Act, 1890, came into operation. In law licences of this kind strictly attach to the premises and the occupier jointly and lapse on the termination of the occupier's interest in the property. In fact, however, these licences have, we understand, been treated by local authorities as though they related to the premises alone. Premises first used for slaughtering after the adoption by the local authorities in question of the provisions of the latter Act have only an annual licence. Of the 16,000 private slaughterhouses in existence, approximately 9,000 are registered, the remainder being either licensed without limitation of time, or holding an annual licence.

25. We estimate that the number of animals killed annually in private slaughterhouses is about 9,500,000 head.\* This figure

\* For particulars showing how this figure is arrived at, see paragraph 30, Table 6, in which the total is divided among different classes of animals.



excludes pigs killed in bacon factories,\* although these also are technically private slaughterhouses. This gives an average kill of about 12 head a week, i.e., one beast, one calf, six or seven sheep and three or four pigs. In interpreting these average figures it must be remembered there is great variation in the extent to which private slaughterhouses are employed. In many cases the owner normally kills his animals in a public slaughterhouse and only maintains his private slaughterhouse for use on exceptional occasions. On the other hand, there are a number of quite large private slaughterhouses. For example, the slaughterhouse at Birkenhead, which is owned by the Mersey Docks and Harbour Board, is one of the largest in the country, having a yearly kill of 73,244 beasts in 1928, though this fell to 54,543 in 1930. It is operated in exactly the same way as a municipally-owned slaughterhouse. There are, in addition, several slaughterhouses owned by railway companies, used for the killing of sheep in the exporting areas, with an annual kill of between 25,000 and 50,000 head. Some of the co-operative societies, in particular, the London Co-operative Society, the Leeds Co-operative Society and the Leicester Co-operative Society, have well-equipped slaughterhouses of their own. In some towns which have no public slaughterhouse there are slaughterhouses belonging to wholesale dealers, having a fairly large kill. The fact that most private slaughterhouses are small buildings with little or no specialised equipment should not be allowed to obscure the existence of a class of private slaughterhouses consisting of buildings specially built for the purpose they serve, which might lose a substantial part of their value if they had to be adapted for other purposes.

26. There are 115 public slaughterhouses in England and Wales, excluding a number of small slaughterhouses of which there is no detailed record available. The majority of the larger towns have established slaughterhouses, the most important exceptions being Bristol, Hull, Newcastle, Nottingham, Leicester, Portsmouth and Plymouth. Of these, Nottingham, Leicester and Portsmouth are contemplating doing so. Among the towns of under 100,000 inhabitants, those which have no public slaughterhouses are in a substantial majority. As might be expected, the greater part of the kill takes place in the larger slaughterhouses, the four largest (Birmingham, Liverpool, London and Manchester) accounting for half the total and the nine largest (the above, together with Blackburn, Bradford, Cardiff, Leeds and Sheffield) accounting for two-thirds of the total. Of the remainder, a great many are very small, as may be gathered from the following table (Table 5) showing the distribution,

\* On the basis of the figures published in the final Report of the Third Census of Production of the United Kingdom, 1924, and of the fourteenth preliminary Report of the Fourth Census of Production, 1930, the number of pigs killed in bacon factories may be estimated at approximately 1,250,000 in 1930. In the year 1928-29, a year of higher production, we estimate the number killed at 1,500,000.



by sizes, of those slaughterhouses about which we have obtained some information from the Ministry of Health and other sources :—

TABLE 5.

*Distribution of public slaughterhouses by size of kill of all animals in England and Wales.*

	Number of slaughterhouses.
Annual kill between 0 and 5,000 ...	29
Annual kill between 5,000 and 10,000 ...	18
Annual kill between 10,000 and 50,000 ...	46
Annual kill over 50,000 ...	12
<hr/>	
Total ...	105*

The kill of the 15 largest public slaughterhouses are given in appendix 2 (Table 5).

27. Public slaughterhouses are not municipal enterprises in the same sense as are, for example, municipal electric supply services or tramways, where the municipality both owns and operates the undertaking. In the case of slaughterhouses, the municipality owns the building in which the undertaking is carried on and is also responsible for certain essential services such as cleaning, cold storage and the provision of hot water. It has, however, no other control over the operation of the undertaking. The private butchers kill as and when they choose, subject to the ordinary hours of opening of the slaughterhouse. They employ what labour they like, and use the building or not at their pleasure. A so-called public slaughterhouse is, therefore, nothing more than a collection of private slaughterhouses, set up by a local authority, largely because it renders meat inspection more effective. Indeed, the local authorities are under the necessity of inducing the butchers to use public slaughterhouses by offering slaughtering facilities at an uneconomically low price.

28. The revenue of a slaughterhouse is derived principally from the fees levied on the lairage and slaughtering of beasts. In addition, an income is derived in some cases from the letting of space to firms of by-product manufacturers and dealers. The expenditure on cleaning and similar services and loan charges generally exceeds these receipts and the deficit is made up from the rates.

29. Public slaughterhouses vary greatly in age, size, equipment and efficiency. There are two main plans on which they are built. The older and more unsatisfactory is for the slaughtering hall to be divided into a number of stalls so that each butcher may work

\* For 10 slaughterhouses of the 115 mentioned above, we have no information. They are probably small. Of the remainder, the actual figures of kill are not available in the case of 28. These have been classed according to the receipts of the slaughterhouse. Newcastle and Derby are excluded.



independently. Under the open hall plan, there are no divisions between butchers' stands. Though they work independently of one another, they do so in one room. The Ministry of Health favour the latter plan, as being both cheaper and as providing better facilities for inspection.

30. In 1929 some 3,600,000 head of animals were slaughtered in public slaughterhouses in England and Wales. According to information supplied to us relating to 40 slaughterhouses slaughtering 2,775,000 head, the total kill was divided among the different classes of animals in the following proportions :—

	Per cent.
Beasts ... ..	14·4
Calves ... ..	7·1
Sheep and lambs ... ..	63·9
Pigs ... ..	14·6
	<hr/>
	100·0

By applying these percentages to the total kill in public slaughterhouses we have constructed the following table, showing the distribution of slaughtering between public and private slaughterhouses in England and Wales.

TABLE 6.

*\*Estimated distribution of slaughtering between public and private slaughterhouses in England and Wales in 1928-29.*

(Figures in thousands.)

—	Number killed in public slaughterhouses.	Total kill, England and Wales.	Percentage killed in public slaughterhouses.
Beasts ... ..	520	1,798	29
Calves ... ..	255	987	26
Sheep and lambs... ..	2,300	7,583	30
Pigs ... ..	525	2,916	18
Total ... ..	3,600	13,284	27

\* The figures for the total kill in England and Wales are arrived at as follows: To figures of number sold off the farm are added the total importations of live animals for slaughter into Great Britain. The number of pigs estimated as being slaughtered in bacon factories is then deducted from the figures for "pigs." In Table 7 somewhat similar figures are given for Scotland. There is a deficiency of 2,000,000 in the figure for sheep slaughtered in Great Britain, as compared with the figure for sheep sold off the farm or imported for slaughter. Presumably the sheep unaccounted for are moved from Scotland to England alive either as stores or for slaughter. The discrepancy may, however, be due, in part, to our estimate of the annual production of sheep in Scotland being excessive.



31. It is difficult to estimate how large a proportion of the population lives in towns which might be served by public slaughterhouses, or how large a proportion of the total home-killed meat they consume. Approximately half the population of England and Wales lives in towns of over 50,000 inhabitants, and about two-thirds of it in towns of over 20,000 inhabitants. If it is held that all towns of 20,000 inhabitants or over should be supplied from a public slaughterhouse—and this is the practice in some foreign countries—then less than half the meat which under the present practice might be killed in public slaughterhouses is now so killed.

#### (d) Slaughtering in Scotland.

32. In Scotland, public slaughterhouses are of much greater relative importance than in England. For this result the more favourable legislation is in part responsible, and in part the greater enthusiasm with which the local authorities and the trade have approached the problem. Nearly all burghs, even those with as small a population as 1,000 and 5,000 persons, have a public slaughterhouse. Of the 153 public slaughterhouses in Scotland, 129 are situated in burghs and 24 in counties. In only 49 burghs are there private slaughterhouses, and of these the majority have a population of under 2,000. The only large towns in which private slaughterhouses exist are Aberdeen and Clydebank. In the former, slaughtering is confined to the members of the Aberdeen Fleshers' Incorporation, a body owning two large slaughterhouses of its own. In the latter, there is only one slaughterhouse, which is owned by the local co-operative society.

33. Scottish local authorities enjoy a great advantage over local authorities in England and Wales by reason of the provisions of the Burgh Police (Scotland) Act, 1892. Under that Act, where any town council has established a slaughterhouse no other premises may be used for that purpose within the burgh, nor need any compensation be paid for the consequent closing of private slaughterhouses. This relieves local authorities from any financial anxiety when they wish to establish a public slaughterhouse.

34. It must not be supposed that a public slaughterhouse in a small town is an elaborately equipped building, with perhaps a by-product conversion plant and cold storage. Such things are only found in large slaughterhouses, *e.g.*, those at Edinburgh and Glasgow. The small public slaughterhouse is a plain building, generally open no more than two or three days a week, supervised by an officer of the local authority, and established solely in the interests of public health.

35. In the county areas, slaughtering is still largely carried on in private slaughterhouses. Of these, there are 431 which are licensed. There are, in addition, many small unlicensed premises occasionally used for slaughter, situated mainly in highland and island areas. The



provision in the Act of 1892 that no private slaughterhouse may be used in a district where a public slaughterhouse has been opened does not apply to county areas. This is said to have deterred a certain number of local authorities from building one.

36. In addition to the slaughterhouses which mainly concern themselves with slaughtering for local consumption, there are in Scotland a certain number of slaughterhouses which are largely used for killing for the export trade to England. The chief slaughterhouses supplying beef for the important trade with London are the two which belong to the Aberdeen Fleshers' Incorporation, and the public slaughterhouse at Inverurie. There are also a number of slaughterhouses, some private, some municipal, from which a considerable export of mutton takes place to London, and in some cases to Glasgow. These export slaughterhouses draw their supplies not only from the surrounding country, but also from those districts in the neighbourhood which would in any case have to send their meat through the town in question.

37. The proportion of the total meat consumed which is killed in public slaughterhouses is much higher in Scotland than in England and Wales. The Department of Health for Scotland estimated a few years ago that 92 per cent. of the home-killed meat consumed in Scotland came from public slaughterhouses. In a memorandum submitted to us by the Department of Agriculture for Scotland, figures were given of the number of animals killed in 150 public and 502 private slaughterhouses respectively, which may be taken to cover all slaughtering in Scotland. The figures given in respect of both categories include animals slaughtered for export to England, and are therefore not comparable with the figures on which the Department of Health's estimate was calculated. Even so, as will be seen from the following table (Table 7), the percentage of killings in public slaughterhouses remains much higher than in England and Wales.

TABLE 7.

*Distribution of slaughtering between public and private slaughterhouses in Scotland in 1928-29.*

(Figures in thousands.)

—	Numbers killed in public slaughterhouses.	Total kill in Scotland.	Percentage killed in public slaughterhouses.
Cattle (including calves) ...	342·5	447·0	77
Sheep and lambs ...	1,093·0	1,464·0	75
Pigs ...	105·6	143·1	74
Total ...	1,541·1	2,054·1	75



## (e) Concentration of killing during part of the week.

(i) *Causes of the present practice.*

38. The killing in public slaughterhouses is distributed very unevenly over the week. In general, killing is very much heavier on two or three days than during the rest of the week. For this, there are a variety of reasons depending on the local peculiarities of demand. At Islington, for example, the trade in kosher-killed meat is of predominant importance. The laws which govern the consumption of meat by members of the Jewish faith are numerous and strict. Because of them, the greater number of the animals slaughtered at Islington are killed between Saturday night and Monday morning. For the greater part of this time, it should be observed that non-Jewish butchers who prepare the carcasses are able to demand overtime rates of pay. In general, the retail demand for meat is heaviest from Thursday to Saturday. As a result, killing is apt to be concentrated in the earlier part of the week, more particularly on Monday, so as to allow sufficient time for the meat to hang before being consumed.

39. There are a number of reasons which prevent the butchers from holding their meat long enough to even out the rate of killing. First, it is not in all cases possible to do so, because the chilling\* accommodation is sometimes inadequate, *e.g.*, at Islington. In support of this contention, we are informed that where sufficient chilling accommodation has recently been provided, as at Sheffield, there has been a distinct improvement in the regularity of killing. Secondly, even where chilling accommodation is provided, butchers are sometimes unwilling to use it. Storage is costly, not only because the butcher has to pay the charges made by the slaughterhouse for the provision of accommodation, but also because the meat loses weight through evaporation, a loss which the butcher himself must bear. In addition to the direct expense of storing meat, butchers appear, in general, to be apprehensive lest meat that has been held in cold store for any length of time may deteriorate in respect of those characteristics which ensure for British meat a higher price than is paid for meat imported from abroad. This point is of considerable importance and we return to it later in our report (paragraphs 117-120). Here it is only necessary to say that we do not share these apprehensions. Thirdly, we may refer to the Jewish rule that forbids the consumption of meat killed three or more days previously, except after the performance of a rite which includes sprinkling the meat with water.

40. Finally, where it is still the practice for retail butchers to use the same labour both for work in the shop and as slaughtermen, the fact that selling is concentrated in one part of the week makes it desirable to slaughter in the remainder.

\* There is considerable confusion in the trade as regards the use of the words cooled, chilled, frozen, and so on. This matter is discussed at length in a subsequent paragraph (paragraph 119).



(ii) *Reactions of the present practice on the conditions of employment.*

41. The irregularity of slaughtering described above has led to a system of employment that is not calculated to promote the most efficient use of labour. In the slaughterhouses where the wholesale butcher is responsible for the greater part of the killing, labour is usually provided by gangs of journeymen butchers, under the leadership of a foreman, who undertake the slaughter and preparation of carcasses at a collective rate of so much a head during the week, with an increased rate during hours for which overtime would normally be paid. These gangs work generally only for one wholesale butcher, though they are free to undertake work for anyone. They are not employed by the day and they offer themselves for employment or not at their own pleasure. They are, in fact, casual workers, but being highly skilled, they are not subject to the risks of an overstocked labour market to the same extent as are, for example, dock labourers.

42. There are two objections to this method of employment. In the first place, as there is no inducement to the employer to even out his work throughout the week, it leads to an unnecessarily variable demand for labour. In the second place, it calls into being an unnecessarily large reserve of labour to meet these variations. The normal week worked by a gang in good employment is short compared with that common in other occupations. We understand that it amounts to no more than 34 hours. If members of such gangs are to earn a wage which will secure for them a standard of living appropriate to their considerable skill the hourly rate must consequently be disproportionately high. Small variations in employment are in most occupations met by regular employees working rather longer hours than are usual, at a higher rate of remuneration. But where the hourly wage rate is higher, and the variability of work greater than is customary there is a tendency for a fringe of under employed workers to come into existence to meet these minor irregularities in the demand for labour, and this is indeed true of the slaughtering trade. Though workers regularly employed earn a fair wage, there are plenty of men whose expectation of employment is uncertain and who are not in a position to earn a decent living. The trade union witnesses who appeared before us were fully aware of the undesirability of the present state of affairs and we gather would welcome a policy which led to the abolition of the evils associated with casual employment provided the standard of living of their members is adequately secured.

**(f) The wholesale trade and wholesale meat markets.**

43. The wholesale trade is confined to the larger towns, but in these it is one of growing importance. Its first function is to supply the needs of those retail butchers who are not in a position to slaughter on their own account. The increasing importance of foreign meat has had the effect of turning a large number of butchers into mere distributors, unable to undertake the skilled work of slaughter. The second



function of the wholesale trade is to even out the varying demand of different retailers for different parts of the carcass. The variation in individual demand arises from the fact that, as they confine themselves to one class of trade, retail butchers do not sell the different cuts in the same proportion with equal ease. Unless there is some channel through which they can be supplied with those cuts for which their customers' demand is in excess of the average, they can only dispose of those for which their customers' demand falls short of the average by selling them at a reduced price.

44. In the larger towns, the growth of the wholesale trade has led to the establishment by the municipal authority of a wholesale meat market, where the different cuts are dealt in. There are two classes of wholesalers who make use of the public slaughterhouse and meat market; first, the carcass butcher, who himself buys live animals and sells meat, and secondly, the commission slaughterman who receives cattle on account of farmers or dealers, undertakes their slaughter and sale and returns the price made, less expenses and commission, to the original owners. In towns where there is no public slaughterhouse, wholesalers own and operate their own slaughterhouses.

#### (g) The treatment of by-products.

45. By-products arising from slaughtering fall into two classes. Some are so valuable that almost all butchers make some effort to dispose of them. The remainder are often not utilised, as the cost of collection, together with the deterioration in quality (and consequently loss of value) due to improper treatment, often renders their utilisation unprofitable. In the first class fall hides, skins and fats. In the second such products as blood, guts, bones, glands, and the like.

##### (i) *Hides.*

46. There are in this country some 130 markets, through which the great bulk of home-produced hides are passed. These markets are privately-owned enterprises in which individual butchers are in many cases shareholders, and compete with one another for supplies. They are at present necessary intermediaries between the butcher and the tanner. For the tanning industry in this country is highly specialised and individual tanners are only in a position to buy hides from two or three of the 40 or more classes into which the home output is divided. The functions of the markets are to collect, to weigh, and to class hides and to hold auctions or sales which are attended by representatives of the tanners or of the important buying associations into which the latter are organised. The markets may deal directly with individual butchers and wholesalers or they may receive their supplies from the collectors of other slaughterhouse by-products, such as fats, skins, bones and intestines. In some cases hides are bought outright,



in others they are sold on commission, the amount of which varies from five to ten per cent., according to the degree of competition and the expenses of collection.

47. In order to preserve the accuracy of classing and weighing and to prevent the disorganised peddling for hides which under the present conditions of slaughtering is a constant danger, the great majority of tanners have bound themselves to buy their supplies only from markets which are registered by the Hide, Leather and Allied Trades Improvement Society. The hide markets, on their side, submit to certain regulations regarding classification, weight and inspection, laid down by that society.

48. The disadvantages of the present system arise from the fact that there are too many markets in existence, which not only increases the buying costs of the tanners, who may have to obtain their requirements from as many as 20 or 30 sources, but also leads to considerable overlapping in the areas from which the supplies are drawn. This in turn results in collecting lorries being only partly loaded and in unnecessarily heavy charges.

49. The treatment of this important by-product is still less satisfactory, the standard of flaying, except in the larger public slaughterhouses, leaving much to be desired. The classification of a hide depends on a number of factors, including the skill with which it has been taken off and the extent to which it may have been damaged by warble fly. With the serious loss arising from the latter source we are not directly concerned. A large part of this loss could be prevented and we think it important that the Departments of Agriculture should do all in their power to reduce the ravages of this pest. But the loss on account of flaying is also extremely heavy. Some 40 per cent. of the available hides are classed as "seconds," merely because of careless or inexperienced flaying. The consequent annual loss to the country was estimated by a witness, even at present prices, to be £125,000. Again, insufficient attention paid to the treatment of the hides leads, especially in summer, to considerable deterioration in their leather-making properties. For example, they are sometimes dragged through the blood and filth, which, in many cases, is to be found even in public slaughterhouses, or they are not adequately salted as they should be so soon as they are cool.

#### (ii) *Skins.*

50. Calf and sheep skins are partly handled by the same markets which deal in hides. But quite a considerable proportion of the total output is either bought directly by fellmongers from butchers and wholesalers, or indirectly through local collectors, and does not pass through a market. Nor in their case is there anybody like the Hide, Leather and Allied Trades Improvement Society to regulate the conditions of trade. Fellmongering, or the removal of the wool from



the pelt, is in this country carried on either by specialised firms or by tanners themselves. In the large packing-houses abroad this operation is generally carried on by a department of the slaughterhouse. Cleanliness in the treatment of the skin is even more important than in the case of hides, and is, unfortunately, no more in evidence. Nor, although flaying may be much more easily effected without damaging the pelt, are the losses through carelessness any less.

(iii) *Fats.*

51. The three principal products arising from the melting of fat are oleo oil, which is the most valuable, stearine and tallow. The proportion of oleo oil which any given quantity of fat will produce depends upon the treatment it receives. It should be kept clean and it should be melted as soon as possible after slaughter. We understand that British oleo oil is deficient both in quality and quantity. In addition, and this is of perhaps even greater importance, the standard of quality achieved is not uniform. For this, the method of collection and treatment is to blame. Fat is rarely treated at public slaughterhouses, and of private slaughterhouses only the largest and most efficiently equipped are in a position to undertake this work. The fat which is not treated directly at the slaughterhouse, together with the shop fat collected from butchers' premises, is bought by the fat melters. Of these, there is a large number. The collection of fats from small slaughterhouses is at present quite unorganised.

(iv) *Other products, except glandular products.*

52. With the less valuable by-products it not infrequently happens that in unfavourable circumstances the cost of collection is prohibitive and the product is entirely wasted. At Islington, for example, no use is made of blood, trimmings or manifolds, as owing to the lack of facilities at this slaughterhouse it would not be possible to collect these commodities and show a profit. In other public slaughterhouses, however, where conditions are more favourable, the blood is collected and dried on the premises. Blood is collected from private slaughterhouses by some manufacturers, but its value is so low that it cannot be collected from a distance. Rops, or guts, are often treated on the premises at public slaughterhouses, either by the butchers themselves or by a firm of contractors. In both cases, the value at the factory is much greater than the sum paid to the butcher, the difference representing the cost of collection. The value to the factory is, moreover, often further reduced owing to the unnecessary deterioration of these products between the time of slaughter and the time of manufacture. Turning to private slaughterhouses, we find a still wider divergence between the price which the product should command and that which the butcher actually receives. We were told, for example, that a butcher slaughtering in a private slaughterhouse would not receive more than 3d. a set for his rops, though the factory



may pay as much as 2s. a set, a figure itself substantially less than would have been paid if the rops were delivered in proper condition. In short, the efficient utilisation of by-products requires concentration of production and immediate treatment. In Great Britain the conditions of ownership and slaughter are such that the butcher, owning a small private slaughterhouse, receives little or nothing for his secondary products. He sells them for a quite nominal price, either directly to a small manufacturer, who specialises in the working up of these products, or to an even smaller dealer who collects raw material for the manufacturer. This method of collection is sporadic, disorganised and expensive. The quality of the stuff collected leaves much to be desired. In public slaughterhouses, though collection is generally rather cheaper, the position is not satisfactory. The fact that it is not profitable to utilise blood, for example, in any public slaughterhouse is in itself a condemnation of the methods employed.

#### (v) *Glandular products.*

53. We have given considerable attention to the question of glandular products, on the ground that these are a source of revenue to the larger packing-houses abroad, and even to some of the large continental public slaughterhouses, while in this country they are almost entirely neglected. Most of these glands must be removed by a skilled assistant at a given time after slaughter; in some cases this must be done within a quarter of an hour. After removal they must be treated at once. If all this is to be done, a large number of animals must be slaughtered at a time, and the internal organisation of the slaughterhouse must be very complete. The conditions under which animals are slaughtered in Great Britain to-day render the cost of collection prohibitive. A few glands are, indeed, bought, but no regular trade can be expected to grow up in present circumstances, and the absence of adequate supplies is even an obstacle to the progress of research. Considerable quantities\* of glands are imported regularly in a semi-manufactured condition from the United States and elsewhere. These supplies could be obtained in this country if there were adequate facilities in our slaughterhouses. The existence of this expensive import trade indicates also that the British product would easily find a market. The present situation is the more to be deplored as the establishment in this country of such highly-skilled trades as that in the finer pharmaceutical products is, on general grounds, very desirable.

#### (h) *Municipal destructor plants.*

54. Many local authorities take steps to recover valuable material from the waste arising in the process of slaughter. But a

\* The actual figures are not obtainable, as they are not separately recorded under the present classification of foreign trade.



public slaughterhouse is not the only source of organic waste in a town, and in considering the problems which confront a local authority in arranging for its treatment, regard must also be had to other sources. These are condemned food, principally fish, the waste from butchers and other shops and dead cats and dogs. In small towns, it is generally convenient to concentrate the treatment of all this material in one plant. Where this is done, there are two very strong reasons why the necessary plant should be built near the destructor plant rather than in the slaughterhouse. In the first place, it is clearly undesirable in the interests of public health to bring miscellaneous refuse into the slaughterhouse. Secondly, there is generally waste steam already available at the destructor, which may be used in the treatment of organic matter. It is consequently more common for the disposal of slaughterhouse waste to be left in the hands of the cleansing department than for a utilisation plant to be installed at the slaughterhouse. As the size of the municipality increases, the advantage of this concentration disappears. It is possible to instal plant for more specialised purposes. The destructor plant, &c., is exclusively designed for the convenience of the cleansing department and the slaughterhouse should be equipped with its own machinery.

**(i) The provision of public slaughterhouses as a function of local authorities.**

55. Local authorities have been eager in the past to establish slaughterhouses in the areas under their control in the expectation that by doing so they would be making a contribution to the improvement of public health. There are two respects in which the private slaughterhouse is a potential danger. In the first place, as a building, it may be insanitarily kept. The large quantities of waste material arising from slaughter may not be properly disposed of, but may remain to be a breeding ground for flies and a centre of putrefaction. In the second place, the proper inspection of meat in private slaughterhouses is difficult and expensive. In England and Wales, there is no provision that an inspector must be present when an animal is to be killed, nor is the notice of three hours required to be given before slaughter sufficient to make it probable that he will be present. Even to-day the cost of inspection is high and it would be much higher if private slaughterhouses were inspected as efficiently as are public slaughterhouses. In Scotland, slaughter may only take place at fixed times, except in special circumstances, in which case 24 hours' notice of the intention to slaughter must be given. These provisions make the organisation of inspection easier and less costly. Generally, however, it remains true all over the country that inspection of carcasses killed in small slaughterhouses is expensive, and relatively inefficient.

56. Another motive which has influenced local authorities in the erection of slaughterhouses has been the desire to establish a municipal meat market. A meat market is held to be a factor making for the



cheaper and more efficient distribution of meat, and is, therefore, in the general interests of the inhabitants of the town. In addition to this, it is generally a source of revenue to the municipality. These markets are invariably associated with a municipal slaughterhouse. Although their independent existence is clearly possible, such markets must necessarily work much more smoothly if associated with a single slaughterhouse. This being so, local authorities are prepared to incur a loss on the slaughterhouse in the hope that it will be made up on the market.

57. Almost without exception, public slaughterhouses in England and Wales are a burden on the rates. The Ministry of Health in a memorandum submitted to us gave the figures, given in the following table (Table 8), which were arrived at from an examination of the accounts of the local authorities (other than the Corporation of the City of London), which make separate returns of their slaughterhouse finances.

TABLE 8.

*Receipts and expenditure of public slaughterhouses making separate returns to the Ministry of Health.*

Year.	Expenditure, excluding loan charges.	Loan charges.	Total expenditure.	Receipts.	Balance of expenditure falling on rates.
	£	£	£	£	£
1925-26 ...	65,186	18,408	83,594	56,173	27,421
1926-27 ...	68,215	19,337	87,552	56,543	31,009
1927-28 ...	68,857	23,300	92,157	64,992	27,165
1928-29 ...	75,967	20,396	96,363	63,246	33,117

58. The foregoing table includes only two of the nine largest slaughterhouses referred to in paragraph 26 above. The explanation is that in the larger towns, the slaughterhouse is often run in conjunction with a meat market, in which case, no separate accounts are kept. These joint enterprises generally prove a profitable undertaking. It is, therefore, possible to argue that the above figures give an unduly depressing picture of the situation as a whole. The broad fact, however, remains that a slaughterhouse as at present conducted is likely to involve any local authority in a considerable loss. In 1929, only in nineteen out of the hundred and ten slaughterhouses publishing accounts are the total charges (both general and loan charges) covered by the revenue derived from the undertaking, and in sixty-nine even the general expenses (excluding loan charges) are not covered. The Islington slaughterhouse, which is not included in the above figures, costs the City Corporation about £20,000 a year. The reason given for these heavy deficits is that in order to achieve their object of attracting butchers into the public slaughterhouse in the interests of



public health, the local authorities are forced to charge uneconomically low rates for the services rendered. With regard to Scotland, where private slaughterhouses are automatically closed in the burghs on the opening of a public slaughterhouse, the position is considerably more satisfactory. The following table (Table 9) shows the receipts and payments (including debt charges) by the 137 county councils and town councils in Scotland which operate public slaughterhouses.

TABLE 9.

*Receipts and expenditure of public slaughterhouses in Scotland.*

Year.				Expenditure.	Receipts.	Balance of expenditure falling on rates.
				£	£	£
1925-26	...	...	...	114,041	108,192	5,849
1926-27	...	...	...	118,203	103,828	14,375
1927-28	...	...	...	123,256	114,685	8,571
1928-29	...	...	...	124,337	115,601	8,736

It will be observed that the percentage of the total expenses covered by receipts averages about 92 per cent., whereas in England and Wales the corresponding figure is approximately 67 per cent.

59. It would be outside our terms of reference to discuss whether the expenditure of money from the rates to make good deficiencies incurred in the operation of slaughterhouses is justified on grounds of public health. Here we are only concerned to point out that, in the opinion of many local authorities, and presumably also in that of those whom they represent, some form of centralisation of slaughtering is desirable and worth paying for, quite apart from any economic considerations.

### III.—SLAUGHTERING PRACTICE ABROAD.

#### (a) The continental system.

##### (i) INTRODUCTORY.

60. There is considerable similarity in the methods of organisation of slaughtering adopted by most countries on the continent of Europe. Consequently, before we summarise the special information which has been obtained for us by the Department of Overseas Trade, relating to Germany, France, Holland and Sweden, we indicate below the main characteristics of what may be described as the continental



system. Broadly, three important types of slaughterhouse may be distinguished.

(a) *Municipal slaughterhouses.*

61. As in Great Britain, municipal slaughterhouses, though owned by the local authority, are only operated by them to the extent of inspecting animals before and after slaughter, cleaning and maintaining the building, providing hot water and operating the refrigerating plant. The actual operation of slaughter is carried out either by employees of wholesale or retail butchers, or by independent journeymen butchers working on behalf of the owners of the animals slaughtered. The slaughterhouse is often run in conjunction with a cattle market and meat market. Usually no other slaughterhouses are permitted to operate in a district served by a municipal slaughterhouse.

(b) *Small private slaughterhouses.*

62. Small private slaughterhouses generally only exist in towns where there is no municipal slaughterhouse and in country districts. Meat from private slaughterhouses in country districts may, and does, compete with that from municipal slaughterhouses in large towns, though it is generally subject to some fee for inspection on arrival in the town.

(c) *Export slaughterhouses.*

63. Export slaughterhouses, often co-operatively owned, are of considerable importance in certain districts of some countries, especially those which export pig products to this country. Unlike slaughterhouses of other types, these are often used for the production of only one kind of meat, generally bacon. They are, in most cases, subject to some form of State inspection.

64. Slaughterhouses of a fourth type, namely, large privately-owned slaughterhouses producing for the home market, exist but are rare. The only examples of this type which have been brought to our attention are in Germany, and include a slaughterhouse owned by the *Gross-Einkaufs-Gesellschaft*, the German equivalent of the Co-operative Wholesale Society.

65. Thus, the continental system is very similar in its essentials to that which prevails in this country. The main difference between them, or rather between the English and the continental systems—for in this respect the Scottish practice is similar to the continental—is that the continental municipal slaughterhouse has a monopoly of slaughter in the area which it serves. In Europe, as in this country, the establishment of municipal slaughterhouses has been effected on grounds of public health and of ease of inspection. Economic motives have played a secondary part.



## (ii) GERMANY.

66. The existing laws relating to slaughtering in Germany have been based on sanitary and veterinary considerations. At present three types of slaughterhouse exist, viz. :—

- (1) private slaughterhouses owned by retail butchers.
- (2) large private slaughterhouses owned by meat-product factories and co-operative societies.
- (3) public slaughterhouses, the use of which is compulsory, owned generally by municipalities, but occasionally by butchers' guilds.

67. Municipal slaughterhouses exist in all the larger towns. In all some 670 have been built. The municipalities themselves neither own the stock nor employ the men engaged upon slaughter. Both these functions are performed by private traders, in the larger towns by wholesale butchers, elsewhere by retail butchers. The only offals generally retained by the authorities owning the slaughterhouse are such blood and fat as are lost in the killing process and parts needed for veterinary examination. No compensation is paid for these, but receipts from the sale of confiscated parts are sometimes set off against the fees collected by the public slaughterhouse. Other offals, *e.g.*, entrails, blood and fats, are the property of the owners of the animals and are generally sold to specialist dealers and factories. Such factories are sometimes owned by local butchers' associations or butchers' guilds. There exist co-operative sales organisations for dealing with hides. The charges made by municipal authorities for the use of their slaughterhouses are limited by the provision that no profit may be made by the concern.

68. An interesting development in Germany has been the rise of agricultural co-operative societies, which undertake the sale of the output of livestock from a whole district. These societies have entered into agreements to provide the livestock required by certain of the larger slaughterhouses in the important centres of consumption.

## (iii) FRANCE.

69. The information we have obtained from France relates primarily to the city of Lyons, where a large and well-equipped slaughterhouse has recently been opened. All private slaughterhouses within that city have been closed, though a number still exist outside from which meat is sent into the city for sale. Such meat is subject to a fee for inspection.

70. There is a cattle market adjacent to the slaughterhouse, but it is not obligatory on those using the latter to obtain their animals from this source. Owners of cattle make their own arrangements for slaughter either with their own employees, or with the independent slaughtermen who work at the slaughterhouse. The municipal



authority has no dealings either in live or dead stock or in offals, but is responsible for the smooth working of the slaughterhouse and observance of the rules made in the interests of public health.

71. The equipment of the slaughterhouse is very complete and includes adequate cold storage room both for carcasses and for the products of the tripery. The latter department is properly equipped and is let out to firms of tripe cleaners. In general, the slaughterhouse is planned so that the movement within the factory shall be as simple as possible and always in one direction.

72. There are a number of large municipal slaughterhouses in France. At the slaughterhouse at Lyons nearly 420,000 head of animals of all kinds were slaughtered in 1930; of which 56,600 were bullocks. In the *Abattoir de la Villette* in Paris 1,972,000 animals were slaughtered in 1929, of which 300,000 were fat beasts.\*

#### (iv) HOLLAND.

73. The question of slaughtering in Holland has always been considered from the hygienic point of view. All municipalities with 20,000 inhabitants or more (except only three) have municipal slaughterhouses. In addition, municipal slaughterhouses also exist in many smaller towns, the total number being 76. The law lays down minimum requirements both for public and private slaughterhouses. The consent of the municipal authority concerned is also required before a private slaughterhouse can be established. Separate systems of inspection are in operation for slaughterhouses producing for the home and for the export market.

74. Export slaughterhouses, which are not infrequently specialised bacon factories, are sometimes municipally owned, but are more often in private hands, the ownership in many cases being co-operative. Such export slaughterhouses are often of quite considerable size. There are, however, no large private slaughterhouses working for the supply of the home market. The greater part of meat for home consumption is slaughtered in municipal slaughterhouses.

75. Animals slaughtered in public slaughterhouses, both for home or foreign consumption, remain the property of private traders, while co-operative and other private slaughterhouses actually own the animals passing through their hands. Private butchers, when using

\* Comparable figures for the five largest public slaughterhouses in Great Britain in the year 1929 were as follows:—

	No. of beasts slaughtered.	Total no. of animals slaughtered.
Birmingham ... ..	46,678	446,812
Glasgow ... ..	75,974	445,241
Liverpool ... ..	30,135	462,279
London ... ..	58,526	333,786
Manchester ... ..	68,510	535,506



public slaughterhouses, either employ their own regular slaughterers or hire independent slaughterers for each killing.

76. Offals all remain the property of the owners of animals slaughtered, by whom they are generally sold to firms of specialist dealers. No public slaughterhouse undertakes the handling of offals. In the largest private export slaughterhouses there are scientific departments for superintending the manufacture of pharmaceutical products.

#### (v) SWEDEN.

77. The meat industry in Sweden is mainly concerned with production for the home market. The organisation of slaughtering has been largely influenced by the laws regarding meat inspection. Under these, in eight of the principal towns cattle may only be slaughtered in municipal slaughterhouses, while in these towns and some 90 others where there are no municipal slaughterhouses, meat must be inspected before being offered for sale.

##### (1) *Municipal slaughterhouses.*

78. Municipal slaughterhouses are in operation in the eight towns referred to above. The largest is at Gothenburg and had a kill of 110,226 head in 1929. The actual killing is not carried out by employees of the slaughterhouse, but by the owners of the animals or their servants, or by independent slaughterers. The latter, who form a kind of union, are responsible for the greater part of the killing in large towns. They make a fixed charge per head slaughtered.

79. The fees charged by municipal slaughterhouses cover the use of the slaughterhouse (though not the actual charge for killing) and the cost of inspection. Fees are also charged for the inspection of meat not killed in public slaughterhouses. In order to encourage the use of public slaughterhouses, the charge for simple inspection is fixed at a figure either equal to, or very slightly lower than, that for the full service.

80. Offals remain the property of the original owners. But the municipal authorities derive some income from the sale of tallow, fat, &c., obtained from animals and meat condemned by the veterinary officials, and from blood products.

##### (2) *Export slaughterhouses.*

81. There are 34 export slaughterhouses in Sweden. For the most part they are owned by co-operative associations of farmers. The largest, that at Tomelilla, had a kill of 71,614 in 1929, in which year 11 of them had kills of more than 20,000 head. They are predominantly concerned with the production of bacon. They are under the supervision of government inspectors, by whom all bacon is branded.



### (3) *Private slaughterhouses.*

82. Private slaughterhouses are usually owned by country butchers and by butchers owning shops in large towns, who bring in meat from country districts. Even in large towns, *e.g.*, Stockholm, considerable quantities of meat are brought in by country butchers.

### (b) *The American packing-houses.*

#### (i) *INTRODUCTORY.*

83. Whereas on the continent of Europe, the typical slaughterhouse is the large municipal slaughterhouse, so in North and South America it is the "packing-house" which calls for special attention. A packing-house is a large slaughtering unit operating for private profit, in which control of the operations of slaughter and ownership of the beasts slaughtered is in the hands of the owner of the building used. We give below a short description of what packing-house methods imply, and then summarise some of the information that we have received on the organisation of the meat industry in the Argentine, Brazil, and the United States.

#### (a) *Size of unit.*

84. Packing-house methods are associated with a large daily output. But it is, of course, impossible to indicate any definite point at which a slaughterhouse becomes a packing-house. With so small an output as, for example, 50 cattle a day, it is possible to adopt certain of the methods of the large packing-house, especially in so far as they relate to the treatment of by-products. On the other hand, the full economies of working cannot be achieved until the output has reached a figure of, perhaps, 3,000 cattle a day. It is probable that until a daily kill of between 300 and 500 beasts has been reached, the efficiency of the slaughterhouse improves steadily with its size. After that point, though the increase continues, it is less rapid, and when the kill has risen to about 1,500 it becomes unimportant. It is of even greater importance than large size that the plant should be operated as near as possible to its full capacity. In practice, the important meat packing concerns seldom operate plants with an output of less than 1,000 head of cattle a day (with corresponding figures for sheep and pigs).

#### (b) *Arrangement and operation of plants.*

85. The capacity of a plant is measured by the number of beds or winches which it contains. The average hourly output per bed is 12 beasts,\* and this may, if necessary, be increased by speeding up

\* Another estimate we have received is from 50 to 70 a day, according to the skill of the workmen.



to 15 beasts. The number of men employed on the killing floor amounts to between 13 and 16 per bed, included in which average are some men whose work is not confined to any particular bed. As an example of the very high degree of specialisation of labour that is practised, we give the following list of the different classes of worker employed on the killing floor of a large plant in Brazil when killing at the rate of 180 cattle an hour, at which rate a gang of about 200 men would be employed :—

Knocker,	Rumpers,	Sawers,
Shackler,	Quarterers,	Breast sawers,
Headers,	Fellbeaters,	Keel pullers,
Floormen,	Neck droppers,	Labourers,
Sticker,	Feet skimmers,	Washers,
Skimmers,	Tail pullers,	Trimmers.
Backers off,	Gaiters,	

86. A modern packing-house is generally built on two floors, killing taking place upon the first floor. This arrangement allows all the products arising in the process of dressing the carcase to be distributed by gravity to the department in which they are finally worked up. Beasts are driven up a ramp to the killing floor, where one by one they take their places in the knocking pen, where they are stunned from above. The side of the knocking pen is then lifted and the bottom pulled up, so that the unconscious animal is thrown out. Shackles are then placed round its hind legs, and it is lifted from the floor by an electric hoist. The beast is moved on to the next point, where its throat is cut in such a way that the blood drains into a gutter. The carcase is moved to the bed, previously mentioned, where it is flayed, and where the head and legs are taken off, and the body split in half by means of a circular saw. The sides are then cleaned, washed, and trimmed, and moved on to the cooling chamber. The whole process takes about 45 minutes.

(c) *By-products.*

87. We do not propose to attempt a comprehensive account of the different products of a large meat works or of their manufacture. They include such different articles as hides, fertilisers and feeding stuffs, edible oils, tallow, bone, horn, glue, gut, hair, and pharmaceutical products. In addition, a packing-house produces a great variety of canned meats and sausages. The extent to which any given plant undertakes the subsequent treatment of by-products depends upon its size. But all packing-houses are equipped in such a way that by-products and offals can be handled economically. Perhaps the most important single process is that by which waste fat, trimmings, hoofs and bones are rendered by heating in large kettles, the resulting



products being fats and greases of different kinds and "crackling," which is ground up to make either feeding stuffs or fertilisers.

(d) *Specialisation of product.*

88. Whether a packing-house is built to deal with all classes of animals or only with one depends upon the volume of supplies passing through the centre. In Chicago, where the number of animals, and especially of pigs, killed yearly is enormous, factories are sometimes built to deal with one class of animal only. In the Argentine, on the other hand, where the trade in pigs is comparatively unimportant, all classes of animals are dealt with at each factory. But, even where this is the case, there is internal specialisation within the factory. Pigs, sheep and cattle are always slaughtered on separate floors.

(ii) THE ARGENTINE.

89. The Argentine is distinguished from other countries by the importance of its export trade, which is in the neighbourhood of one-half of its total production. The meat exported is chiefly produced from animals slaughtered in the large *frigorificos*, or meat works, and in consequence these are of greater relative importance than elsewhere. There are between 10 and 15 *frigorificos* owned by the international meat companies. They are built on a large scale, having a daily capacity of between 1,000 and 3,250 head of cattle with a large capacity for killing sheep and hogs in addition. The daily average kill of these plants is probably not more than 80 per cent. of capacity, and it is unlikely that all the year through they work, on the average, more than 5 days a week. Nearly all the *frigorificos* are built on the River Plate, where they can be reached by the ocean-going steamers built for the trade in meat between this country and the Argentine.

90. Slaughterhouses of a second class are known as *saladeros*. These are smaller up-country works, very possibly only open during the heavy killing season. Their production is either consumed locally or salted for export.

91. Finally, corresponding to public slaughterhouses, there are *liniers mataderos*, situated next to the public markets, in which private butchers rent space to kill for their own purposes.

92. We have received the following estimate (Table 9) of the division of killing between slaughterhouses of these three kinds in a year, during which, in all, about 4,000,000 cattle, 3,800,000 sheep and 400,000 hogs were slaughtered.



TABLE 9.

*Division of output between slaughterhouses of different kinds in the Argentine.*

(Figures in thousands.)

		Cattle.		Sheep.		Hogs.	
			Per cent.		Per cent.		Per cent.
Liniers mataderos ...	404	10	1,030	27	116	30	
Frigoríficos ...	2,496	62	2,234	59	193	50	
Saladeros ...	1,128	28	532	14	77	20	
Total ...	4,028	100	3,796	100	386	100	

93. The meat supply of Buenos Aires comes in part from the *frigoríficos* and in part from butchers slaughtering in the *liniers mataderos*.

### (iii) BRAZIL.

94. In Brazil, each municipality provides a place where animals may be slaughtered, though in remote districts this may amount to no more than a post driven into the ground. This prohibition of private slaughterhouses, however, does not apply to the *frigoríficos* owned by the international meat packing companies. We distinguish the following classes of slaughterhouses in Brazil:—

- (1) *frigoríficos* owned and operated by the international meat packing companies.
- (2) privately-owned slaughterhouses of medium size.
- (3) municipal slaughterhouses, of the type common in Europe, which are used only for the home trade.

95. The *frigoríficos* work partly for export and partly for the supply of the home trade. There is some difference of opinion as to the most satisfactory situation for these factories. For instance, the province of San Paulo, where it is impossible to build them actually at the port of Santos, which would be beyond dispute the best place, some companies have their factories in the city of San Paulo, while others have built them in the heart of the producing areas. The advantages claimed for the latter system are the superior quality of the meat from animals killed in the producing district, before they have been driven or railed over long distances, and the smaller current costs of transport. The disadvantages are the heavy overhead cost of owning refrigerating cars enough for the longer journey and the extra cost of transport of stores used in the factory.

96. In privately-owned slaughterhouses the daily kill is in the neighbourhood of 100 cattle. They have generally been at one time



municipal slaughterhouses and are now owned by local merchants slaughtering for home consumption.

97. An interesting development has recently taken place at San Paulo. It was decided to close the existing municipal slaughterhouse on the ground that it had become obsolete. Rather than rebuild it, the municipality entered into an agreement with the two foreign-owned *frigorificos* in the city by which the latter undertook to slaughter cattle on behalf of local merchants, at fees named by the municipality. At present, one important merchant and several small butchers avail themselves of this privilege. The arrangement made with regard to offals is that the *frigorificos* make an allowance of 0.2 dollar per kilo. dead weight for edible offals, while inedible offals are usually bought separately at the current price. The owner of the beast has the right to repurchase such of the offals of his particular beasts as he requires at 10 per cent. less than the market list price for the day. All offals not required by the owner are disposed of by the *frigorifico*. A certain charge is paid to the municipality by the *frigorifico* for each animal slaughtered.

#### (iv) THE UNITED STATES.

98. The modern packing industry originated in the United States and it has always been associated with Chicago. This city largely owes its importance to the fact that it is the inevitable point of assembly for cattle and other animal fattened in the states of the corn belt\* on their way to the consuming centres of the industrial east. It is commonly said that two-thirds of the cattle population lies west of Chicago and two-thirds of the human population lies east of it. The enormous number of livestock passing through it, together with such additional advantages as the cheap power and abundant water supply available, made Chicago a most suitable point for the development of the packing industry.

99. Slaughtering in the United States is classified under three headings, as (i) farm killing, (ii) retail killing, or (iii) wholesale killing. Farm-killed meat is largely used for local consumption in the producing area. Retail-killed meat is that killed by small butchers who kill only for sale in their own shops. Wholesale-killed meat includes all meat killed by packing-houses, large and small, together with meat killed by butchers who have a wholesale trade. In 1929, for the first time, a complete enumeration of the animals slaughtered in these three ways was made, but, unfortunately, the results have not yet been published. We have, however, made the following rough estimate (Table 10) of the division of slaughtering under different headings from figures kindly supplied for our use by the United States Department of Agriculture.

\* The States of the corn belt which lie to the west and the south-west of the Great Lakes represent about 20 per cent. of the land area of the United States. They are responsible for about 60 per cent. of the corn, wheat, pigs and sheep production of the United States and for about 40 per cent. of the cattle production.



TABLE 10.

*Number of animals slaughtered in the United States in 1927.\**

(Figures in millions.)

—	Cattle.	Calves.	Sheep and lambs.	Hogs.	Total.
Farm-killed ... ..	1.2	.7	.4	17.8	20.1
Retail-killed in towns of under 10,000 inhabitants ... ..	1.3	.9	.2	1.7	4.1
Retail-killed in towns over 10,000 inhabitants, together with cus- tom slaughtering in wholesale establishments ... ..	.8	2.0	1.6	2.2	6.6
Wholesale-killed ... ..	10.7	5.5	14.4	47.5	78.1
Total ... ..	14.0	9.1	16.6	69.2	108.9

Custom slaughtering is slaughtering undertaken by wholesalers and packing-houses on behalf of others. It is improbable that it is of importance numerically, though we have no direct evidence on this point. It is interesting to observe how large a proportion of the total retail slaughtering takes place in small towns.

100. The building of municipal slaughterhouses has never made much progress in the United States. Only 14 such slaughterhouses are known to exist and none of them are in large towns. Nor have co-operative slaughterhouses been successful, as the competition of privately-owned slaughterhouses has been too severe for them.

101. The number of wholesale establishments engaged in slaughtering and meat packing recorded in the Census of Manufactures of 1927 was 1,250. Of these, it is believed that no more than 600 were operating slaughterhouses, the remaining plants being engaged upon the working up of meat and allied products. The number of plants subject to federal inspection (which is required for all meat entering into inter-state and foreign trade) is 313. As federally-inspected meat represents nearly 90 per cent. of the total killed in wholesale slaughterhouses, this figure represents closely the number of important slaughterhouses in the country. The average size of these slaughter-

\* (Figures for farm-killed and retail-killed animals are based on figures supplied for the years 1919 and 1929 respectively, adjusted to the 1927 level in accordance with the general movement of livestock slaughtering as estimated by the United States Department of Agriculture. Wholesale slaughterings are the actual figures from the Census of Manufactures for 1927. The total figures are estimates made by the United States Department of Agriculture. Retail slaughtering in large towns and custom slaughtering represent the balance.)



houses may be seen from the figures given in the following table (Table 11):—

TABLE 11.

*Particulars regarding slaughtering in federally-inspected factories in 1927.*

Kind of animal.				No. of factories engaged in slaughter.	Total no. of slaughtered under federal inspection. (In 000's.)	Annual average per factory.
Cattle	...	...	...	245	9,520	38,900
Calves	...	...	...	249	4,876	19,600
Sheep	...	...	...	211	12,883	61,000
Hogs...	...	...	...	229	43,633	190,500

The degree of specialisation of plants may be seen from the following table (Table 12):—

TABLE 12.

*Classification of federally-inspected slaughtering plants.*

Animals slaughtered—				Number of plants.
Cattle, calves, sheep and hogs...	...	...	...	167
Cattle only	...	...	...	8
Cattle and hogs...	...	...	...	9
Cattle and calves	...	...	...	19
Cattle, calves and sheep	...	...	...	30
Cattle, sheep and hogs...	...	...	...	1
Cattle, hogs and calves...	...	...	...	11
Calves only	...	...	...	7
Calves and sheep	...	...	...	13
Calves and hogs	...	...	...	2
Hogs only	...	...	...	39
Horses only	...	...	...	7
Total	...	...	...	313

The large number of mixed plants is noticeable. It will be observed that specialisation is most marked for hogs.

102. We have, unfortunately, no information as to the distribution of wholesale slaughtering among plants of different sizes, except that the capacity of plants varies greatly, reaching in some cases a figure



as high as 80,000 head of animals of all kinds in a week. Nor do we know to what extent the industry is burdened with surplus capacity.

103. The centre of the industry is in the corn belt states, or in the northern half of the Mississippi valley, in which area a large part of the production of livestock in the United States takes place. Chicago lies between the western producing states and the eastern consuming states. In addition, there are important slaughtering centres in the heart of the producing area, *e.g.*, at Kansas and Omaha. The following table (Table 13) illustrates the point :—

TABLE 13.

*Percentage of total slaughtering which took place in the six most important districts in 1930.*

*(From figures of carcasses federally-inspected.)*

Station.	Cattle.	Calves.	Sheep and lambs.	Hogs.
Chicago ... ..	18·7	11·6	17·7	15·0
Kansas ... ..	10·2	4·7	9·4	5·3
Omaha ... ..	10·4	1·3	12·3	5·2
South St. Paul ... ..	6·1	13·7	4·1	5·5
Sioux City ... ..	4·7	·5	4·8	3·2
New York ... ..	4·5	14·3	18·3	2·3
Total, 6 districts ...	54·6	46·3	66·6	36·5

All the cities named except, of course, New York, lie within the corn belt.

### (c) Slaughtering methods in the Dominions.

#### (i) CANADA.

104. Slaughtering and meat packing was, in 1929, the second most important industry in Canada, having in that year a gross output of 185 million dollars. The most important centre of the industry is Ontario, where, in 1928, there were 25 establishments having a gross output of over 90 million dollars. The system of slaughtering is, in general, much the same as in the United States. That is to say, slaughtering is centralised in large slaughterhouses owned by private firms. There are also a certain number of co-operative slaughterhouses, but these do not at present handle any large proportion of the trade. There was at one time a municipal slaughterhouse in Toronto, but this was closed some few years ago and there are now no important municipal slaughterhouses in Canada.



## (ii) AUSTRALIA.

105. In Australia municipal slaughtering is the rule. There are, however, two different systems in operation. The first, known as the pen system, is used at the Sydney slaughterhouse. It is essentially the same system as that in use at, for example, Islington in this country. A separate killing floor and cooling room is provided for each group of operatives, who provide their own labour. The other system, known as the collective system, is in operation at Adelaide. Under this, the management controls all the operations of the slaughterhouse, including slaughtering. We defer consideration of the detailed organisation of this system to a later section of our report (paragraphs 159 *et seq.*). It is an attempt to combine the principles of the American packing-house and of a continental public slaughterhouse in a single system. A commission appointed by the Queensland Government in 1928 to consider the merits of the two systems, after careful investigation, unhesitatingly recommended the adoption of the collective system in preference to the pen system.

## (iii) NEW ZEALAND.

106. In New Zealand every town with a population of 2,000 or over is obliged by law to have a central slaughterhouse where the animals are killed and dressed by the employees of the local authority. In the larger towns there are by-product companies owned by the butchers, where the by-products from the slaughterhouses are dealt with in bulk on scientific lines and sold in the wholesale market.

## (iv) THE UNION OF SOUTH AFRICA.

107. South Africa has also adopted municipal slaughterhouses, and under regulations recently promulgated all slaughtering in these must be carried out by slaughtermen employed by the municipality.

#### IV.—PACKING-HOUSE METHODS OF OPERATION AND THEIR APPLICABILITY TO GREAT BRITAIN.

108. In the preceding Section, we have described the methods of slaughtering in use in foreign countries and, in particular, the packing-house system in the Argentine, Brazil and the United States. This system affords three main opportunities for economy. In the first place, the capital cost per head slaughtered is lower in a large packing-house than in a smaller slaughterhouse. The reason for this is clear. It is always possible to double the output of a factory by mere duplication, but at each increase in size it is possible to effect certain economies in arrangement which reduce the cost of the whole. In a similar way, the increase in output provides opportunities for improved methods, leading to the second form of economy, viz., economy in operating costs. We do not think it necessary to quote examples of



the working of these principles, as they are common to all industry. It has been the unanimous opinion of all those of our witnesses who spoke with authority on technical matters that these principles are of great importance in the packing industry, that the large scale unit is more efficient than the small, and that there are no countervailing technical considerations, such as the increasing complexity of management, sufficient to outweigh the economies derived from increases in size. At the same time, we have not been able, in spite of numerous inquiries, to arrive at any definite opinion as to the rate at which costs of operation decrease with outputs of different size. The third economy arises in connection with the utilisation of by-products. We have called attention in an earlier part of our report (paragraph 52) to the loss in quality of by-products if they are not adequately treated at an early stage. As the size of kill increases, it becomes possible to make special arrangements for the immediate treatment even of the less valuable by-products.

109. We turn now to the important question whether the system, the advantage of which we have been describing, is preferable to either or both of the two which are operating side by side in this country, namely, the system of slaughter in a large number of small uncoordinated private slaughterhouses (sub-section (a)) and the system of centralisation of slaughter in municipal slaughterhouses as at present conducted (sub-section (b)). In sub-section (c) we draw attention to certain important qualifications and in sub-section (d) we draw our main conclusions.

**(a) Comparison of slaughterhouses run on packing-house lines with small private slaughterhouses.**

*(i) Comparative costs of operation.*

110. It is difficult to make generalisations about private slaughterhouses as a class. In particular much that may be said with truth about private slaughterhouses situated in urban areas would be untrue if applied to those situated in sparsely populated country districts. In the following paragraphs we have in mind in most cases slaughterhouses situated in or near large centres of population. For the sake of brevity we have not duplicated our whole comparison, but have drawn attention to those respects in which what is true of the town is not true of the countryside.

111. The out-of-pocket expenses of the small butcher killing a beast in his own private slaughterhouse are extraordinarily low. Indeed, we should estimate the decrease in a butcher's weekly expenditure likely to follow from slaughtering one beast fewer in any week at precisely nothing at all. For his overhead charges, the costs of maintaining his slaughterhouse are not affected, nor, in all probability, will his wage bill show any reduction. As we have already observed (paragraph 38), the sale of meat is concentrated in the latter



part of the week. During the earlier part of the week, the butcher's staff has little work to do in the shop, and can be used in the slaughterhouse without any additional expense to the butcher. When, however, we consider the reduction in the butcher's normal weekly expenses likely to follow from permanently closing his slaughterhouse, obvious economies can be seen. In the first place, he is saved the complete costs of maintaining his slaughterhouse, and, in addition, is likely to receive some income from it by letting it for some other purpose. In the second place, instead of employing, presumably at rather a high price, labour which has some skill both in the shop and in the slaughterhouse, he is able to employ labour either equally skilled in the shop at a lower price, or more skilled at the same price. We are not, however, in a position to do more than make a rough estimate of his saving, but we suggest that it is likely to be for a beast at least 4s. or 5s.\*

112. More important to the small butcher is the low level of the prices which he receives for his by-products. The extent of this loss will, of course, be affected by the type of slaughterhouse which we define as being *normal*, that is to say, as having no loss, in this respect. For the purpose of this section we take a good municipal slaughterhouse as our standard. Even so it is difficult to make a definite estimate of this cost, but it is not likely to be less than 10s. 6d. to 12s. a beast and may be considerably more. The loss would be made up as follows:—

(1) *Hides*.—The quality of flay in private slaughterhouses is poor. We have quoted (paragraph 49) an estimate that 40 per cent. of skins are classed as "seconds" merely because of bad flay. The difference in value between 1st and 2nd class hides varies from time to time. In July 1928 and July 1929 it was 1d. per lb., or approximately 5s. a hide. In July 1930 it was 1½d. per lb., or 8s. a hide. In July 1931 it was 1½d. per lb., or 5s. 6d. a hide. In December of the same year it was as low as ¼d. per lb., or 1s. 3d. a hide. To assume an average difference of 5s. a hide seems to us reasonable. Forty per cent. of this is 2s. In addition, we estimate on the basis of the variation in commission referred to previously, that the extra cost of collection from private slaughterhouses is between 1s. and 1s. 6d., making a total loss per beast of from 3s. to 3s. 6d.

(2) *Fats*.—We were told by a witness, experienced in the fat trade, that at present the price to a private slaughterhouse for fats was ½d. per lb. below that paid to a municipal slaughterhouse, mainly on account of the heavy cost of collection. The weight of fat

\* NOTE.—If the butcher saves from about 5s. to 10s. a week by closing his slaughterhouse, and if, as is the fact, the wages of a slaughterman are about 10s. a week higher than those of a "first-hand" in the shop, it is reasonable to assume a weekly saving of at least 15s. in a small slaughterhouse slaughtering, say, 10 head of all kinds a week. At least 4s. of this should be allocated to the single beast which will probably be killed there.



per beast varies in different parts of the country, but lies between 50 and 70 lbs. It would, therefore, be safe to assume an average loss of 2s. 6d. a beast. In addition to this quite a considerable quantity of fat is actually lost, through inadequate treatment. We have heard of cases where beasts in private slaughterhouses produce 8 lbs. less fat than beasts of a similar description killed by wholesalers. Bearing this in mind, we estimate the loss on fats at between 3s. and 4s.

(3) *Rops*.—We understand that the price per beast paid for rops at public slaughterhouses normally varies from 2s. to 2s. 3d. The small butcher receives, however, only a nominal sum for the rops of his beast. We therefore estimate the loss to him under this head at 2s. a beast.

(4) *Blood*.—The value of blood, if properly treated, is said to be in the neighbourhood of 1s. per beast. In a slaughterhouse of the type that we take as standard, perhaps 6d. would be received. Very little is received for this by the small butcher.

113. Under the foregoing headings alone we find a loss of 8s. 6d. to 10s. per beast. In addition to this, the small butcher has further losses in respect of feet, bones, manifolds, skulls, horns, trimmings and glandular products. We do not believe that 2s. is an over-estimate of the loss in these directions.

114. The whole of this discussion is subject to the qualification that in fact for small independent slaughtermen there exist no uniform costs of operation, in which term we include both the expenses of slaughter and the amount by which receipts on account of by-products fall short of those which might reasonably be expected in a normal slaughterhouse. The variation between these costs in individual enterprises is extreme. But we believe that for the small butcher they are not likely to be less than 15s. per beast and may be considerably more. We think it advisable to point out that the costs of operation which we have just estimated at 15s. have a very restricted meaning. They do not include, for instance, the heavy costs of buying beasts nor of droving them. These are considered under subsequent headings.

115. What then are the equivalent costs in a large slaughterhouse run upon factory lines? Here again we have no information which we may apply with certainty to this country. We have received an estimate which gives the operating costs in packing houses in the United States as 5 dollars per beast. But this includes amounts spent upon the further working up of by-products and refers to conditions under which very much higher wages are paid than are the rule here. Another indication of what the costs might be expected to be in a large slaughterhouse in this country may be obtained from a consideration of the average charges at various municipal slaughterhouses. If



allowance is made for one day's refrigeration, these amount to 10s. 3¼d. per beast, made up as follows\* :—

	s.	d.
Lairage (one day) ... ..	5	¼
Use of slaughterhouse ... ..	2	7
Killing and dressing ... ..	4	6
Use of chill rooms (one day)...	2	9
	<hr/>	
	10	3¼

116. The above figures (apart from the item of 4s. 6d. for killing and dressing) are charges made and not ultimate costs. As municipal slaughterhouses in general incur losses which are made up out of rates, these charges must be increased. The figures in section II (paragraph 57) suggest that charges in general represent two-thirds of the total costs. Allowing for this, the charge of 10s. 3¼d. given above really represents a cost of approximately 13s. per beast. On this basis, even the present form of municipal slaughterhouse is less expensive than the private slaughterhouse. But we have to compare the latter not with a type of large slaughterhouse, which is open to many criticisms—and we believe that there are many ways in which municipal slaughterhouses at present fall short of perfection—but with a slaughterhouse built and operated on the most efficient lines. Making such a comparison, we have no doubt that the costs (in the sense defined above) of slaughtering in a small private slaughterhouse are much greater than those in a large modern meat works.

(ii) *Quality of meat produced.*

117. It has been represented to us that the quality of the meat and of the edible offals produced in private slaughterhouses is superior to that produced in public slaughterhouses. At present, this may very well be true. We, however, are only concerned with the comparative quality of meat produced under proper factory methods. But in any case, meat killed in a central factory is likely to undergo rather more handling than meat killed in a private slaughterhouse adjoining a butcher's shop. This is a disadvantage, as meat should be handled as little as possible if it is to preserve its quality and appearance. The handling of beasts while alive also affects the quality of meat produced, and it must be remembered that in a large town the small butcher probably drives his beasts further than a butcher slaughtering in a public slaughterhouse, which is usually situated near the cattle market, or has direct connection with the railway, though at the same time he often rests it longer and under better conditions.

\* The figures given above are for lairage, the use of slaughterhouse and killing and dressing, the average of Rotherham, Carlisle, Islington, Leeds and Glasgow or Edinburgh, and for the use of chill rooms, Glasgow and Bradford.



118. A more serious point is this. Home grown meat at present sells at retail at a considerably higher price than similar imported meat. The wholesale prices to some, but not the whole extent, reflect this difference. Were this advantage in price to be swept away, the home producer would be adversely affected. It has been suggested to us that British meat only receives this higher price because it is neither frozen nor chilled, and it has been further suggested that given packing-house methods, involving as they would the holding of meat in cold store for several days, British meat would sell for no higher price than imported meat. There are two arguments which invalidate reasoning of this kind. In the first place, home-killed meat has other qualities peculiar to itself besides the purely negative one of not being chilled. It has superior flavour, due to the methods used in fattening, and it also has superior fat, due to the fact that it is eaten within a reasonably short time of slaughter. These qualities are unaffected by refrigeration for a limited period.

119. Secondly, it is important to differentiate between the various uses of the term "chilled meat," in regard to which there is unfortunately some confusion. There are four different processes which should be carefully distinguished :—

- (a) A certain amount of meat is imported into this country in a completely frozen condition. This meat is carried at a temperature of from 15 to 16 degrees Fahrenheit, and is known to the trade as "frozen" meat.
- (b) The bulk of our meat supplies are imported at a temperature slightly below freezing point, the lowest permissible temperature specified for this purpose in the contracts between the importers and the shipping companies being 29 degrees. This meat, though it is in fact frozen, is known to the trade as "chilled" meat.
- (c) Home-killed meat in this country is quite frequently held in a mechanically refrigerated store at a temperature of between 36 degrees and 45 degrees. For such a process no particular name is in general use.
- (d) All meat is hung for some hours after slaughter in a room at air temperature till the body heat has disappeared. This process is generally known as cooling or precooling and the room in which it takes place as the cooling room.

We suggest that in order to avoid confusion, meat held in a mechanically refrigerated chamber at a temperature between 36 and 45 degrees (*i.e.*, class (c) above) should be described as "held in cold chamber," and that to describe such meat as chilled should be generally recognised as being misleading. To use for this purpose the simpler word "cooled" is impossible in view of the other meaning now attaching to it. Home-killed meat held in cold chamber differs from chilled and frozen meat in that it does not "sweat" (a word used to describe the moist condition of meat which has been brought below



freezing point) so long as it is not exposed to a considerably higher temperature and does not lose its bloom or the distinctive appearance of freshly killed meat, if it is held no longer than four or five days in cold chamber.

120. There is, therefore, no reason why home-killed meat held in cold chamber should be confused with the very different foreign chilled meat, unless it is in the butcher's interest to create this confusion. But the butchers probably benefit considerably by the existing discrimination in price, and may be expected to do all they can to maintain it. In these circumstances, we do not anticipate that the practice of holding meat in cold chamber only so long as to maintain an even rate of killing would have any adverse effects upon the price of home-killed meat. If, however, it should be expedient to hold meat in store for longer periods, some fall in price might occur. For the "bloom" might be lost, and this "bloom," though it is not of any value as an indication of the eating quality of the meat is apparently highly valued by the house-wife. On the other hand, "hanging," it is agreed by all experienced witnesses, definitely improves the eating quality of the meat. In the long run, we think that the latter factor is likely to prove of greater importance.

(iii) *Disposal of inferior cuts.*

121. Another respect in which the small slaughterhouse is at a disadvantage is in the disposal of the inferior cuts of meat. In a packing house, in so far as these cuts are in excessive supply, they are canned, a process which apparently greatly increases their saleability. Such methods of disposal are, of course, impossible for the small man. Collection charges and the deterioration of the product between the slaughterhouse and the factory prevent the canning industry from looking for their sources of supply to small independent units. This point is likely to grow in importance if there is any marked increase in the production of English meat. For it is generally believed that the market for inferior cuts in this country is, if not diminishing, at any rate incapable of substantial expansion. On the other hand, the home demand for meat for canning is likely to be stimulated by the present tariff. An alternative method for the disposal of these cuts is to export them to certain countries on the continent of Europe in which less attention is paid than at home to the quality of meat consumed. But the development of such a trade depends upon regularity of supply and it is at present practically non-existent. Concentration of slaughtering would certainly improve its prospects.

(iv) *Facilities for inspection and grading.*

122. We have referred in a previous paragraph to the heavy cost of inspecting meat killed in private slaughterhouses (paragraph 55) and to the difficulty of securing an adequate standard of inspection.



Again, the development of grading, on the promotion of which the Ministry of Agriculture have devoted much effort in recent years, is likely to be retarded as long as the private slaughterhouse system is maintained. Due weight must be given to these considerations in comparing the economic merits of the small slaughterhouse with those of packing-houses.

(v) *Effect on market organisation.*

123. Any change in the system of slaughtering would have some effect upon the other links in the chain of distribution. If, for example, this change were in the direction of substituting large slaughterhouses serving a considerable area for a large number of small slaughterhouses, and if it were possible for the farmer to consign his livestock direct to a slaughterhouse in the knowledge that they would be sold at least as favourably as any others, then we might anticipate a considerable simplification in the trade in livestock for slaughter. For the farmer would be able to escape the expense of passing them through a market. It has been suggested to us that such a change might have the effect of reducing the numbers of buyers and consequently reducing the price paid for the farmers' livestock. But even in the extreme case where the slaughterhouse had a complete monopoly of the trade, provided that its power to fix excessive charges were adequately controlled, the price received by the farmer would still be determined by the competition for meat on the part of wholesale and retail butchers. In the circumstances described, therefore, we anticipate that there would be no loss to the farmer through a reduction in bargaining power to offset his gains on account of the improvement in distribution. In addition to the savings to the farmer in the marketing of livestock, there should in some districts, at any rate, be substantial savings to the butcher, who now incurs considerable expense in attending sales and auctions, and in bringing home beasts and other livestock in small numbers. Indeed, a scheme of centralisation, associated, as it should be with a development of grading and marking, would enable the small butcher to order supplies of home-killed meat as easily as he can now order imported meat, that is to say, by postcard or telephone, without leaving his shop.

(vi) *Relative costs of transport.*

124. We must expect the costs of transport per head for a large organisation to be greater than for a small one. It is not possible, however, to lay down any definite connection between the size of the unit and the expenses of its transport, for the latter depends also upon a number of independent factors. Among these we include the density of the market, its relation to the sources of supply and the facilities for transport open to enterprises of different size. As an example of the way in which these factors may sometimes outweigh the major



consideration of size, we may cite the very heavy droving costs which a small private slaughterman incurs in a large city when fetching his beasts from the railway station to his shop. These exceed the charges for the delivery of meat which a centralised slaughterhouse situated actually on the railway would have to make. In general, however, larger slaughterhouses involve heavier transport costs. This would be particularly true if an attempt were made to establish large slaughterhouses to serve sparsely-populated districts, especially if cattle were produced throughout the area.

(vii) *Summary of the preceding arguments.*

125. We may summarise the conclusions of the previous paragraphs as follows :—

- (a) Slaughtering in small private slaughterhouses is more expensive than in a typical large municipal slaughterhouse, when allowance is made for butcher's receipts in respect of by-products. It follows even more strongly that slaughtering in an efficient centralised meat works is cheaper than slaughtering in private slaughterhouses.
- (b) As regard the probable effects of centralisation on the quality, and consequently the price, of home-killed meat, we reject the view that any adverse affect would follow the holding of British meat in cold chamber for comparatively short periods.
- (c) The further advantages which would follow from a policy of centralisation are :
  - (i) an improved market for the inferior parts of the carcase which are now sometimes difficult to dispose of ;
  - (ii) improved facilities for inspection and grading of carcasses ; and
  - (iii) the possibilities of improvements in marketing organisation, both before and after the time of slaughter.
- (d) On the other hand, a policy of centralisation might result in an increase in costs of transport, though in some districts, especially in large industrial centres, there may be special circumstances which prevent this increase occurring. This factor would be relevant and important in determining the size of an area to be served by a slaughterhouse.

126. To sum up, after making all allowances for the objections considered in the preceding paragraphs, we are satisfied that there is a substantial balance of advantage in favour of centralised slaughtering, as compared with slaughtering in private slaughterhouses. This conclusion is subject to the qualification that there may exist areas which by reason of their sparse population are best served by small slaughterhouses of the present type.



**(b) Comparison of slaughterhouses run on factory lines with municipal slaughterhouses as now operated.**

127. In the foregoing comparison of private slaughterhouses with slaughterhouses run on packing-house principles, we have been dealing with two systems which differ not only in the method of operation but also in the size of unit. We are now concerned with two systems under which we may take the size of unit to be the same, but the method of operation very different. Some of the points which we there discussed need not now detain us. The change of method we are now considering need have no effect upon either the ease of inspection, or the market organisation, or the cost of transport.

128. Under packing-house methods, it will be recalled, the slaughterhouse is under one control, is operated as a unit, and the animals slaughtered are owned by the owner of the slaughterhouse. In the municipal slaughterhouse, the slaughterhouse is divided up into a number of units, each operated independently by butchers who own the cattle, but have no interest in the slaughterhouse. Many of the disadvantages of the divorce of ownership from operation have been referred to earlier in our report. Of these, the principal are as follows:—

- (1) Slaughtering is at present carried on in Great Britain unsystematically and with great irregularity. As a result, buildings have to be capable of dealing with a much greater pressure of work than would arise if the flow was evenly regulated.
- (2) The capital cost is also unnecessarily increased by the subdivision of the organisation into a number of small units, thus preventing the adoption of those economies which are associated with large-scale operation.
- (3) As there is no central management responsible for using labour in the most economical way, operating costs are unduly high. For the orderly progress of the carcasses from one operation to the next is not achieved, and much effort is expended on fetching and carrying within the factory.
- (4) The facilities provided by a large output for using specialised labour or labour-saving machinery cannot be obtained.
- (5) By-products are not collected and utilised as efficiently as is possible under unified control and ownership.

The importance of the first two points is illustrated by the case of a large public slaughterhouse recently built. Two estimates were prepared, the first on the principle that slaughtering was to be continuous, the second on the principle that butchers would kill individually in separate stalls. The second scheme was nearly 25 per cent. more expensive than the first.

129. To the last point we think it necessary to draw particular attention. In discussing the by-products produced in private slaughterhouses, we laid emphasis on the heavy cost of collection from



a number of scattered points. Concentration at the present municipal slaughterhouses, however, does not solve the problem of by-products. We have received a considerable body of evidence on the unsatisfactory way in which these are disposed of in municipal slaughterhouses. Blood is in many cases wasted. Little or no provision is made for the collection of glandular products. There is often no plant for the treatment of trimmings, bones, and general slaughterhouse waste. Casings, though collected, are allowed to deteriorate in quality. The same is true of fat. In most cases, the municipality is perfectly aware of the waste that is taking place, but has found on investigation that it would not pay to prevent it. And the reason why it would not pay is that the organisation of the slaughterhouse and the divided ownership of the beasts make efficient collection impossible.

130. Nor can it be said of municipal slaughterhouses that the quality of meat and edible offals is superior to that produced under packing-house methods. Indeed, we believe the opposite to be the case. For though both forms of organisation perhaps suffer in comparison with the private slaughterhouse as regards the handling of meat, under packing-house methods this is offset by the better facilities provided and by the greater skill of the specialised labour employed. In municipal slaughterhouses where the gangs employed are still small, this is not so.

131. We have considered the present form of municipal slaughterhouse from many points of view. But we have not been able to discover any respect in which the existing system is preferable to one which permits of unified operation and control, nor any argument in its favour which has not on examination proved to be baseless. On the other hand, we have received ample evidence of the wastefulness and inefficiency of the methods universally and unavoidably employed in slaughterhouses as they are now conducted. We have had explained to us the great advance in technique which has been made by the meat-packing industry in North and South America. And we believe that it is now necessary, in the interests of both the producer and the consumer in this country, to apply this technique to the special problems presented by slaughterhouses operated under public or municipal control.

#### **(c) The importance of local considerations.**

132. Hitherto, we have considered the advantages of packing-house methods in general terms. There are, however, certain qualifications which must be borne in mind. We have already called attention to the importance of costs of transport, and have shown that the density of population is a factor of great importance in deciding whether centralisation will be advantageous. It is doubtful, therefore, whether the closing of private slaughterhouses in remote rural areas will ever be in the general interest. Another qualification which we desire to make to our general approval of packing-house methods is that in deciding whether or not any scheme of centralisation is desirable, it is clearly necessary to take into consideration the existing



facilities for slaughter. A number of municipalities have recently built public slaughterhouses. We believe that these have been built upon wrong principles. Not, indeed, because the municipalities in question (*e.g.*, Sheffield) have not been alive to the advantages of other methods of construction, but because they have been powerless to impose what, we are convinced, are better methods upon an unwilling trade. But though they may not be the best possible kind of slaughterhouse, it may be more economical for the present to use them as they are than to scrap them or to incur heavy expenditure on adapting them.

#### (d) Conclusions.

133. Subject then to the foregoing qualifications, we are of the opinion :—

- (i) that the small private slaughterhouse is not, at any rate in urban areas, the most efficient unit from the technical or economic point of view, and that it is desirable on these and other grounds that the slaughtering of animals for food should be concentrated for the purpose of supplying large centres of population;
- (ii) that the present form of municipal slaughterhouse, in which control of operations is divided among a number of independent butchers, does not secure the full benefits of centralisation; and that in future municipal slaughterhouses should be operated continuously under one management, so that they should be in a position to adopt, as far as possible, the technical economies associated with American packing-house methods.

### V.—THE LINES ALONG WHICH CENTRALISED SLAUGHTERING SHOULD BE DEVELOPED.

#### (a) Introductory.

134. Questions which immediately suggest themselves so soon as greater centralisation is decided upon are : How many centres shall there be ? Is it sufficient that killing should be concentrated in a number of comparatively small public slaughterhouses, or is some further unification desirable, with a view to establishing regional slaughterhouses ? Or would it be economical to adopt some even more ambitious scheme, by which all the killing in Great Britain would take place in a small number of slaughterhouses of a size comparable with that of the largest plants in North or South America ? Again, is the present tendency for slaughterhouses to be situated in consuming centres justifiable in every case ? To give final answers to these questions would require an elaborate and costly investigation which would only be justified in a body set up to carry out a policy already approved by Parliament. In the following paragraphs, sub-section (b), we confine ourselves to laying down the general principles which must inform any investigation, and the general facts which are likely to prove of significance in this country. There are two further questions



capable of a general answer. The first of these, dealt with in sub-section (c), is whether public slaughterhouses should operate merely on a service basis or whether they should be permitted to trade and if so in what form. The second, dealt with in sub-section (d) concerns the desirability of conferring a statutory monopoly upon one public slaughterhouse within each region. Finally, in sub-section (e), we refer briefly to bacon production, a subject with which in the rest of our report we have not concerned ourselves, on the ground that both in its present organisation and some of its characteristics it differs considerably from the trade in fresh meat and therefore calls for separate consideration.

**(b) The size and situation of centralised slaughterhouses.**

135. We have seen that in packing-houses the net operating costs per head, after allowing for the receipts on account of by-products, decrease as the scale of operation increases (paragraph 108). At the same time, as the size of the area served increases, the cost of transport per head, alive and dead, increases. It is the interaction of these two tendencies which defines the area which may best be served by any slaughtering centre. A point comes at which the decrease in the average costs of operation consequent upon an increase in area, is more than balanced by the associated increase in the average costs of transport. This in itself, however, does not prove that the limit of the desirable expansion of the area has been reached. For it may still be true that there are districts outside this area which are more cheaply served from the centre in question than from any other. It is the central area, together with all outlying districts of the latter kind, which constitute the most desirable area from a purely technical point of view.

136. The evidence we have received concerning various foreign countries suggests that slaughterhouses having a daily kill of from one hundred beasts\* up to perhaps five hundred beasts would be suitable to the conditions of the greater part of this country. The larger unit within the range named is likely to be of greater efficiency than those below it in the scale, but we are not able to make a quantitative estimate of this difference.

137. The cost of delivery or collection† is made up of two parts : the first that which is attributable to the distribution or collection of comparatively small consignments to a number of points within any district ; the second the cost of running between the loading or unloading point and the district in question. The first and larger part is practically constant, however far from the district in question the slaughterhouse may be, and depends upon such considerations as the distance between points of delivery, the size of consignments, the facilities for unloading and the conditions of local traffic. The second

\* Together with the usual proportion of other animals.

† By the cost of collection we mean carriage charges incurred up to the time of slaughter. Carriage charges incurred subsequently are included in the cost of delivery.



part increases regularly with the size of the area served. For example, every increase of one mile in the radius of the area served by a slaughterhouse might add between 1*d.* and 2*d.* per beast to the average cost of collection or delivery throughout the area. Concentration of slaughtering, except in special cases, involves this extra charge twice, once on the collection of beasts before slaughter and once on the delivery of meat.

138. The question whether slaughterhouses are best situated in centres of production or in centres of consumption is closely bound up with the consideration of size and of transport. In order to achieve a given output, will transport costs be higher if the slaughterhouse is in town or country? To answer this question it is necessary first to ascertain whether the cost of carrying meat is greater or less than the cost of carrying the equivalent in live animals. Unfortunately, it is not possible to form any definite conclusion upon the evidence of railway rates. For these are not based exclusively upon considerations of cost, the determination of which in regard to any particular class of commodity is a matter of extreme difficulty, but also upon commercial considerations such as whether or no the traffic will pass at any given freight rate. For what it is worth we reprint the following table of rates (Table 14) from the Report of the Ministry of Agriculture and Fisheries on the Marketing of Cattle and Beef. The rates have been brought up to date in some instances. A medium truck of cattle, according to the Linlithgow Committee, carries, on the average, eight beasts. The dead meat equivalent is based upon this number.

TABLE 14.

*Cost of sending cattle and of sending the equivalent in meat to London.*

From—					Cattle in medium trucks.	Dead meat equivalent.
					s. d.	s. d.
Aberdeen ... ..	...	...	...	...	316 2	284 10
						company's risk
						254 7
						owner's risk
Exeter ... ..	...	...	...	...	121 6	128 2
Exeter (if 2 trucks) ...	...	...	...	...	243 0	218 0
Leicester ... ..	...	...	...	...	80 9	92 5
					(70/10 exceptional rate)	
Leicester (if 2 trucks) ...	...	...	...	...	161 6	163 4
					(141/8 exceptional rate)	
Birkenhead ... ..	...	...	...	...	134 4	142 3
Birkenhead (if 2 trucks) ...	...	...	...	...	268 8	169 2
Menai Bridge ... ..	...	...	...	...	158 10	220 5
Norwich ... ..	...	...	...	...	89 6	91 10
Shrewsbury ... ..	...	...	...	...	111 11	159 5
Dorchester ... ..	...	...	...	...	101 9	133 0



139. It appears that at present the railways make lower charges for the carriage of cattle than for that of the equivalent quantity of dead meat, though in the case of certain long-distance traffic, where competition is very severe (*e.g.*, Aberdeen), the cost of carrying meat is definitely less. As regards sheep, we understand that, in general, it is cheaper to send meat than live animals.

140. The railway companies themselves prefer to carry livestock. For the expenses of terminal handling are not so heavy as for meat, and the type of rolling-stock required is not so expensive to construct. In addition, the companies' supplies of trucks for carriage of livestock and of refrigerated vans for the carriage of meat are adjusted to the present practice. If this were changed by, for instance, an increase in the proportion of the traffic which passed in the form of meat, the companies would be involved in additional expenditure.

141. Motor transport is a factor of new and increasing importance in the carriage of both livestock and meat. We have not been able to obtain any rates for motor transport comparable with those shown in the preceding table and, no doubt, had we done so there would have been similar reasons why too much reliance should not have been placed upon deductions from them. Ultimately, however, the effect of motor transport may be to lessen, or even reverse, the present advantage which the consignor of livestock has over the consignor of meat.

142. Another factor of importance in this connection is the comparative loss of weight and quality resulting from the transport of live animals and meat. There is substantial loss of weight in both cases, but the loss in the case of the transport of live animals is more severe than in the case of meat. As regards the effect on quality there is a divergence of opinion. It is, however, generally admitted that there is loss of meat through putrefaction in hot weather.

143. If for the purpose of argument we assume that there is no great difference in the costs of transport of meat and of live animals, then we may reason along the following lines. Within a radius of, say, 10 miles of one of our larger towns there might be a population approaching two millions with an annual consumption of between 50,000 and 100,000 head of cattle. In an agricultural district with a similar radius there would be an annual production, taking the average for England and Wales as a whole, of 9,000 cattle, or, taking a district of concentrated production such as Northamptonshire, of about 20,000 cattle. The transport cost per head added by concentrating supplies at the centre of either of these areas, in one case before delivery, in the other before despatch, would, on the assumption we have made, be the same. But if this concentration took place in the consuming centre it would be balanced by the advantage of operating on a scale of from 50,000 to 100,000 beasts per annum, while if it took place in a producing area the balancing advantage would only



be that of operating on the scale of at most 20,000 head per annum. There is, therefore, a general presumption that slaughterhouses should be built in consuming centres, because the consumption per square mile in the former is generally greater than the production per square mile in the latter. The precise evaluation of these factors is a matter of great complexity and, in any given instance, would depend on the relative costs of, and facilities for, different classes of transport.

144. It may, however, happen that there is some point through or near which all animals from a large area must pass on their way to any consuming centre. An instance of such a point is afforded by Chicago, which, as we have seen, lies between the producing districts of the centre of the United States and the consuming areas of the east. Should such a point exist it is clearly desirable that the slaughterhouse should be located there, for it will then achieve all the advantages of size without the disadvantages of increased transport charges.

145. The production of particular agricultural areas is much more subject to seasonal variation than is consumption in general. The important example of this is the spring supply of stall-fed animals from the arable area of Norfolk which succeeds the sale of grass-fed animals from Leicestershire in the London market. Sheep supplies are also subject to considerable seasonal variation. There is a tendency for root-fed sheep from arable districts to predominate at one time of year and grass-fed sheep from upland districts and from, for example, the Kent marshes, to be in evidence at other times. An even supply of animals all the year round is necessary if the overhead costs of a factory are not to be unduly great. This affords a further argument against the location of slaughterhouses in certain producing areas. We may illustrate the practical application of these principles from the conditions in London and the surrounding area. London derives that part of its supplies which it does not receive in the form of meat, either from Norfolk (mainly in the spring) or from Leicester or from the south-west of England. The seasonal nature of the supplies from some, at any rate, of the producing areas rules out the possibility of slaughterhouses in such areas. Considerations of transport suggest that concentration would most conveniently take place at a point a short distance to the north-west of London itself.

146. There remain certain minor points. First there is said to be at present peculiar difficulty in the transport of edible offals over long distances. Though meat may be carried all the way from Aberdeen to London, and be sold on arrival for a higher price than any killed on the spot, the same is not true of such products as livers, kidneys, sweet-breds, and the like, the value of which forms a not inconsiderable part of the whole. The market for these products is not elastic, and to dispose of them within a radius of, say, 30 miles (which can at present be considered the maximum distance they can be transported without



running the risk of deterioration) may involve some loss. Secondly, attention must be paid to the comparative costs of the construction and maintenance of factories and the provision of lairage accommodation in town and country areas.

147. At present cattle, except those coming to London from Ireland through Birkenhead, and from Scotland through Aberdeen and Inverurie, are generally slaughtered in consuming centres. Having regard to the situation of the midland producing district of Leicestershire and Northamptonshire, between the consuming centres of London, Birmingham and Lancashire and the West Riding, and to the seasonal production of Norfolk, these arrangements are inevitable and, broadly speaking, the present geographical distribution of slaughtering is satisfactory from the economic standpoint. The production of sheep is concentrated in more remote districts, and the qualification which we made to our general rule in paragraph 144 is therefore of more importance. In fact, considerable killing of sheep does take place in or near the producing area, both in the south-west of England, in the north-west of England and in the south of Scotland. As we have already observed (paragraph 134), a detailed investigation into the most appropriate sites for slaughterhouses in the light of varying local conditions is necessary, and this would be one of the most important functions of the National Slaughterhouses' Board, the appointment of which we recommend later in this Report (paragraph 177).

148. We propose now to examine the situation which would arise in the important areas which immediately suggest themselves as proper places for the building of regional slaughterhouses. The eleven principal industrial areas in Great Britain have, together with their surrounding districts, a population of  $24\frac{3}{4}$  millions, or approximately 55 per cent. of the total population. A further  $7\frac{1}{2}$  million persons, or 17 per cent. of the total population, live in thirty-one districts, having populations of between just under 100,000 and rather over half a million. The remaining 28 per cent. of the population live in small towns and rural areas. In the following table (Table 15) certain particulars are given of the eleven principal industrial areas, from which it will be observed that centralisation has so far made most progress in Manchester, Birmingham, Liverpool and Glasgow. London has a low kill in proportion to its size on account of its high consumption of foreign meat, and of the importation of Irish and Scottish animals killed in Birkenhead, Aberdeen and elsewhere.



TABLE 15.

*Slaughtering facilities in the principal urban areas in Great Britain.*

Name of area. (1)	Population, in 1931, of areas of varying radius (in thousands).			Number of local government areas within 15-mile radius.		Number of municipal slaughter- houses within 15- mile radius. (7)	Number of slaughter- houses for which kill in 1929 is available. (8)	Number of animals of all kinds killed in 1929 in slaughterhouses enumerated in column (8) (in thousands). (9)	Total number of animals killed in 1929 in towns enumerated in column (1). (10)
	5-mile radius. (2)	10-mile radius. (3)	15-mile radius. (4)	County boroughs or large burghs. (5)	Other areas. (6)				
England and Wales—									
London ...	...	...	8,203 <sup>(1)</sup>	...	...	2	2	377	334
Manchester ..	1,158	1,897	2,438 <sup>(2)</sup>	6	69	5	4	588	536
Birmingham ...	1,168	1,656	2,067	6	35	2	2	486	418
Liverpool ...	1,210	1,510	1,821 <sup>(2)</sup>	7	29	8	5	485	422
Leeds and Bradford	...	977	1,827	6	89	14	13	343	{ Leeds ... 96 Bradford 92
Newcastle-on-Tyne	595	1,259	1,563	5	45	4	2	44	Nil.
Sheffield ...	604	915	1,378	4	41	5	3	164	109
Cardiff ...	...	629	1,075	3	29	6	5	196	125
Derby and Notting- ham ...	...	...	998	2	38	1	...	...	...
Blackburn ...	261	642	817	3	32	11	8	259	97
Scotland—									
Glasgow ...	1,188	1,617	1,797	9	30	12	10	568	464

<sup>(1)</sup> The population given for London is that of Greater London. Additional areas which, though beyond the 15-mile radius, may be included in London have a population of 650,000.

<sup>(2)</sup> The Wigan district, with a population of 157,000, lies just beyond Liverpool and Manchester, and might easily be included with either.



149. In order to secure an area of the most efficient size it is necessary that slaughterhouses in the above areas should serve all the surrounding country within ten to fifteen miles of the centre. The concentration of slaughter throughout such an area implies both the inclusion within one region of a large number of separate local authorities and the closing of a number of existing public slaughterhouses. For, in England and Wales, the right to license private and to build public slaughterhouses is at present vested in urban district councils and borough councils, the smallest urban administrative units in the hierarchy of local government. Consequently public slaughterhouses have been built in the past without adequate regard to the needs and facilities of other districts. The areas to be served by public slaughterhouses should in the future be defined without regard to the boundaries of local government areas, and should not be under the sole control of the particular local authority within whose area they happen to be situated.

(c) The need for monopoly.

150. It is conceivable that in future new public slaughterhouses may be built so much more efficiently than they are at present that they will, by the strength of their competition, drive butchers to close their private slaughterhouses and still need no assistance from the rates or from other public sources. If, however, this should prove impossible, two questions present themselves. Is it desirable to build public slaughterhouses in spite of the fact that they will need some form of public assistance, *e.g.*, the grant of monopoly or subsidy? And if so, what form shall this assistance take?

151. We have already given our grounds for believing (paragraph 116) that a centralised slaughterhouse is more efficient than a number of private slaughterhouses as a means of serving fairly compact areas. But it does not follow that the competition of the large efficient unit will necessarily drive the small and less efficient unit out of business. Such an inference neglects two important factors, the natural conservatism and strong bargaining position of the retail butcher, and the varying losses which each will incur in adapting his existing plant and buildings to other uses. Therefore, the recent history which suggests that even where a local authority is prepared to set up a slaughterhouse on what we believe to be correct lines, the possible saving is not great enough to allow a scale of charges which would persuade butchers voluntarily to close their private slaughterhouses is in no way inconsistent with our general conclusion as to the superior merit of public slaughterhouses.\* Conditions naturally vary between different centres. In the largest towns, *e.g.*, Liverpool and Manchester, where the wholesale trade is of con-

\* At Sheffield it was first suggested that the slaughterhouse should be constructed so as to be worked on principles similar to those in force at Adelaide. This proposal was not acceptable to the butchers, and the scheme had to be considerably modified, with the result that the present slaughterhouse cost much more, and is much larger than it need otherwise have been.



siderable importance, there are only a few private slaughterhouses. But we believe that in many districts it will not be possible to bring about centralisation unless a monopoly (or subsidy) is given.

152. If this is so, is it still desirable to persevere with a programme of centralisation? There are several reasons which can justify the adoption of a policy which (unless supplemented by a grant of some form of monopolistic powers) is likely to lead to loss.

153. In so far as the loss is due to an unreasonable attitude on the part of any interested persons it seems proper to override it. Retail butchers, controlling as they do the outlets for the products of the slaughterhouse, are in a position to make it successful or unsuccessful, as they choose. Many butchers attach an exaggerated value to the possession of a private slaughterhouse, partly as the outward symbol of an established position, partly as a potential source of compensation, and are, therefore, likely to obstruct the introduction of public slaughterhouses.

154. The loss to the undertaking may be balanced by gains to other parties. For example, we have already seen that the closing of private slaughterhouses will reduce the cost and improve the quality of meat inspection. We have also suggested that centralised slaughtering may lead to a simplification in the marketing of livestock and a consequent reduction in that important cost. These subsidiary gains must not be overlooked.

155. The desirability of an investment is not correctly measured by the possibility of making profits in the face of cut-throat competition. Let us suppose that all the private slaughterhouses in any district are owned by a single individual. In deciding whether or not to scrap all his small units and to build one large unit, the owner will balance against the interest and depreciation charges for which his new unit would be responsible the sum of his savings on working expenses (including therein any increase in the value of his by-products) and the annual rent which he would receive from his existing slaughterhouses in alternative uses. But in the same circumstances the publicly-owned slaughterhouse, competing with a number of private slaughterhouses, could not rely on making a profit. For, in order to induce existing butchers to close their private slaughterhouses, it would be necessary to reduce the price charged for slaughtering below its previous level. If all butchers had precisely the same costs of slaughtering, a single small reduction in the charge for slaughtering at the public slaughterhouse might induce them all to convert their slaughterhouses to alternative uses and buy meat from the public slaughterhouse. But since butchers have differing costs of production or cannot all convert their slaughterhouses with equal ease, such a reduction in the charges made by the public slaughterhouse might persuade only some of them to close down. Those intending to build the public slaughterhouse would then be faced with the following



dilemma. Either they must cut the charge for slaughtering still further and thus reduce their receipts, or they must be content to leave a number of butchers still operating independently and thus by reducing their turnover increase their costs per beast. In either case, they endanger the solvency of the scheme. This is the familiar difficulty encountered in schemes of "rationalisation." We believe that it cannot be neglected in this instance.

156. For these reasons we hold that there are districts where, though their erection is in the general interest, public slaughterhouses will not be in a position to operate profitably unless private slaughterhouses are compulsorily closed.

157. We therefore turn to the final point. In those districts where the erection of a public slaughterhouse is desirable, but dependent upon some external aid, shall that aid take the form of subsidies from the rates (which is now the practice in England) or the grant of a monopolistic position (which is now the practice in Scotland)? Several considerations point to the adoption of monopoly. In the first place we hold very strongly that it is undesirable that local or public funds should be burdened with the liabilities of enterprises which can be made self-supporting. Public slaughterhouses provide a service, and it is right that those who receive this service should pay its full cost. Again, if any scheme for more centralised slaughtering should meet with unreasonable opposition it would be desirable that those directing the scheme should have adequate powers in reserve. Of these, the first and most important would be the power to close private slaughterhouses compulsorily. A further argument in favour of the grant of monopoly is that this would greatly strengthen the financial position of the slaughterhouse and, therefore, its power to borrow cheaply. On the other side it may be argued that the compulsory closing of private slaughterhouses might involve a demand for compensation on the part of the butchers. But a butcher who has been forced out of business by the competition of a subsidised enterprise has in equity as good a claim for compensation as one whose business has been compulsorily closed. Where, therefore, some special form of assistance is required to enable a public slaughterhouse to be erected, this would be most satisfactorily afforded by the grant of monopolistic powers.

158. The advantages of uniformity throughout the country and the greater security for loans raised upon the revenues of slaughterhouses are sufficient reasons for extending the grant of a monopolistic position even to slaughterhouses in those districts (*e.g.*, Liverpool and Manchester) where competition from private slaughterhouses is at present unimportant.

#### (d) Methods of trading.

159. We have already expressed our conviction that central slaughterhouses "should be operated continuously under one manage-



ment" (paragraph 133). We there left undetermined the equally important question whether the cattle slaughtered should be the property of the authority owning and operating the slaughterhouse, or whether they should be the property of producers acting through a marketing organisation or the butchers or wholesalers on whose behalf the slaughterhouses performed the service of slaughtering. The latter alternative, under which wholesale and retail butchers retain the ownership of the beast while being slaughtered, has been adopted and, we believe, found satisfactory by several public slaughterhouses in Australia and New Zealand, and it is not uncommon for the large packing-houses of America to slaughter beasts on behalf of other firms in addition to the majority of animals which they slaughter on their own account. An illustration of the methods employed in this kind of organisation is afforded by the slaughterhouse operated by the Adelaide Meat Board. There the butcher buys his own cattle at the weekly cattle market. On the fall of the hammer the Meat Board's employees take charge of the beasts, brand them and deliver them to the lairage attached to the slaughterhouse. The beasts are slaughtered by the Board and delivered by it in its own vehicles according to instructions received from the butcher. A charge is made for slaughtering and a further charge for delivery. The Board takes as part toll the blood, the lungs, and the third stomach of large stock and the contents of the stomach and paunches of stock. Other offals, edible and inedible, including fats, remain the property of the butchers. Any of them not required by the latter are bought by the Board at agreed prices, and either resold in bulk or in some cases manufactured into further products, *e.g.*, tallow, dripping, bone, manure, &c. The Board has a monopoly of the service of slaughter and of the transport of meat.

160. There are, we believe, certain respects in which the Adelaide system falls short of perfection, and these are brought out in the discussion of the following questions. In the first place, would this system prevent the achievement of the internal economies in the operation of the slaughterhouse which may be expected to follow from the unified control of slaughtering? Secondly, would it interfere with the adjustment of the size of the slaughterhouse to the real needs of the market (an adjustment which should follow the successful elimination of the present irregularities in the rate of killing throughout the week)? Finally, would it facilitate or retard the improvements in marketing organisation, which should be one of the consequences of centralisation?

(i) *Internal economies.*

161. It is to be expected that many of the internal economies mentioned in paragraph 128 above would be achieved under the Adelaide system. The unnecessary sub-division of the organisation into small units is avoided, the organisation of the factory is intelligently directed, and opportunities of using labour-saving machinery where profitable are not neglected. On the other hand, there is some



danger that the collection and utilisation of by-products would not be so satisfactory as under a more completely unified system. For the identification of offals (which is part of the system as practised in Adelaide), though a relatively small matter in itself, interferes to some extent with the efficient operation of the slaughterhouse. This is of special importance, as little is needed to convert the profit from the collection of a number of the lesser by-products into a loss, while in the case of some of the main by-products, particularly fats, the necessity of maintaining the separate identity of the products obtained from different beasts interferes with the organised and immediate treatment which is essential for these products. We attach importance to this point, because in this country it is only in slaughterhouses such as those belonging to the co-operative societies, mentioned in paragraph 25 above, or to bacon-curing companies, where ownership of the animals and control of operations are in the same hands, that facilities are available for the proper treatment of offals. If, however, the list of offals retained in part payment by the slaughterhouse authority were extended to include, for example, hides or skins, fats, hair, bones and intestines, this particular trouble would be overcome. Such a solution, however, would be unlikely to commend itself to butchers, who might feel that they had suffered some injury if the variations in the yields of by-products from individual animals were not reflected in the prices received for them. Nor is it desirable in the case of hides, which vary in quality according to the degree of care taken by the producer to prevent the damage due to warble flies, that there should be no connection between the ultimate value and the price received by the individual supplier.

(ii) *The adjustment of capacity to demand.*

162. We have already called attention to the existing uneven distribution of killing throughout the week. We have pointed out how this leads both to casual employment among the workers and to the excessive overhead charges resulting from the over-extension of buildings and plant in order to meet the maximum demands upon them. If these faults in the present system are to be remedied it is necessary that the slaughterhouse should hold a reserve both of live animals and of meat, so that it may convert the one into the other at a uniform rate, in spite of day-to-day fluctuations in the rate at which stocks of live animals are replenished and stocks of meat are drawn upon. Under the Adelaide system the extent of these reserves is determined not by the slaughtering authority but by the unco-ordinated action of a number of independent butchers. The slaughterhouse authority has no guarantee that they will not be at times deficient and at times excessive. In fact, if the slaughterhouse is being used at full capacity, the stocks of meat necessary to secure each dealer against the risk of being unable to meet his normal requirements would in the aggregate be considerably larger than those required if there was only one reserve for the whole market. In view of the expense involved in carrying a



heavy stock of meat this must be considered a serious disadvantage in the Adelaide system. On the other hand, if in order to avoid the necessity of carrying heavy stocks of meat the slaughterhouse is built with a larger killing capacity than is warranted by the size of the market served, one of the main advantages of centralisation is lost.

163. In other cases where an irregular demand for a service exists (the provision of electric current provides an example), attempts are made to improve the distribution of demand through time by offering the service at a specially cheap rate during times of slack demand. If such differential charges applied to slaughtering, they would, if effective, make it possible to kill a larger number of beasts per week in a slaughterhouse of given size without the necessity of from time to time refusing to accept animals for slaughter on the ground that the slaughterhouse was already working to full capacity, and, consequently, without compelling butchers to hold stocks of meat against this contingency. It might be necessary, if such a policy were pursued, to provide that no extra charge was made for holding meat in cold chamber (paragraph 119) or lairage for any period up to, say, seven days, and that the charges for slaughtering on days of the week, which involved holding meat in store for some time, should be less than those on other days by an amount equal to the loss of value through loss of weight by evaporation or through loss of quality, if any.

(iii) *Improvements in marketing.*

164. We have already suggested (paragraph 123) that the ability to consign his animals directly to a slaughterhouse for sale would be of considerable benefit to the farmer. He would avoid thereby the charges incurred in passing them through a market or through the hands of a dealer or agent. But under the Adelaide system this advantage does not arise, for under it no new impartial body is set up to undertake the sale of the farmers' product. The latter must inevitably make use of the existing channels of trade. The adoption of this system without modification would make no contribution to the reorganisation of marketing.

165. On the other hand, the system has certain practical advantages. In the first place it would be more readily accepted by the meat trade in general. From the evidence that we have received it appears that a system which did not include some provision for butchers and wholesalers to bring their own beasts to the slaughterhouse and receive back the identical carcase would arouse keen hostility from those whose collaboration would be needed. The Adelaide system would cause only minor disturbances in the established channels of trade. Secondly, it avoids the unlimited speculative risks which, under a system of ordinary private trading, the slaughterhouse authority would have to bear. The existence of these risks is a much greater bar to the undertaking of trading operations by joint boards of local authorities whose losses would fall



ultimately upon the rates (and it is inevitable that such bodies should play an important part in the provision of slaughtering facilities) than it is in the case of private traders risking only their own capital.

166. The foregoing considerations suggest that there will be difficulties inherent in any scheme. On the one hand, the discussion of the technical factors contained in the preceding paragraphs leads to the conclusion that, if the fullest technical efficiency is to be achieved, the slaughterhouse authority should have not only a monopoly of the service of slaughtering in the district which it serves, but also a monopoly of wholesale trading in the animals slaughtered. On the other hand, such a complete monopoly would in all probability prove unworkable either because of the hostility of those whose collaboration would be required or because it would make unsuitable demands (financial or other) upon local authorities. We believe that an immediate solution should be sought along the following lines :—

(a) Where there exists some suitable body of private persons willing to provide the slaughtering facilities required for any region, this duty should be entrusted to it and, subject to appropriate safeguards in respect of economy of operation and rate of profit earned and subject also to the obligation to undertake the service of slaughtering for anyone requiring it to do so, it should be free to operate as a trading body, that is to say, to buy livestock outright and to sell meat. The kind of bodies which we anticipate might avail themselves of this privilege are :—

- (i) boards of producers in exporting areas set up under the Agricultural Marketing Act, 1930.
- (ii) public utility companies in which the shareholders might be the wholesale butchers at present serving an area, *e.g.*, the Aberdeen Fleshers' Incorporation.

(b) Where there is no suitable body of private persons willing to undertake this task it should be entrusted to a joint board of local authorities. Such boards should not be free to trade directly except in by-products, but should be obliged to accept animals for slaughter on behalf of other owners on a purely service basis. The joint boards should also be free to undertake the following limited form of trading activity, namely, receiving livestock from farmers, dealers or farmers' organisations, slaughtering the animals so received and disposing of the meat as wholesalers, returning to the original owner the value received less the cost of the services rendered, the value being calculated on the basis of the grade and weight of meat produced and the average price obtained for meat of that grade from animals received during any period found suitable for calculating an average. When receiving livestock for disposal in this way the



slaughtering authority should be empowered, subject to appropriate safeguards against condemnation of the carcase, to make an advance of part of the sum that it was anticipated would ultimately be received for an animal at the time it was brought to the slaughterhouse and should be free to vary this sum having regard to the state of supply and demand in the market in question.

This method of trading we shall refer to in the remainder of our report as "receiving animals for sale as meat upon a grade and deadweight basis."

167. In order to avoid the disadvantages of the Adelaide system which we have noticed, the slaughtering authority in case (b) above should be free to take over at a flat rate such offals, either edible or inedible, as experience may show to be desirable, and also to make such differentiation between slaughtering charges on different days of the week as would lead to the most even distribution of killing throughout the week.

168. Finally, the slaughtering authorities, both private and public, should be free to organise their own services of delivery along the most suitable lines, including therein the delivery of meat to sub-depots throughout the areas served.

169. It is clear that if the system of receiving animals for sale as meat upon a grade and deadweight basis is to be developed, the habit of buying meat on description will have to be carefully fostered. A necessary preliminary to this is a further extension of grading under the National Mark scheme. Hitherto this scheme has been applied only to beef. We understand that its extension to mutton is contemplated. We welcome this extension and trust that this policy will be energetically developed in the future.

#### **(e) The special case of bacon factories.**

170. Bacon factories present a rather special problem. Already some factories are organised upon the lines made familiar by American practice, although on a smaller scale, and there seems little reason to suppose that further centralisation would be desirable in so far as it affected the production of bacon alone. The question which concerns us is whether economies could be secured by the combination of bacon factories with slaughterhouses in which other animals are killed. The evidence we have received on this point is to the effect that so far as slaughterhouse equipment goes, there is little or no advantage in such combination. On the other hand, steam and cold storage, &c., would be required in both departments of a combined slaughterhouse, and a certain saving could thus be obtained. It is also possible to utilise labour that is under-employed in one department in the other. There is, therefore, no need to force the existing bacon factories into a national scheme designed to deal with rather different problems. Elasticity, however, in this, as in other directions, is very desirable,



and should there be obvious opportunities for amalgamation in any particular area, it should be possible to take advantage of them under the general scheme of which we speak.

## **VI.—METHOD OF ESTABLISHING A CENTRALISED SYSTEM.**

### **(a) Alternative methods.**

171. In the previous section we have outlined what we consider an improved form of slaughtering organisation. Under this scheme the slaughtering of animals would normally be concentrated in larger slaughterhouses owned and operated by a single authority. The actual size and situation of slaughterhouses would require to be determined in the light of local conditions. The areas served would not necessarily coincide with those of local authorities. The slaughterhouses would enjoy a monopolistic position within the area which they were designed to serve and would be one of two types, the first, owned by some kind of regulated private body, being free to trade upon its own account; the second, owned by joint boards of local authorities, being barred from the more speculative forms of trading, and operating primarily as service organisations. Slaughterhouses of both types, however, would be obliged to receive animals for slaughter on a service basis, if required.

172. We now address ourselves to the question, how is this change in organisation to be brought about? Broadly speaking, there are two possible answers. Either the Government may take steps, by advice, by demonstration or by the grant of financial inducements, to increase the willingness of existing local authorities to act in the way we desire, or it may set up an authority whose duty it shall be to carry out the policy recommended. It would be clearly inadequate for the Government to confine itself to giving advice to local authorities on this matter. It has, however, been suggested to us that the Government should undertake an experiment or series of experiments in central slaughtering, the success of which would so impress local authorities that they would immediately seek to emulate it. If it were true that centralisation involved the introduction of a new and difficult technique, it would be wise and proper to prove the possibilities of one, before embarking on further schemes. But the method of slaughtering which we are discussing is old-established and well understood, and there are experts who are competent to pronounce on any technical problem which may arise. The problem now is to adapt a known technique to a number of districts, each presenting individual features.

173. A further disadvantage of the method of demonstration is that the first experiment could only be undertaken in a most unfavourable environment. Success would largely depend upon the co-operation of the butchers in the selected area, but seeing that failure in the



critical scheme would be of particular significance, any opposition that might exist in the trade as a whole would be concentrated upon the experiment. The organisers of the experiment would have no assured outlet for their product, but would be completely dependent upon the local butchers. In this way the circumstances of the experiment would be very different from those of the "Carlisle experiment," which has achieved considerable success in the regulation of the drink trade.

174. Further ways in which the Government might increase the willingness of existing local authorities to centralise slaughtering would be (1) by legislation relating to England and Wales similar to that already operative in Scotland, whereby all private slaughterhouses were closed automatically whenever the local authorities opened a slaughterhouse of their own, (2) by the grant of public funds towards the construction of slaughterhouses in approved situations. The first of these suggestions is open to the objection that it does not provide for the required co-ordination among different local authorities. The second, quite apart from the undesirability at the present time of adding to the charges upon the Exchequer, invites an objection to the use of public funds as an inducement to local authorities to adopt a policy which should not ultimately place any financial burden upon them.

175. We are led by these considerations to reject this method of approach, and to recommend the adoption of the alternative method, namely, the establishment of an *ad hoc* body charged with the duty of reorganising the facilities for slaughter in Great Britain. The remainder of this section is devoted to the consideration of the detailed constitution of such a body.

#### (b) Constitution and functions of the organisation proposed.

176. It is clear that there must be some division of the proposed organisation into a national planning authority and a number of local operating bodies. After the consideration of several alternatives we have come to the conclusion that a scheme on the following lines would be found in practice to have the greatest balance of advantage upon its side.

177. As a first step there should be constituted a national planning authority, which we refer to throughout the remainder of this report as the National Slaughterhouses Board, charged with certain functions in relation to existing slaughterhouses, both municipal and private, and also with the duty of bringing a comprehensive national organisation into existence. It may or may not be desirable for this authority ultimately to be responsible to a Minister of the Crown, but we do not believe that it should form part of any existing public department. One reason for this is that there is no single department which is concerned in every aspect of the work of the new Authority. The Ministry of Health, the Ministry of Agriculture, and the corresponding Scottish Departments are all



concerned. Again, as the authority will be concerned with the development of a co-ordinated policy over a number of years, it is desirable that it shall not be subject to the influence of changes in political control. In the development of a national organisation the central authority should have powers to define regions for slaughtering, to prescribe that all slaughtering in the area should be carried on in selected slaughterhouses, which should be operated continuously under one management. The central authority should also have power to call into existence regional bodies to own and operate these slaughterhouses. The powers and duties which we believe it will be found necessary to confer upon the central authority to this end are given in detail below, but we wish here to draw attention to the need of giving it the power of raising money by public loan for the purpose of financing schemes when these are undertaken by joint bodies of local authorities. We have already explained (paragraph 157) the general principle on which charges are calculated should be such as to render each scheme self-supporting; but in order to increase the security offered to the investor, we consider that the interest and sinking fund of such loans should be ultimately secured by a charge upon the rates of the constituent local authorities. For, in view of the past financial record of municipal slaughterhouses, we doubt whether it would be possible to raise money for local authority slaughterhouses upon advantageous terms without the inducement afforded by some such collateral security in the background. A minor difficulty for which we have thought it necessary to suggest a tentative solution arises in connection with the purchase of a selected slaughterhouse from a local authority by a regional slaughtering authority. The slaughterhouse in question, by reason of the fact that it has been selected for continued operation, will have a higher value than other perhaps equally efficient slaughterhouses in the same region. It is reasonable to hold that the local authority whose slaughterhouse has been selected has no greater claim on this excess than has any other local authority in the region whose slaughterhouse has been closed. We have therefore suggested machinery whereby this surplus should be shared out among the different authorities in the region.

178. The regional bodies which would be brought into existence by the National Slaughterhouses Board we refer to as regional slaughtering authorities. They would be divided into two classes. The first class would include both boards set up under the Agricultural Marketing Act and public companies set up under special legislation subject to the provisions which generally apply to public utility concerns. Bodies of this class would be empowered to trade either in livestock or meat on their own account. They would work for their own profit, though their powers of making profit would have to be carefully supervised and limited, perhaps on the lines of gas undertakings. They would also themselves provide the capital necessary for the construction and operation of the selected slaughterhouse. We



anticipate that slaughterhouses of this class will operate mainly in exporting areas, though we do not wish to exclude the possibility of boards of this kind (for example, a combination of wholesale butchers) operating in centres of consumption. The second class of regional slaughtering authorities would be joint boards of local authorities\*. The local authorities represented on such boards would be either county council or county borough councils (in Scotland the larger burghs). The powers of authorities of this class to undertake trading operations would be limited to the power to receive animals for sale as meat on a grade and deadweight basis as defined in paragraph 166 (b) above. The capital for such boards would be provided by loans from the National Slaughterhouses Board and interest and sinking fund upon such loans would ultimately be secured upon the rates. These authorities would be non-profit making and would be under an obligation so to adjust their charges that over a period they showed neither profit nor loss. The National Slaughterhouses Board would be empowered, after full investigation of local conditions (*e.g.*, by a local public inquiry or other means), to compel authorities of this class to provide such slaughtering facilities as they might consider necessary.

179. Authorities of either type would be solely concerned with the administration of selected slaughterhouses in their regions. They would not be responsible either for the definition of their regions or for the selection of the slaughterhouses or the sites for new slaughterhouses to be operated in their region, as these functions would be reserved to the central authority. On the other hand, subject to certain obvious precautions and to certain obligations to provide information to the National Slaughterhouses Board, they would be free from interference from that body in the day-to-day management of the slaughterhouses under their charge.

180. The administrative expenses of the National Slaughterhouses Board would be met by a levy on the turnover of the regional slaughtering authorities of both types. We recognise that the National Slaughterhouses Board will have to incur some expenditure before this source of income is available to meet them. We therefore recommend that, in the early stages of the scheme, the Treasury should be empowered to make advances within a defined limit to the National Slaughterhouses Board in order to enable it to pay its necessary administrative expenses during that period. The regional slaughtering authorities would be under the obligation of making charges for their services which should be, such as might reasonably be expected to provide for their expenses of operation, their administrative charges, and the service on their loans. In order to ensure that these were adequately covered and no more, they would be compelled to submit

\* In certain cases, it might be found desirable to constitute a single local authority as the regional slaughtering authority and this possibility should be borne in mind whenever, later in the report, we refer to joint boards of local authorities.



their schedules of charges to the National Slaughterhouses Board for approval before putting them into operation.

181. The National Slaughterhouses Board would have no relations with local authorities in the operation of existing slaughterhouses (unless taken over as part of a scheme) beyond a general power of veto over any proposal to build a new slaughterhouse or to make substantial alterations to an existing slaughterhouse in parts of the country not covered by a regional scheme. This power of veto is clearly necessary if the National Slaughterhouses Board is to be able to keep the field clear for development along the lines it approves. It will, in addition, be empowered to collect certain statistics from existing local authorities.

182. The National Slaughterhouses Board would also have power to close private slaughterhouses in areas where proper provision for centralised slaughtering has been made. Private slaughterhouses so closed would be entitled to compensation on an approved scale, which we discuss later (paragraphs 203-210).

183. It would also be necessary to make new provisions as regards responsibility for the inspection of meat killed in public slaughterhouses. At present, this rests upon the council of the urban district or borough in which the slaughterhouse is situated. As under the proposed scheme a slaughterhouse killing for a number of important county boroughs might quite easily be situated in a relatively small urban district, this arrangement would be unsatisfactory, either as regards efficiency to the former or as regards expense to the latter. We therefore recommend that on the establishment of a region and of a regional slaughtering authority for it, the financial responsibility for the inspection of meat slaughtered should be transferred from the constituent local authorities to the regional slaughtering authority, though the actual duty of inspection would remain with the local government authority concerned.

### **(c) Recommendations.**

184. In the following paragraphs we give our recommendations in greater detail.

185. There should be set up a statutory non-profit-making body, consisting of a whole-time chairman and other members appointed by the Government, to be known as the National Slaughterhouses Board. The expenses of this body should be met by a levy on the turnover of the subordinate bodies described later, though in the initial period it would be necessary to make special provisions to cover them by means of advances from the Exchequer.

186. The National Slaughterhouses Board, in the transitional period, should have the power to prohibit the erection of new, or the alteration of existing, slaughterhouses by public authorities, except under licence from themselves.



187. The National Slaughterhouses Board should prepare regional schemes on one or other of the following bases :—

- (i) schemes for joint boards of local authorities, *i.e.*, schemes which the National Slaughterhouses Board would require a local authority\* or a joint board of local authorities to undertake, and for which it would itself provide finance.
- (ii) regional schemes undertaken by associations providing their own finance.

188. Each of such schemes would be the subject of Orders to be submitted to Parliament by an appropriate Minister.

- (i) *Schemes to be undertaken by joint boards of local authorities.*

189. An Order authorising a scheme to be undertaken by a joint board of local authorities would :—

- (a) define the region for the purpose of the scheme ;
- (b) fix an appointed day or days after which existing slaughterhouses owned by local authorities and private persons should be closed in that region ;
- (c) constitute a joint board of local authorities to act as a regional slaughtering authority to operate the slaughterhouse (or slaughterhouses) selected for the service of the region in question with the powers and duties described below.

190. The National Slaughterhouses Board should select an existing slaughterhouse or approve the site for a new slaughterhouse for the service of each region, as defined above, or should, where necessary, prepare plans for the building of new or the alteration of existing slaughterhouses with a view to their efficient operation. These plans would be communicated in due course to the joint board of local authorities as the regional slaughtering authority. If after a reasonable period the joint board of local authorities had not carried these plans into effect, the National Slaughterhouses Board should have power to do so itself, after having taken adequate steps to inform itself of local conditions.

191. The National Slaughterhouses Board should review and, if necessary, revise the scale of charges (see paragraph 192 (b) below) fixed by joint boards of local authorities to ensure that they were sufficient to cover expenses and at the same time not excessive. The National Slaughterhouses Board should also have powers to require the adoption of a standard form of accounts and the preparation of statistical material.

\* Throughout the discussion of schemes for joint boards of local authorities, it should be realised that such schemes might in certain cases include schemes applicable to areas administered by a single local authority only.



192. A joint board of local authorities constituted to act as a regional slaughtering authority should :—

- (a) be responsible for the day-to-day operation of the approved slaughterhouse, or slaughterhouses, in its region, such operation to be continuous and to be conducted by their own employees;
- (b) fix charges for the slaughter of animals in these slaughterhouses on such a scale that over a period the expenses and debt charges involved should be covered, but no profit over and above these should be sought;
- (c) be required to slaughter any animal sent to it for slaughter at the rates prescribed in (b) above;
- (d) be free (at its own discretion) to receive animals for sale as meat upon a grade and deadweight basis (paragraph 166 (b)), but should not be free to deal in livestock or meat in any other way;
- (e) be free to deal in, and process, edible and inedible slaughterhouse by-products;
- (f) undertake the delivery of meat from the slaughterhouse to the butcher's shop or to some intermediate depot and should include the costs of such delivery in its charges.

193. The finance necessary for the scheme should be found by the issue, by the National Slaughterhouses Board, of stock bearing fixed interest. From the receipts of such issues the National Slaughterhouses Board would make loans to joint boards of local authorities for the purpose of constructing and operating slaughterhouses and providing compensation where necessary to private slaughterhouses compulsorily closed. The joint boards of local authorities should meet the interest and amortisation charges on these loans from the receipts of the slaughterhouses under their control. If, however, there was a deficiency in the funds (including any accumulated reserves) available to meet these charges the joint boards of local authorities should make good such deficiency by issuing precepts upon the local authorities within the area in question.

194. The National Slaughterhouses Board should prepare, in consultation with the interests concerned, a financial scheme for each region, under which—

- (a) the property of local authorities previously used for the slaughter of animals and allied purposes and required for slaughtering under the regional scheme, should be transferred to the joint board of local authorities, which should pay to the National Slaughterhouses Board, for distribution under (c) below, the sum at which the slaughterhouse was valued as a going concern;
- (b) the property of local authorities at present used for the provision of slaughtering facilities but not required under this regional scheme should, subject to (d) below, be transferred



for the purpose of disposal to the National Slaughterhouses Board;

- (c) the funds arising from such disposal, together with the monies arising from the purchase of municipal property by the joint board of local authorities should be distributed by the National Slaughterhouses Board among the authorities concerned. This fund would, in fact, form a compensation fund for the benefit of local authorities;
- (d) any local authority, other than one whose slaughterhouse was taken over as a selected slaughterhouse, should be free to contract out of the scheme, and would then receive no share of the fund in question.

(ii) *Schemes to be undertaken by associations finding their own finance.*

195. The Order authorising a regional scheme under a private association would—

- (a) define a region for the purpose of the scheme;
- (b) fix an appointed day or days on which (i) all private slaughterhouses, (ii) all slaughterhouses belonging to local authorities within that region should be closed;
- (c) empower a defined association to undertake the provision of slaughtering facilities within that area;
- (d) empower the National Slaughterhouses Board to take over at a proper valuation the plants and buildings occupied by the association for the purpose of slaughtering in the event of inefficient or wasteful management, improper conduct, or bankruptcy on the part of the association and to annul the right to slaughter granted to the association in question;
- (e) lay down the requisite limitations to the rate of interest upon its capital which the association in question might earn and distribute;
- (f) lay down the minimum slaughtering facilities which such an association should provide.

196. The National Slaughterhouses Board should be obliged to review the scale of charges fixed by such regional slaughtering authorities, and to reduce them if it should appear that they were calculated to produce a revenue greater than that required to pay the standard rate of interest upon their capital, set out in the Order under which the regional body in question operates. The National Slaughterhouses Board should further have the right to require such an authority to make any improvement or addition to its plant and equipment as changes in the conditions of supply in the region covered by the scheme or technical progress might demand. The National Slaughterhouses Board should also have power to require the regional slaughtering



authorities to submit accounts in a standard form and to prepare statistical material.

197. Regional slaughtering authorities (other than joint boards of local authorities) should—

- (a) pay such compensation to private slaughterhouses closed within their region as is awarded;
- (b) provide the minimum slaughtering facilities required under the Order constituting them;
- (c) fix charges for slaughtering in such establishments, not greater than would produce the revenue required for payment of the standard rate of interest upon their capital allowed under the Order constituting them;
- (d) slaughter any animal brought to them for slaughter at price prescribed under (c) above.
- (e) be free to undertake such trading and speculative operations as they might desire, but should not be authorised to increase the charges under (c) above to meet deficiencies upon their trading operations.

198. Regional slaughtering authorities (other than joint boards of local authorities) should themselves provide the finance necessary for carrying out such schemes.

199. Regional slaughtering authorities should be responsible for the costs of the inspection of carcasses slaughtered within slaughterhouses under their control.

200. All private slaughterhouses should be liable to be closed without compensation at the end of a period of ten years from the coming into force of the Act establishing the National Slaughterhouses Board, compensation being paid only to private slaughterhouses closed before that date.

## VII.—PRIVATE SLAUGHTERHOUSES.

### (a) Meat inspection in private slaughterhouses in England and Wales.

201. Though it does not fall strictly within our terms of reference, we wish to record the fact that we have received a considerable volume of evidence to the effect that meat inspection in private slaughterhouses in England and Wales is not by any means satisfactory. In the first place, many carcasses are never inspected at all, for there is no provision that an inspector shall be present when an animal is killed. In the second place, in many districts, especially in agricultural districts, the quality of inspection is poor, because, as a measure of economy, the office of meat inspector is not infrequently combined with some other, perhaps more important post, the qualifications for which are very different. The not unnatural result of this lack of uniformity in the standards of inspection applied in different slaughterhouses is that



those animals which are recognised as being likely to be condemned in a public slaughterhouse are sent to one of the laxer private slaughterhouses. In this way the value of inspection in public slaughterhouses is greatly reduced, since those carcasses which require it most are never adequately subjected to it.

202. The expense of inspection in small scattered slaughterhouses in which killing may take place at any time is the fundamental cause of this state of affairs. The scheme which we have proposed overcomes these difficulties. But as an immediate step, it seems to us not unreasonable that the small slaughterhouse should be called upon to meet the cost of its own inspection in order that there may be a proper inducement to kill in places where and at times when the total cost to the community as a whole is least. The effectiveness of this arrangement would be considerably increased if the Ministry of Health were to establish uniform standards of meat inspection applicable throughout England and Wales after the model of those enforced by the Department of Health for Scotland.

**(b) Compensation to private slaughterhouses compulsorily closed.**

203. Turning to the question of compensating private slaughterhouses on being compulsorily closed, we find that there has been no uniformity of practice. In Scotland (paragraph 33 above) many private slaughterhouses have been closed in burghal areas and no compensation has been paid. In England and Wales, on the other hand, very few private slaughterhouses have actually been closed. Many local authorities have, however, taken power to close private slaughterhouses. Where such powers have been taken, the local authority has been placed under an obligation to pay compensation. The claim to compensation is based upon a number of considerations. Some of these we believe to be inadmissible; but they have been accepted in arbitration proceedings which have taken place on the closing of private slaughterhouses under various local acts. Any legislation therefore which may be passed admitting the claim of private slaughterhouses to compensation should clearly define the considerations upon which this is granted, and the principles upon which it should be assessed.

204. The following are the grounds upon which it has been urged that compensation should be paid:—

- (i) the loss of the value of the monopoly conferred by a licence, upon the revocation of the latter;
- (ii) the additional expenditure incurred by private butchers as the result of being compelled to use a public slaughterhouse;
- (iii) the reduction in the value of specialised plant, or buildings consequent upon the prohibition of their use for the purpose for which they were constructed.



205. In the following paragraphs we give briefly our reasons for rejecting the first two of these and accepting the third.

- (i) *The loss of the value of the monopoly conferred by a licence, upon the revocation of the latter.*

206. The compensation payable to the holder of a liquor licence upon its extinction is often quoted in support of the claim for the loss of the monopoly value of a licence to slaughter. There is, however, a real distinction between the two classes of licence. In both cases it has been necessary to licence premises in order that the licensing authority may insure that they are conducted in a way which is not offensive to public morals in one case, and to public health in the other. But in the case of premises licensed to sell liquor it has also been the policy of licensing authorities to reduce the number of licensed premises with a view to restraining the indulgence in a habit which Parliament has considered not in the best interests of the public. It has been from this policy of reduction that the special value of a liquor licence has arisen. In the case of licences to slaughter, however, the number of licensed premises has not been artificially restricted below that which the normal play of economic forces would bring about. Local authorities in considering applications for licences have usually had regard only to the suitability of the premises. It may therefore be assumed that any premises which are suitable for the purpose derive their value merely from the cost of erection and equipment and not from the special privilege of the licence. In our view, therefore, claims to compensation on this ground fail.

- (ii) *The additional expenditure incurred by private butchers as the result of being compelled to use a public slaughterhouse.*

207. In arbitration proceedings undertaken in Sheffield, under a local Act of Parliament, claims were made and apparently accepted by the arbitrator on the ground that the owners of the closed slaughterhouses would be forced to pay fees for the use of the public slaughterhouse, and that their annual profits would be diminished to the extent of such payments. Such a conclusion is patently false. Let it be assumed that no benefits are derived by the butcher from the service for which fees are paid. Then the position is exactly similar to that arising on the imposition of a tax upon the slaughter of animals. It is a commonplace that the ultimate incidence of such a tax is independent of the point at which it is levied. Some part is passed forward on to the consumer of meat, some part is passed back to the producer of cattle. We have no doubt that the butcher himself finally bears a very small part of it. But the foregoing assumption (upon which the claim to compensation rests) is itself false. For we have shown in the earlier part of this report



that in general the small butcher would actually benefit from the contemplated change. We therefore also reject this claim to compensation.

- (iii) *The reduction in the value of specialised plant, or buildings, consequent upon the prohibition of their use for the purpose for which they were constructed.*

208. In general, we accept the validity of claims to compensation upon the ground of the reduction in the value of specialised plant or buildings consequent upon the prohibition of their use for the purpose for which they were constructed. If, however, plant and buildings have been erected in the knowledge that their use may be prohibited at either a fixed or an uncertain date in the future, it must be assumed that the owner took the risk deliberately. The claim to compensation, therefore, fails.

209. This qualification is of importance in the present case. The claims of owners of registered slaughterhouses and of slaughterhouses holding a licence without limitation of time to be compensated under this head, are not disputed. It is different, however, in the case of owners of slaughterhouses having only a temporary licence. Where powers have been obtained under local acts to close private slaughterhouses it has been the practice of Parliament to provide for the payment of compensation only in respect of those which were either registered or the subject of a licence of unlimited duration. This practice may indeed have been based upon a mistaken analogy with the compensation granted to holders of liquor licences. But the fact that the distinction has been made may have given rise to an expectation that it will be continued strong enough to debar holders of a temporary licence granted after the passing of any such act from any claim to compensation. We suggest, therefore, that any owner of a temporarily licensed slaughterhouse making a claim for compensation should be under the obligation of showing that when the expenditure in respect of which the claim is made was entered into, he had a reasonable expectation that the licence would be indefinitely renewed.

- (iv) *The basis of compensation recommended.*

210. We have already recommended (paragraph 200) that all private slaughterhouses should be liable to be closed without compensation ten years after the passing of the Act setting up the National Slaughterhouses Board. For private slaughterhouses closed before that date, we recommend that compensation should be paid upon the following basis:—

- (1) the total compensation payable in respect of any premises closed should be the reduction in the value of plant and buildings below their replacement cost, less an appropriate allowance for depreciation, consequent upon the



prohibition of their use for the purpose for which they were constructed, regard being had to the fact that the right to use such plant and equipment would expire upon a date fixed in the Act;

- (2) such compensation should be paid only in respect of registered slaughterhouses, slaughterhouses licensed without limitation of time, and such slaughterhouses having only a temporary licence of which it could be shown that, at the time when the expenditure in respect of which the claim was made was entered into, there was a reasonable expectation that the licence would be indefinitely renewed.
- (3) compensation should be apportioned between the persons interested in the premises according to the relative value of their several interests.

## VIII.—SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS.

### (a) CONCLUSIONS.

211. We submit the following summary of our conclusions:—

#### *THE ORGANISATION IN GREAT BRITAIN OF THE TRADE IN ANIMALS FOR SLAUGHTER AND OF THE TRADE IN MEAT.*

(1) The meat supply of this country is divisible into three parts: (a) meat produced from home-finished animals; (b) meat produced from cattle finished overseas (for the most part in Ireland) but slaughtered in this country; and (c) meat which is imported into this country as such. In 1928–29 imported meat accounted for 47 per cent. of the beef and veal consumed in Great Britain, 50 per cent. of the mutton and lamb, and 58 per cent. of the pig meat. The total number of animals slaughtered in Great Britain in the year 1928–29 was 2,118,000 cattle, 1,097,000 calves, 11,083,000 sheep, and 4,566,000 pigs, giving a total of 18,864,000 animals. (Paragraphs 11–18.)

#### (a) *The marketing of animals for slaughter.*

(2) The buyers of the farmers' livestock are local butchers, agents for wholesale and retail butchers, independent dealers who buy and sell according to their view of the trend of the market, and dealer slaughtermen who trade principally in sheep and pigs. Cattle are generally moved alive to the ultimate point of consumption, though the trade in meat from Aberdeen and Birkenhead to London forms an important exception to this rule. Large numbers of sheep are killed in the producing areas. (Paragraphs 19–21.)



*(b) Slaughtering in England and Wales.*

(3) Slaughtering is conducted in England and Wales either in public or private slaughterhouses. The former are the property of the local authority of the area concerned. The latter, of which there are about 16,000, are of many types and vary greatly in efficiency, being usually the property of individual retail butchers. They must either (a) be registered, (b) hold a licence without limitation of time, or (c) hold a licence for a limited period, usually one year. The number of animals, excluding pigs killed for bacon, killed annually in private slaughterhouses is about 9,500,000 head.

(4) There are 115 public slaughterhouses in England and Wales. Most of the largest towns have already built one. But among the towns of under 100,000 inhabitants, those having no public slaughterhouses are in a majority. Some public slaughterhouses are very small, killing less than 5,000 animals of all kinds in a year.

(5) Though the municipality owns the building in which slaughtering is carried on, and is also responsible for certain essential services, such as cleaning, &c., it has no control over the operation of the undertaking. Private butchers kill as and when they choose and employ what labour they like. A so-called public slaughterhouse is nothing more than a collection of private slaughterhouses, set up by a local authority, largely because it renders meat inspection more effective. The revenue of a slaughterhouse is derived principally from the fees levied on the lairage and slaughtering of beasts.

(6) In 1929 some 3,600,000 head of animals were slaughtered in public slaughterhouses in England and Wales, *i.e.*, approximately 28 per cent. of the total kill in England and Wales. (Paragraphs 22-31.)

*(c) Slaughtering in Scotland.*

(7) In Scotland, public slaughterhouses are of much greater relative importance than in England. Of the 153 public slaughterhouses in Scotland, 129 are situated in burghs and 24 in counties. Nearly all burghs, even those with a population of under 5,000 persons, have a public slaughterhouse. The provision of the Burgh Police (Scotland) Act, 1892, that where any town council has established a slaughterhouse no other premises may be used for that purpose within the burgh, and that no compensation need be paid for the closing of private slaughterhouses, has been of great assistance to the Scottish local authorities. In the county areas where the above provisions do not apply slaughtering is still largely carried on in private slaughterhouses. Of these, there are 431 which are licensed. In addition to the slaughterhouses which mainly concern themselves with slaughtering for local consumption, there are, notably in Aberdeen, a certain number of slaughterhouses which are principally used for killing for the export trade to England. Over 90 per cent. of the home-killed meat consumed



in Scotland comes from public slaughterhouses, and 75 per cent. of the animals killed in Scotland are killed in public slaughterhouses. (Paragraphs 32-37.)

(d) *Concentration of killing during part of the week.*

(8) The killing in public slaughterhouses is distributed very unevenly over the week, owing to local peculiarities of demand. Butchers do not hold their meat long enough to even out the rate of killing because of (1) the lack of chilling accommodation, (2) the heavy cost of using chilling accommodation, if provided, and the danger that meat held in cold store may lose in value, (3) the Jewish rule which prevents the consumption of meat killed three or more days previously, (4) the desire, if the same labour is used, to slaughter when work in the shop is slack.

(9) In public slaughterhouses labour is provided by independent gangs of journeymen butchers. These gangs are, in fact, casual workers, but, being highly skilled, they largely avoid the risks of an overstocked labour market. There are two objections to this method of employment; first, it leads to an unnecessarily variable demand for labour; secondly, it calls into being an unnecessarily large reserve of labour to meet these variations. Though the majority are well paid, there are in this trade many men whose expectation of employment is uncertain and who are not in a position to earn a decent living. (Paragraphs 38-42.)

(e) *The wholesale trade and wholesale meat markets.*

(10) Wholesale trade is confined to the larger towns, but in these it is of growing importance. Its functions are (1) to supply the needs of those retail butchers who are not in a position to slaughter on their own account; and (2) to even out the varying demand of different retailers for different parts of the carcass. In the larger towns the municipal authorities have established wholesale meat markets. (Paragraphs 43 and 44.)

(f) *The treatment of by-products.*

(11) By-products fall into two classes. First, hides, skins, and fats, which are so valuable that almost all butchers make some effort to dispose of them. Secondly, other products such as blood, guts and bones, which are not always utilised, as the cost of collection and deterioration in quality due to improper treatment often render their utilisation unprofitable. (Paragraph 45.)

(i) *Hides.*

(12) There are in this country some 130 privately-owned markets, through which most home-produced hides are passed. Their functions are to collect, weigh, and class hides, and hold auctions or sales. The



number of markets in existence is too great for the needs of trade. Except in the larger public slaughterhouses, the standard of flaying in this country is very unsatisfactory. Some 40 per cent. of the available hides are classed as "seconds," merely on account of careless or inexperienced flaying. The value of hides is further depreciated by insufficient attention in other respects, for example, by failure to salt them adequately as soon as they are cool. (Paragraphs 46-49.)

(ii) *Skins.*

(13) Though some calf and sheep skins are handled by the markets which deal in hides, many are either bought directly by fell-mongers from butchers and wholesalers, or indirectly through local collectors. Cleanliness and care in the taking off and treatment of the skin is even more important than in the case of hides, and is, unfortunately, no more in evidence. (Paragraph 50.)

(iii) *Fats.*

(14) The production of fats from British slaughterhouses is deficient both in quality, quantity and uniformity. Fat is rarely treated at public slaughterhouses and the collection of fats from small slaughterhouses is expensive and unorganised. (Paragraph 51.)

(iv) *Other products, except glandular products.*

(15) In unfavourable circumstances the cost of collecting the less valuable by-products is prohibitive and the product is entirely wasted. For example, blood is not always utilised, even at public slaughterhouses. The efficient utilisation of by-products requires concentration of production and immediate treatment. In Great Britain, the conditions are such that the butcher owning a small private slaughterhouse receives little or nothing for them. In public slaughterhouses, though collection is rather cheaper, the position is not by any means satisfactory. (Paragraph 52.)

(v) *Glandular products.*

(16) The cost of utilising glandular products is prohibitive in Great Britain, although these are an important source of revenue to the larger slaughterhouses abroad. Considerable quantities of glands are imported regularly in a semi-manufactured condition, which could be obtained in this country if there were adequate facilities in our slaughterhouses. (Paragraph 53.)

(vi) *Municipal destructor plants.*

(17) Many local authorities take steps to recover valuable material from slaughterhouse waste. But a public slaughterhouse is not the only source of organic waste in a town. In small towns it is generally convenient to concentrate the treatment of all this material in one



plant situated near the destructor plant. In larger towns, however, the advantage of concentration disappears and the slaughterhouse should be equipped with its own plant. (Paragraph 54.)

(vii) *The provision of public slaughterhouses as a function of local authorities.*

(18) Local authorities have established slaughterhouses as a contribution to the improvement of public health. Private slaughterhouses are a danger to the public health, both because they may be insanitarily kept and because it is difficult and expensive to secure proper inspection of meat slaughtered in them. Another motive which has influenced local authorities in the erection of slaughterhouses has been the desire to establish a municipal meat market, which is generally a source of revenue to a municipality.

(19) Public slaughterhouses unattached to meat markets in England and Wales are, almost without exception, a burden on the rates, as, in order to attract butchers into the public slaughterhouse in the interests of public health, local authorities are forced to charge uneconomically low rates for the services rendered. In the year 1928-29 the balance of expenditure falling on the rates in the case of those public slaughterhouses which made separate returns to the Ministry of Health was £33,117, out of a total expenditure of £96,363. In Scotland, where private slaughterhouses are automatically closed in the burghs on the opening of a public slaughterhouse, the position is considerably more satisfactory. The balance of expenditure falling on the rates in the case of public slaughterhouses in Scotland was only £8,736, out of a total expenditure of £124,337. It will be observed that the percentage of the total expenses covered by receipts averages about 92 per cent., whereas in England and Wales the corresponding figure is approximately 67 per cent. (Paragraphs 55-59.)

### SLAUGHTERING PRACTICE ABROAD.

(a) *The continental system.*

(20) There is considerable similarity in the methods of organisation of slaughtering adopted by most countries on the continent of Europe. The following types of slaughterhouse may be distinguished :—

- (1) municipal slaughterhouses in which, though they are owned by the local authority, the actual operation of slaughter is carried out either by employees of wholesale or retail butchers, or by independent journeymen butchers working on behalf of the owners of the animals slaughtered.
- (2) small private slaughterhouses, which are generally only found in towns where there are no municipal slaughterhouses.



(3) export slaughterhouses, often co-operatively owned, which are of considerable importance, in districts exporting pig products to Great Britain.

(4) large private slaughterhouses producing for the home market. Slaughterhouses of this type are not common; all those brought to our attention are situated in Germany.

(21) Continental municipal slaughterhouses generally have a monopoly of slaughter in the area which they serve. In Europe, as in this country, they have been established on grounds of public health and of ease of inspection. Economic motives have played only a secondary part. (Paragraphs 60-82.)

(b) *The American packing-houses.*

(22) A "packing-house" is a large slaughtering unit operating for private profit, in which control of the operations of slaughter and ownership of the beasts slaughtered is in the hands of the owner of the building used. Packing-house methods are generally associated with a large daily output, though some of the economies connected with them can be obtained when operating on a moderate scale. The full economies of working cannot be achieved until the output has reached a figure of about 3,000 cattle a day. It is of even greater importance than large size that the plant should be operated as near as possible to its full capacity. In practice, the important meat-packing concerns seldom operate plants with an output of less than 1,000 head of cattle a day (with corresponding figures for sheep and pigs).

(23) The capacity of a plant is measured by the number of beds or winches which it contains. The number of men employed on the killing floor amounts to between 13 and 16 per bed. The labour employed is specialised to a very high degree. A modern packing-house is generally built on two floors, killing taking place upon the first floor. Its operations are so arranged that carcasses may be quickly and efficiently moved from stage to stage.

(24) All packing-houses are equipped to deal with by-products, though the extent to which any given plant undertakes the subsequent treatment of by-products depends upon its size. More than one class of animals may be dealt with in a single packing-house. The extent to which specialisation takes depends upon the volume of supplies passing through the centre.

(25) Packing-house methods are most developed in the United States, the Argentine and Brazil, though in all these countries other methods of slaughter still continue to be employed. (Paragraphs 83-103.)

(c) *Slaughtering methods in the Dominions.*

(26) In Canada slaughtering is largely carried on in packing-houses as in the United States. In Australia, where slaughtering is generally



undertaken by municipalities, public slaughterhouses are of two kinds : (1) those operating the pen system (similar to that in use in England) ; (2) those operating the collective system, under which the management controls all the operations of the slaughterhouse, including slaughtering. In New Zealand all towns with a population of 2,000 are obliged by law to have a central slaughterhouse where the animals are killed and dressed by the local authority. The practice in the Union of South Africa is rather similar. (Paragraphs 104-107.)

#### PACKING-HOUSE METHODS AND THEIR APPLICABILITY TO GREAT BRITAIN.

(27) The packing-house system affords three opportunities for economy: (1) The capital cost per head slaughtered is lower. (2) A large output provides opportunities for improved methods, leading to lower operating costs. (3) As the size of kill increases, it becomes possible to make special arrangements for the immediate treatment even of the less valuable by-products. (Paragraph 108.)

(a) *Comparison of slaughterhouses run on packing-house lines with small private slaughterhouses.*

(i) *Slaughtering costs.*

(28) Though the out-of-pocket expenses of killing a beast in his own private slaughterhouse are very low, the small butcher reduces his normal weekly expenses if he closes his slaughterhouse permanently. In addition, the butcher killing his own beast receives less for his by-products than he would do if he used a good public slaughterhouse of the type now in operation. The slaughtering costs in a small private slaughterhouse are not likely to be less than 15/- a beast if we include both the expenses of slaughter and losses in respect of by-products. The average cost of slaughter at a municipal slaughterhouse is approximately 13/- per beast. Even the present form of municipal slaughterhouse is less expensive than the private slaughterhouse. But we have to compare the latter not with a type of large slaughterhouse, which is open to many criticisms, but with a slaughterhouse built and operated on the most efficient lines. We have no doubt that the costs of slaughtering in a small private slaughterhouse are much greater than those in a large modern meat works. (Paragraphs 110-116.)

(ii) *Quality of meat produced.*

(29) The quality of meat produced in private slaughterhouses is likely to be slightly better than that produced in public slaughterhouses, though if meat were produced in the latter under proper factory methods the quality would be much improved. Packing-house methods would involve the holding of meat in cold chamber for several days. It has been suggested that in this event British meat



would sell for no higher price than imported meat. We do not anticipate that this would occur, partly because the quality of English meat depends upon other factors besides the negative one of not being chilled, partly because the above argument is based upon a confusion in the use of the word "chilled." There is no reason why home-killed meat held in cold chamber should be confused with the very different foreign chilled meat, unless it is in the butcher's interest to create this confusion.

(30) The further advantages which would follow from a policy of centralisation are:—

- (i) an improved market for the inferior parts of the carcase which are now sometimes difficult to dispose of;
- (ii) improved facilities for inspection and grading of carcasses; and
- (iii) the possibilities of improvements in marketing organisation, both before and after the time of slaughter.

(31) On the other hand, a policy of centralisation might result in an increase in costs of transport, though in some districts, especially in large industrial centres, there may be special circumstances which prevent this increase occurring. This factor would be relevant and important in determining the size of an area to be served by a slaughterhouse.

(32) After making all allowances for the objections summarised above, we are satisfied that there is a substantial balance of advantage in favour of centralised slaughtering, as compared with slaughtering in private slaughterhouses. This conclusion is subject to the qualification that there exist areas which, by reason of their sparse population, are best served by small slaughterhouses of the present type. (Paragraphs 117–126.)

(b) *Comparison of slaughterhouses run on factory lines with municipal slaughterhouses as now operated.*

(33) The disadvantages inherent in the divorce of ownership from operation in municipal slaughterhouses are as follows:—

- (1) Slaughtering is carried on with great irregularity and buildings have to be capable of dealing with a much greater pressure of work than would arise if the flow was evenly regulated.
- (2) The capital cost is increased by the sub-division of the organisation into a number of small units, which prevents the adoption of the economies of large-scale operation.
- (3) There is no central management to ensure the efficient use of labour and the orderly progress of the carcasses from one operation to the next.



- (4) The opportunities provided by a large output for using specialised labour or labour-saving machinery cannot be made use of.
- (5) By-products are not collected and utilised as efficiently as is possible under unified control and ownership.

(34) It cannot be said of municipal slaughterhouses that the quality of meat and edible offals is superior to that produced under packing-house methods. Indeed, we believe the opposite to be the case.

(35) We have not been able to discover any respect in which the existing system of municipal slaughterhouses is preferable to one which permits of united operation and control. On the other hand, we have received ample evidence of the wastefulness and inefficiency of the methods universally and unavoidably employed in slaughterhouses as they are now conducted. We have had explained to us the great advance in technique which has been made by the meat-packing industry in North and South America. And we believe that it is now necessary, in the interests of both the producer and the consumer in this country, to apply this technique to the special problems presented by slaughterhouses operated under public or municipal control. (Paragraphs 127-131.)

*Summary of preceding arguments.*

(36) There are, however, certain qualifications to our general approval of packing-house methods:—

- (i) It is doubtful whether the closing of private slaughterhouses in remote areas would ever be in the general interest on the account of the heavy increase in the cost of transport involved.
- (ii) A number of municipalities have recently built public slaughterhouses. Though they may not be of the best possible kind, it may be more economical for the present to use them as they are than to scrap them or to incur heavy expenditure on adapting them.

(37) Subject to the foregoing qualifications, we are of the opinion:—

- (i) that the small private slaughterhouse is not, at any rate in urban areas, the most efficient unit from the technical or economic point of view, and that it is desirable on these and other grounds that the slaughtering of animals for food should be concentrated for the purpose of supplying large centres of population.
- (ii) that the present form of municipal slaughterhouse, in which control of operations is divided among a number of independent butchers, does not secure the benefits of



centralisation; that, in future, municipal slaughterhouses should be operated continuously under one management so that they should be in a position to adopt, as far as possible, the technical economies associated with American packing-house methods. (Paragraphs 132-133.)

### THE LINES ALONG WHICH CENTRALISED SLAUGHTER- HOUSES SHOULD BE DEVELOPED.

#### (a) *The size and situation of centralised slaughterhouses.*

(38) In packing-houses the net operating costs per head decrease as the scale of operation increases. But, as the size of the area served increased, the cost of transport per head increases. The interaction of these two tendencies defines the area which may best be served by any slaughtering centre.

(39) The question whether slaughterhouses are best situated in centres of production or in centres of consumption is closely bound up with the consideration of size and of transport. It is not possible to form any definite conclusion as to the comparative costs of carrying meat and livestock upon the evidence of railway rates. The railway companies themselves prefer to carry livestock. For the expenses of terminal handling are not so heavy as for meat, and the type of rolling-stock required is not so expensive to construct. The effect of motor transport, however, may be to lessen, or even reverse, the present advantage which the consignor of livestock has over the consignor of meat. There is loss of weight as a result of transporting both meat and livestock; it appears that the latter is the more severe.

(40) On the assumption that there is no great difference in the cost of transporting meat and live animals, there are advantages in concentrating slaughtering in centres of consumption rather than of production. For within a given radius of a large town the annual consumption of livestock is greater than the production in an agricultural district with a similar radius. The transport cost per head added by concentrating supplies at the centre of either area are the same, but in the consuming centre the balancing advantage of operating on a large scale are greater.

(41) Should there be, however, a point through which a large number of animals must pass on their way to any consuming centre, it is desirable that the slaughterhouse should be located there, for it will then achieve all the advantages of size without the disadvantages of increased transport charges.

(42) The production of particular agricultural areas is much more subject to seasonal variation than is consumption in general. This affords a further argument against the location of slaughterhouses in certain producing areas.



(43) Other points to which attention must be paid are :—

- (i) the difficulty at present experienced in transporting edible offals over long distances.
- (ii) the different costs of construction and maintenance and of provision of lairage accommodation in town and country areas.

(44) Cattle are generally slaughtered in consuming centres; in view of the situation of producing districts this seems to us inevitable. The production of sheep is concentrated in more remote districts, and killing in producing areas is, consequently, in some instances desirable. A detailed investigation into the most appropriate sites for slaughterhouses in the light of varying local conditions is necessary.

(45) To secure an area of the most efficient size, slaughterhouses in the principal urban areas should serve all the country within 10 to 15 miles of the centre. Such a concentration implies both the inclusion within one region of a number of separate local authorities, and the closing of many existing public slaughterhouses. For public slaughterhouses have been built in the past without adequate regard to the needs and facilities of other districts. The areas to be served by public slaughterhouses should, in future, be defined without regard to the boundaries of local government areas. (Paragraphs 134-149.)

(b) *The need for monopoly.*

(46) A large efficient public slaughterhouse will not necessarily drive all small and inefficient private slaughterhouses out of business. It may, however, be desirable to build public slaughterhouses in spite of the fact that without some special assistance in the form of a grant of monopolistic powers or of a direct subsidy, they will not be self-supporting, for the following reasons :—

- (i) Many butchers attach an exaggerated value to the possession of a private slaughterhouse. Losses may be due to this unreasonable attitude.
- (ii) The losses of the undertaking may be balanced by gains to other parties, particularly through the improvement of inspection and marketing.
- (iii) The desirability of an investment is not correctly measured by the possibility of making profits in the face of cut-throat competition.

(47) Assistance, if necessary, should be afforded by the grant of monopolistic powers rather than of a subsidy, because—

- (i) It would strengthen the hand of local authorities in the face of any unreasonable opposition which might arise.
- (ii) It would allow the slaughterhouse to borrow capital more cheaply.



(48) The advantages of uniformity and of greater security for loans raised are sufficient reasons for extending the grant of monopolistic powers even to slaughterhouses in those districts where there is now little competition from private slaughterhouses. (Paragraphs 150-158.)

(c) *Methods of trading.*

(49) It is necessary to decide whether public slaughterhouses should operate as trading bodies, *i.e.*, own the beasts which they slaughter, or merely as service organisation. An example of the latter is afforded by the Adelaide Meat Board, which, though it never purchases cattle outright, has full charge of all animals slaughtered in the Adelaide district from the time when they are sold at the weekly cattle market to the time when the carcass is delivered at the retail butcher's shop. Though this system achieves many of the economies of the packing-house, it has the following disadvantages:—

- (i) The collection and utilisation of by-products would not be so satisfactory as under a more completely unified system. For the identification of offals interferes to some extent with the efficient operation of the slaughterhouse. This disadvantage might be diminished if the list of offals retained in part payment by the slaughterhouse were considerably extended.
- (ii) The Adelaide system would not achieve a perfect adjustment of the capacity of the slaughterhouse to the demand in the area which it serves, as the rate at which animals are brought to the slaughterhouse for killing would depend upon the unco-ordinated action of a number of independent butchers, and, consequently, the slaughterhouse would not always be fully employed. The distribution of demand might be improved by offering the service at a specially cheap rate during times of slack demand.
- (iii) There would be no improvement in the marketing of livestock as no new impartial body would be set up to undertake their sale for the farmer.

(50) The fullest technical efficiency could only be achieved in a slaughterhouse having not only a monopoly of the service of slaughtering but also a monopoly of the wholesale trade in the animals slaughtered. On the other hand, the Adelaide system has practical advantages. It would be more readily accepted by the meat trade in general, and it would avoid the unlimited speculative risks which, under a system of ordinary private trading, the slaughterhouse authority would have to bear. (Paragraphs 159-169.) (Our recommendations under this head are summarised in paragraph 212 (e) (iii).)

(d) *The special case of bacon factories.*

(51) It is doubtful whether economies could always be secured by the combination of bacon factories with slaughterhouses in which other



animals were killed. As, however, such combinations might in some instances be desirable, a general scheme should be sufficiently elastic to take advantage of them where necessary. (Paragraph 170.)

#### METHOD OF ESTABLISHING A CENTRALISED SYSTEM.

(52) It has been suggested to us that the Government, with a view to encouraging the reorganisation of the industry, should undertake an experiment or series of experiments in centralised slaughtering. We reject this suggestion on the grounds that—

- (i) Further experiment in technique would be of little value.
- (ii) Any experiment would necessarily be undertaken in a most unfavourable environment.

(53) Other steps which the Government might take would be:—

- (i) Legislation relating to England and Wales facilitating the closing of private slaughterhouses.
- (ii) Grants from public funds towards the construction of slaughterhouses in approved situations.

(54) Neither of these seem adequate to us. We favour rather the establishment of an *ad hoc* body charged with the duty of reorganising the facilities for slaughter. The functions of this body will be found in paragraph 211, where we summarise our principal recommendations. (Paragraphs 171–175.)

#### PRIVATE SLAUGHTERHOUSES.

(a) *Meat inspection in private slaughterhouses in England and Wales.*

(55) Meat inspection in private slaughterhouses in England and Wales is admittedly unsatisfactory. There is no uniformity in the standards of inspection or the rigour with which they are applied. Animals likely to be condemned in a public slaughterhouse are sent elsewhere. This greatly reduces the value of inspection. The expense of inspection in small scattered slaughterhouses is to blame. The owners should be called upon to meet the cost of inspecting meat killed in their slaughterhouses. The establishment of uniform standards of meat inspection would also be of advantage. (Paragraphs 201–202.)

(b) *Compensation.*

(56) There are precedents both for compensating and for not compensating private slaughterhouses compulsorily closed. The following are the grounds upon which it has been urged that compensation should be paid:—

- (i) The loss of the value of the monopoly conferred by a licence upon the revocation of the latter.
- (ii) The additional expenditure incurred by private butchers as the result of being compelled to use a public slaughterhouse.



- (iii) The reduction in the value of specialised plant or buildings consequent upon the prohibition of their use for the purpose for which they were constructed.

(57) We reject the first of these claims on the ground that, in fact, no monopoly can be shown to have existed, and the second on the ground that such expenditure, if it occurred, would be passed backwards on to the producer or forwards on to the consumer. Compensation on the third ground is reasonable, except in the case of slaughterhouses holding only a temporary licence, which have been built or equipped in circumstances which rendered their closing without compensation a recognised possibility. (Paragraphs 203-210.)

#### (b) RECOMMENDATIONS.

212. We summarise our recommendations as follows:—

(a) that there should be set up a statutory non-profit-making body, to be known as the National Slaughterhouses Board, which would have power to prohibit the erection of new, or alteration of existing, slaughterhouses by public authorities, and should prepare regional schemes on one or other of the following bases:—

- (i) schemes for joint boards of local authorities, for which the National Slaughterhouses Board would itself provide finance;
- (ii) regional schemes undertaken by associations providing their own finance. (Paragraphs 185-187.)

(b) that the schemes referred to in (a) above should be the subject of Orders to be submitted to Parliament by an appropriate Minister. (Paragraph 188.)

(A) *Schemes to be undertaken by joint boards of local authorities.*

(c) that an Order authorising a scheme to be undertaken by a joint board of local authorities should—

- (i) define a region for the purpose of the scheme;
- (ii) fix a day after which existing slaughterhouses in the region should be closed;
- (iii) constitute a joint board of local authorities to act as a regional slaughtering authority. (Paragraph 189.)



(d) that the National Slaughterhouses Board should select an existing slaughterhouse, or approve the site for a new slaughterhouse, for the service of each region, and should review the scale of charges proposed by the joint board to ensure that they were sufficient to cover expenses and at the same time were not excessive. (Paragraphs 190 and 191.)

(e) that a joint board of local authorities, constituted to act as a regional slaughtering authority, should—

- (i) be responsible for the day-to-day operation of the approved slaughterhouse ;
- (ii) fix charges for the slaughter of animals such that over a period no profit or loss should be sought, and should slaughter any animal sent to it for slaughter at the rate prescribed ;
- (iii) be free, at its own discretion, to receive animals for sale as meat upon a grade and deadweight basis, but not to deal in livestock or meat in any other way ;
- (iv) be free to trade in and process slaughterhouse by-products ;
- (v) undertake the delivery of meat to butchers' shops or to intermediate depots. (Paragraph 192.)

(f) that the National Slaughterhouses Board should issue stock bearing fixed interest to finance such schemes, and make loans to joint boards of local authorities for the purpose of constructing and operating slaughterhouses and providing compensation awarded to private slaughterhouses compulsorily closed; that the joint boards of local authorities should make good deficiencies in the funds available to meet charges upon such loans by issuing precepts upon local authorities within the region in question; and that, with a view to avoiding anomalies, the National Slaughterhouses Board should prepare a scheme for liquidation of existing property of local authorities in any region previously used for the slaughter of animals and allied purposes. (Paragraphs 193 and 194.)

(B) *Schemes to be undertaken by associations finding their own finance.*

(g) that associations finding their own finance should be either  
(1) boards of producers in exporting areas set up under the Agricultural



Marketing Act, 1930, or (2) public utility companies in which the shareholders might be the wholesale butchers at present serving any region. (Paragraph 166 (a).)

(h) that the Order authorising a scheme to be undertaken by an association of the type referred to in (g) above should—

- (i) define a region for the purpose of the scheme;
- (ii) fix a day after which other slaughterhouses in the region should be closed;
- (iii) empower a defined association to undertake slaughtering facilities within that region, subject to the right of the National Slaughterhouses Board to withdraw such powers in the event of inefficient or wasteful management, improper conduct, or bankruptcy;
- (iv) lay down limitations to the profits which such an association might earn;
- (v) lay down the minimum slaughtering facilities which it should provide. (Paragraph 195.)

(i) that the National Slaughterhouses Board should be obliged to review the scale of charges fixed by a Regional Slaughtering Authority, and to reduce them if it should appear that they were calculated to produce a revenue greater than that permitted under the Order, and should, further, have the right to require it to improve or add to its plant, if necessary. (Paragraph 196.)

(j) that the regional slaughtering authorities should—

- (i) pay compensation awarded to private slaughterhouses closed within their regions;
- (ii) provide the minimum slaughtering facilities required under the Orders constituting them;
- (iii) fix charges for slaughtering not greater than would produce the revenue permitted under the Order;
- (iv) slaughter any animals brought to them at the rates so prescribed;
- (v) be free to undertake such trading as they might desire. (Paragraph 197.)

(k) that regional slaughtering authorities should themselves provide the finance necessary for carrying out such schemes. (Paragraph 198.)



*Inspection.*

(l) that both joint boards of local authorities and associations finding their own finance should be responsible for the costs of inspecting meat in the slaughterhouses under their control. (Paragraph 199.)

*Closing of private slaughterhouses.*

(m) that all private slaughterhouses should be liable to be closed without compensation at the end of a period of 10 years from the coming into force of the Act establishing the National Slaughterhouses Board, compensation being paid only to private slaughterhouses closed before that date. (Paragraph 200.)

(n) Such compensation should be paid upon the following basis:—

- (i) The total compensation payable in respect of any premises closed should be the reduction in the value of plant and buildings below their replacement cost, less an appropriate allowance for depreciation, consequent upon the prohibition of their use for the purpose for which they were constructed, regard being had to the fact that the right to use such plant and equipment would expire upon a date fixed in the Act.
- (ii) Such compensation should be paid only in respect of registered slaughterhouses, slaughterhouses licensed without limitation of time, and such slaughterhouses having only a temporary licence, of which it could be shown that, at the time when the expenditure in respect of which the claim was made was entered into, there was a reasonable expectation that the licence would be indefinitely renewed.
- (iii) Compensation should be apportioned between the persons interested in the premises according to the relative value of their several interests. (Paragraph 203-210.)

(Signed) DE LA WARR (*Chairman*).  
 ERNEST R. DEBENHAM.  
 ANDREW GILZEAN.  
 J. HARRY JONES.  
 BASIL E. MAYHEW.

(Signed) FRANCIS HEMMING } *Joint Secretaries*  
 P. K. DEBENHAM } *to the Committee.*

2, Whitehall Gardens, S.W. 1,  
 July 15, 1932.



## APPENDIX 1.

## Evidence Received.

## (a) List of witnesses.

Witness.	Description of Witness.
Mr. A. W. Street, C.I.E., M.C. ...	Assistant Secretary, Markets Division, Ministry of Agriculture and Fisheries.
Major W. H. Warman ... ..	Marketing Investigator, Markets Division, Ministry of Agriculture and Fisheries.
Mr. J. N. Beckett ... ..	Assistant Secretary, Ministry of Health.
Mr. J. C. Dawes, O.B.E. ... ..	Public Cleansing and Salvage Inspector, Ministry of Health.
Mr. C. R. Leighton, O.B.E., M.D., F.R.S.E.	Medical Officer, Department of Health for Scotland.
Mr. A. Main, M.A., B.Sc. (Agr.) ...	Chief Inspector, Department of Agriculture for Scotland.
Mr. G. H. Collinge, O.B.E. ... ..	— —
Mr. H. G. Lawson Johnston ... ..	— —
Dr. E. C. Snow ... ..	Secretary, United Tanners' Federation, British Leather Manufacturers' Research Association, and Leather Producers' Association.
Mr. F. Whittingham, Chairman of the Cattle Markets' Committee in 1928 and 1929.	Representatives of the Cattle Markets' Committee of the Corporation of the City of London.
Mr. W. H. Key, Member of the Committee.	
Mr. J. R. Hayhurst, M.R.C.V.S., Superintendent and Chief Veterinary Inspector of the Metropolitan Cattle Market.	
Major H. F. Hughes, D.S.O., Present Chairman of the Committee.	
Mr. F. J. Pullan, Principal Clerk, Markets' Department.	Representatives of the Smithfield and Aldgate Carcase Butchers' Association, Limited.
Mr. P. Taylor, Chairman ... ..	
Mr. Gordon Pool ... ..	
Mr. H. Eastwood ... ..	Messrs. Hal Williams and Co., Architects, Consulting Engineers.
Mr. Hal Williams, M.I. Mech. E., M.I.E.E., M.I. Struct. E., accompanied by—	
Mr. A. G. Clausen, A.M.I. Mech. E.	
Mr. J. H. Hugon ... ..	Messrs. Hugon and Co., Ltd., Manchester.



Witness.	Description of Witness.
Mr. A. D. Harper, Hon. Treasurer ... Mr. A. Chadwick, Hon. Secretary ...	} The Northern Market Authorities Association.
Mr. A. E. Marsh ... ..	Managing Director, Messrs. Marsh and Baxter.
Dr. F. H. Carr, C.B.E., D.Sc., F.I.C., the British Drug Houses, Limited Mr. R. L. Anderson, Messrs. Boots' Pure Drug Company, Ltd.	} Representatives of the Association of British Chemical Manufacturers
Mr. R. Eastwood ... .. Mr. A. I. Eastwood ... ..	} Messrs. R. Eastwood and Sons.
Mr. A. C. Knight, President ... .. Mr. C. A. Coggan, Member of the Executive Council Mr. W. J. T. Blois, Secretary ... ..	} Representatives of the National Federation of Meat Traders' Associations.
Mr. P. J. Ross Taylor ... ..	Ex-President, National Farmers' Union of Scotland.
Mr. Jean Schmidt ... ..	Managing Director, Industrial Waste Eliminators, Limited.
Mr. P. Gallagher ... ..	Messrs. Gallagher Brothers, Limited.
Mr. Hugh Miller ... ..	Scottish Chamber of Agriculture.
Mr. L. MacQueen Douglas, F.R.S.E.	— —
Mr. Henry A. Wallace ... ..	Hon. Secretary, Association of Midland and Southern Market Authorities.
The Right Hon. A. V. Alexander, Secretary.	}
Mr. G. Walworth, Agricultural Organiser of the Co-operative Union, accompanied by—	} Representatives of the Parliamentary Committee of the Co-operative Congress.
Mr. R. A. Howson, Assistant Secretary.	}
Mr. H. Evans, Manchester ... .. Mr. W. T. Miseldene, London ... ..	} Representatives of the Journeymen Butchers' Federation of Great Britain.
Mr. T. McLellan, National Organiser and Technical Adviser.	}
Mr. R. Orchard, National Organiser of the Leather Trades.	} Representatives of the National Union of Distributive and Allied Workers.
Mr. W. Goldstein ... .. Mr. D. C. Messent ... ..	}
Mr. H. G. Padbury ... .. Mr. A. P. Twigg ... ..	} Representatives of the London Central Markets Tenants' Association.
Mr. L. Van Zwabenberg ... ..	}
Lieut.-Colonel The Right Hon. Sir Matthew Nathan, G.C.M.G. ...	Chairman, Committee on the Problems of Rationalisation of the Economic Advisory Council.
Mr. C. F. G. McCann ... ..	Trade Commissioner for South Australia.



## (b) List of institutions and persons from whom written evidence was received.

Aberdeen Fleshers' Incorporation.  
 Edinburgh Master Butchers' Association.  
 Glasgow United Fleshers' Society.  
 Mr. H. P. Henschien, Chicago, U.S.A.  
 Institute of Auctioneers and Appraisers in Scotland.  
 National Farmers' Union.  
 Messrs. Paines & Byrne, Limited.  
 Pharmaceutical Society of Great Britain.  
 Railway Clearing House.  
 Royal Society for the Prevention of Cruelty to Animals.  
 Scottish Agricultural Organisation Society.  
 Scottish Federation of Meat Traders' Associations.

## APPENDIX 2.

## Statistical notes.

TABLE 1.

*Numbers of livestock in England and Wales by counties, 1930.*

County.	Cattle.				Sheep.		Pigs.
	Cows.		Other cattle, 2 years and over.*				
	June 4.	Jan. 11.	June 4.	Jan. 11.	June 4.	Jan. 11.	June 4.
Bedford ...	10,818	11,470	8,715	8,350	58,368	38,010	24,762
Berkshire ...	24,509	26,090	6,295	6,440	74,275	57,730	18,360
Buckingham ...	28,839	30,680	16,689	12,600	155,243	103,310	24,325
Cambridge ...	7,989	8,560	3,963	6,230	64,203	48,630	37,963
Isle of Ely ...	5,773	6,090	4,449	6,390	7,723	5,090	34,690
Chester ...	123,437	123,820	8,622	7,040	91,113	77,560	69,827
Cornwall ...	76,629	75,460	30,262	27,650	308,127	194,250	119,947
Cumberland ...	49,203	51,190	25,867	20,370	641,625	676,910	12,587
Derby ...	72,763	75,210	15,849	14,780	126,884	85,720	25,709
Devon ...	103,395	103,150	37,582	34,740	866,880	597,700	106,268
Dorset ...	62,923	63,320	6,189	5,660	179,016	171,000	38,486
Durham ...	29,531	30,470	16,362	18,290	267,694	204,190	17,528
Essex ...	42,995	45,020	11,866	12,320	146,102	95,340	74,410
Gloucester ...	52,753	54,540	17,584	18,070	271,730	191,830	62,692
Hampshire ...	48,918	50,850	5,716	6,830	141,650	108,500	42,827
Isle of Wight ...	9,955	10,010	564	630	17,666	27,240	16,601
Hereford... ..	33,094	32,810	14,906	15,380	368,041	266,020	30,334
Hertford ...	17,845	18,760	6,061	6,490	66,462	45,740	24,624
Huntingdon ...	6,052	5,990	6,910	7,930	41,291	26,090	18,185
Kent ...	40,208	42,610	12,693	11,930	740,833	501,590	62,196
Lancaster ...	127,408	128,580	20,995	14,550	364,603	237,650	83,012
Leicester... ..	42,527	45,430	48,504	27,280	240,572	148,530	20,031
Lincoln—							
Parts of—							
Holland ...	8,182	8,750	8,163	8,790	17,815	10,680	33,905
Kesteven ...	15,020	16,250	12,961	14,620	163,620	129,480	26,403
Lindsey ...	36,512	40,920	28,454	27,170	406,548	317,840	67,726

\* Exclusive of bulls and heifers in calf.



County.	Cattle.						Pigs.
	Cows.		Other cattle, 2 years and over.*		Sheep.		
	June 4.	Jan. 11.	June 4.	Jan. 11.	June 4.	Jan. 11.	
Middlesex and London ...	5,763	6,220	1,552	1,160	8,669	5,040	15,789
Norfolk ...	41,431	43,310	30,964	55,940	258,659	237,270	128,068
Northampton ...	28,661	29,660	49,025	29,440	303,502	201,490	29,070
Soke of Peter- borough ...	1,814	2,020	1,375	1,840	14,823	12,230	3,335
Northumberland	30,345	30,990	64,804	51,690	1,175,686	776,040	9,918
Nottingham ...	27,531	29,650	20,257	17,930	129,210	95,770	32,792
Oxford ...	22,621	23,610	13,267	13,000	134,609	107,940	21,894
Rutland ...	3,162	3,390	7,781	5,720	62,679	43,740	3,646
Salop ...	90,434	88,750	27,658	27,460	479,976	369,490	78,189
Somerset ...	121,374	122,430	25,163	18,670	358,544	294,370	82,646
Stafford ...	93,992	94,920	14,650	13,620	171,342	125,350	35,697
Suffolk—							
East ...	21,555	22,130	6,734	7,040	94,005	59,170	102,146
West ...	8,331	8,520	3,062	4,230	85,587	55,960	47,019
Surrey ...	20,355	21,110	3,368	3,700	35,031	39,310	21,715
Sussex—							
East ...	37,148	38,730	9,470	7,860	155,342	134,940	19,480
West ...	23,889	24,980	5,247	5,660	100,162	96,110	14,903
Warwick ...	39,414	41,320	25,590	19,640	232,417	148,870	31,608
Westmoreland ...	23,407	23,650	8,656	7,280	435,337	320,940	4,044
Wiltshire ...	85,565	89,030	8,544	10,500	211,966	143,340	43,484
Worcester ...	25,404	26,300	11,532	9,890	146,376	100,160	41,748
York—							
East Riding ...	24,597	26,180	18,219	25,590	400,136	344,790	68,999
North Riding	52,443	53,240	33,798	33,580	726,991	521,080	64,907
West Riding...	116,103	114,050	44,598	37,530	664,305	428,470	109,804
WALES AND MONMOUTH.							
Anglesey ...	13,877	14,110	7,760	6,570	143,673	94,680	10,520
Brecon ...	14,825	14,450	3,637	2,750	497,920	345,500	6,427
Cardigan ...	24,385	23,770	4,563	4,420	305,716	235,400	19,349
Carmarthen ...	54,953	52,800	8,767	5,700	302,163	190,390	27,059
Carnarvon ...	19,308	19,480	3,610	5,420	297,605	237,180	10,477
Denbigh ...	26,624	27,450	5,826	5,580	458,644	328,570	24,708
Flint ...	20,880	21,050	3,143	2,630	130,602	90,790	15,223
Glamorgan ...	26,688	26,480	6,797	5,790	324,259	234,920	16,076
Merioneth ...	11,253	11,540	3,565	3,660	429,879	348,030	5,753
Monmouth ...	18,526	18,920	6,680	6,020	221,314	159,670	15,536
Montgomery ...	23,725	23,360	9,085	7,320	515,111	361,550	21,088
Pembroke ...	33,973	32,970	8,972	11,230	153,857	96,210	29,727
Radnor ...	10,515	10,300	4,463	3,310	321,662	236,710	4,005

\* Exclusive of bulls and heifers in calf.



TABLE 2.

*Density of livestock in England and Wales by counties, 1930.*

	Cattle per 100 acres of crops and grass.				Sheep per 100 acres of crops, grass and rough grazing.		Pigs per 100 acres of crops and grass.
	Cows.		Other cattle, 2 years and over.*				
	June 4.	Jan. 11.	June 4.	Jan. 11.	June 4.	Jan. 11.	June 4.
Bedford ...	4.4	4.6	3.5	3.4	23.1	15.0	10.0
Berkshire ...	7.6	8.1	1.9	2.0	21.2	16.5	5.7
Buckingham ...	7.8	8.3	4.5	3.4	40.9	27.2	6.6
Cambridge... ..	3.0	3.3	1.5	2.4	23.7	17.9	14.4
Isle of Ely ...	2.8	2.9	2.1	3.1	3.7	2.4	16.7
Chester ...	24.5	24.6	1.7	1.4	17.4	14.8	13.9
Cornwall ...	12.6	12.4	5.0	4.5	42.7	26.9	19.7
Cumberland ...	9.5	9.9	5.0	3.9	74.3	78.4	2.4
Derby ...	16.1	16.6	3.5	3.3	23.8	16.1	5.7
Devon ...	9.1	9.1	3.3	3.1	60.2	41.5	9.3
Dorset ...	14.8	14.9	1.5	1.3	36.5	34.9	9.1
Durham ...	7.5	7.8	4.2	4.7	50.8	38.8	4.5
Essex ...	5.9	6.2	1.6	1.7	19.2	12.6	10.2
Gloucester ...	8.4	8.7	2.8	2.9	41.7	29.4	10.0
Hampshire... ..	8.9	9.3	1.0	1.2	21.3	16.3	7.8
Isle of Wight ...	16.1	16.2	0.9	1.0	23.8	36.7	26.9
Hereford ...	7.6	7.5	3.4	3.5	79.2	57.2	7.0
Hertford ...	5.9	6.2	2.0	2.2	21.4	14.8	8.2
Huntingdon ...	3.0	3.0	3.5	4.0	20.3	12.8	9.1
Kent ...	6.0	6.4	1.9	1.8	105.2	71.2	9.3
Lancaster ...	17.8	17.9	2.9	2.0	42.8	27.9	11.6
Leicester ...	10.0	9.4	10.7	6.0	52.5	32.4	4.4
Lincoln—							
Parts of Holland	3.4	3.7	3.4	3.7	7.4	4.4	14.2
Parts of Kesteven	3.7	4.0	3.2	3.6	39.5	31.3	6.4
Parts of Lindsey	4.3	4.8	3.4	3.2	47.4	37.1	8.0
Middlesex and							
London ...	10.4	11.2	2.8	2.1	14.5	8.5	28.4
Norfolk ...	4.1	4.3	3.1	5.6	24.1	22.1	12.8
Northampton ...	5.7	5.9	9.7	5.8	59.8	39.7	5.8
Soke of Peterborough	4.3	4.8	3.2	4.3	34.0	28.1	7.8
Northumberland ...	4.7	4.8	9.9	7.9	100.2	66.1	1.5
Nottingham ...	6.5	7.0	4.8	4.3	30.1	22.3	7.8
Oxford ...	5.8	6.0	3.4	3.3	33.5	26.8	5.6
Rutland ...	3.6	3.8	8.8	6.5	70.5	49.2	4.1
Salop ...	13.0	12.7	4.0	3.9	63.9	49.2	11.2
Somerset ...	15.2	15.4	3.2	2.3	40.3	33.1	10.4
Stafford ...	17.0	17.1	2.6	2.5	29.6	21.7	6.4
Suffolk, East ...	4.9	5.1	1.5	1.6	20.3	12.8	23.4
Suffolk, West ...	2.8	2.9	1.0	1.4	26.9	17.6	16.0
Surrey ...	10.5	10.9	1.7	1.9	16.0	18.0	11.2

\* Exclusive of bulls and heifers in calf.



	Cattle per 100 acres of crops and grass.				Sheep per 100 acres of crops, grass and rough grazing.		Pigs per 100 acres of crops and grass.
	Cows.		Other cattle, 2 years and over.*				
	June 4.	Jan. 11.	June 4.	Jan. 11.	June 4.	Jan. 11.	June 4.
Sussex, East ...	11.7	12.2	3.0	2.5	42.2	36.7	6.2
Sussex, West ...	9.7	10.2	2.1	2.3	35.5	34.0	6.1
Warwick ...	8.3	8.7	5.4	4.1	48.2	30.8	6.7
Westmoreland ...	10.2	10.3	3.8	3.2	94.2	69.5	1.8
Wiltshire ...	14.0	14.5	1.4	1.7	28.4	19.2	7.1
Worcester ...	6.8	7.1	3.1	2.7	38.0	26.0	11.2
York—							
East Riding ...	3.7	4.0	2.8	3.9	59.4	51.2	10.4
North Riding ...	6.4	6.5	4.1	4.1	60.2	43.1	7.9
West Riding ...	10.9	10.7	4.2	3.5	48.2	31.1	10.3
WALES AND MONMOUTH.							
Anglesey ...	9.9	10.0	5.5	4.7	88.9	58.6	7.5
Brecon ...	8.6	8.4	2.1	1.6	107.3	74.4	3.7
Cardigan ...	10.1	9.9	1.9	1.8	73.3	56.5	8.0
Carmarthen ...	13.5	13.0	2.2	1.4	59.5	37.5	6.7
Carnarvon ...	12.3	12.4	2.3	3.5	90.4	72.1	6.7
Denbigh ...	10.6	10.9	2.3	2.2	119.0	85.4	9.9
Flint ...	17.2	17.4	2.6	2.2	95.7	66.5	12.6
Glamorgan ...	12.0	11.9	3.0	2.6	89.6	64.9	7.2
Merioneth ...	8.7	8.9	2.8	2.8	120.2	97.5	4.5
Monmouth ...	8.6	8.8	3.1	2.8	81.8	59.0	7.2
Montgomery ...	9.2	9.0	3.5	2.8	114.2	80.1	8.2
Pembroke ...	11.7	11.4	3.1	3.9	43.2	27.0	10.3
Radnor ...	6.8	6.7	2.9	2.1	113.6	83.6	2.6

\* Exclusive of bulls and heifers in calf.



TABLE 3.

*Numbers of livestock in Scotland by counties, June 4, 1930.*

County.	Cattle.		Sheep.	Pigs.
	Cows.	Other cattle, 2 years and above.*		
Aberdeen ... ..	40,146	44,016	377,920	18,308
Angus ... ..	10,714	19,706	209,393	6,947
Argyll ... ..	18,758	6,996	711,218	3,312
Ayr ... ..	48,450	9,324	394,804	8,822
Banff ... ..	11,494	6,206	103,066	5,406
Berwick ... ..	4,722	7,272	394,667	3,678
Bute ... ..	3,040	1,110	42,470	511
Caithness ... ..	6,516	1,552	195,638	1,615
Clackmannan ... ..	1,347	780	13,459	283
Dumbarton ... ..	6,273	1,362	68,838	944
Dumfries ... ..	21,240	9,319	573,032	8,114
East Lothian ... ..	2,772	7,151	166,300	2,974
Fife ... ..	11,807	13,808	147,274	6,235
Inverness ... ..	18,939	4,427	505,748	1,755
Kincardine ... ..	6,199	7,540	71,889	2,807
Kinross ... ..	1,413	1,255	35,990	548
Kircudbright ... ..	18,242	9,059	391,230	10,760
Lanark ... ..	33,432	7,492	240,573	5,920
Midlothian ... ..	8,129	4,040	192,114	13,062
Moray ... ..	6,375	4,278	51,336	4,258
Nairn... ..	2,085	697	14,572	658
Orkney ... ..	10,509	4,158	63,869	2,002
Peebles ... ..	2,016	1,161	211,844	760
Perth... ..	16,793	13,741	657,211	8,096
Renfrew ... ..	13,182	1,878	43,654	3,260
Ross and Cromarty	15,964	3,892	323,913	3,131
Roxburgh ... ..	5,665	6,762	587,054	2,945
Selkirk ... ..	1,209	442	193,169	344
Shetland ... ..	4,905	1,034	160,876	167
Stirling ... ..	10,381	6,412	122,175	2,064
Sutherland ... ..	4,196	592	218,977	468
West Lothian ... ..	4,705	2,605	24,699	1,533
Wigtown ... ..	26,058	6,695	139,579	11,582

\* Exclusive of bulls and heifers in calf.



TABLE 4.

*Density of livestock in Scotland by counties, June 4, 1930.*

County.	Cattle for 100 acres of crops and grass.		Sheep per 100 acres of crops and grass and rough grazing.	Pigs per 100 acres of crops and grass.
	Cows.	Other cattle, 2 years and above.*		
Aberdeen ... ..	6.5	7.1	46.3	2.9
Angus ... ..	4.4	8.1	47.8	2.9
Argyll ... ..	16.2	6.0	46.2	2.9
Ayr ... ..	15.9	3.1	61.6	2.9
Banff ... ..	7.4	4.0	44.3	3.4
Berwick ... ..	2.5	3.9	148.2	2.0
Bute ... ..	11.9	4.3	43.5	2.0
Caithness ... ..	6.3	1.5	58.4	1.6
Clackmannan ... ..	8.8	5.1	52.0	1.9
Dumbarton ... ..	13.9	3.0	52.7	2.1
Dumfries ... ..	8.8	3.9	89.8	3.4
East Lothian ... ..	2.6	6.6	109.1	2.7
Fife ... ..	5.0	5.8	57.2	2.6
Inverness ... ..	12.7	3.0	31.8	1.2
Kincardine ... ..	5.3	6.4	39.7	2.4
Kinross ... ..	4.4	3.9	78.2	1.7
Kircudbright ... ..	10.1	5.0	73.2	6.0
Lanark ... ..	14.0	3.1	52.2	2.5
Midlothian ... ..	7.0	3.5	99.0	11.2
Moray ... ..	6.6	4.4	26.3	4.4
Nairn ... ..	8.3	2.8	19.4	2.6
Orkney ... ..	9.8	3.9	35.9	1.9
Peebles ... ..	3.9	2.3	97.7	1.5
Perth ... ..	5.2	4.3	54.4	2.5
Renfrew ... ..	16.5	2.4	35.6	4.1
Ross and Cromarty ... ..	11.6	2.8	29.8	2.3
Roxburgh ... ..	3.2	3.9	148.7	1.7
Selkirk ... ..	4.0	1.5	112.9	1.1
Shetland ... ..	19.0	4.0	47.8	0.6
Stirling ... ..	9.4	5.8	47.3	1.9
Sutherland ... ..	13.6	1.9	22.5	1.5
West Lothian ... ..	8.7	4.8	40.9	2.8
Wigtown ... ..	16.9	4.3	49.4	7.5

\* Exclusive of bulls and heifers in calf.



TABLE 5.

*Numbers of animals killed in the principal public slaughterhouses in Great Britain.*

—	Year.	Beasts.	Sheep and lambs.	Calves.	Pigs.	Total.
Birmingham	1928	...	...	...	...	...
	1929	46,678	257,132	64,607	78,395	446,812
	1930	50,215	234,472	72,626	54,100	411,413
Blackburn	1928	9,725	75,591	2,012	7,499	94,827
	1929	10,195	77,055	1,943	7,444	96,637
	1930	9,650	66,227	1,372	6,752	84,001
Blackpool	1928	...	...	...	...	71,758
	1929	...	...	...	...	73,741
	1930	...	...	...	...	...
Bradford	1928	18,065	50,991	6,529	23,672	99,257
	1929	17,957	47,382	6,669	19,701	91,709
	1930	17,460	44,374	5,739	19,257	86,830
Burnley	1928	6,016	40,085	441	5,036	51,578
	1929	6,004	38,400	550	4,787	49,741
	1930	6,013	39,596	284	3,603	49,496
Cardiff	1928	...	...	...	...	123,296
	1929	...	...	...	...	...
	1930	...	...	...	...	...
Leeds	1928	21,291	64,960	8,891	2,769	97,911
	1929	21,576	62,381	9,521	2,860	96,338
	1930	24,951	63,582	10,580	3,510	102,623
Liverpool	1928	31,640	360,894	28,116	40,656	461,306
	1929	30,135	357,721	28,957	45,466	462,279
	1930	31,338	318,065	31,044	34,584	415,031
London (Islington)	1928	54,282	129,128	34,770	131,887	351,714†
	1929	58,526	130,664	37,635	104,567	333,786†
	1930	54,924	97,056	30,221	58,836	244,266†
Manchester	1928	65,386	442,180	5,518	18,584	531,668
	1929	68,510	442,850	5,343	18,803	535,506
	1930	73,244	392,167	5,472	15,259	486,142
Sheffield	1928	}	Opened in June 1929			
	1929					
	1930					
Swansea	1928	27,235	60,819	7,641	23,704	119,399
	1929	6,628	42,248	4,993	14,609	68,478
	1930	5,933	36,196	4,508	14,645	61,282
Wolverhampton	1928	6,021	31,381	4,109	13,188	54,699
	1929	Opened in 1929				67,972
	1930	11,000	34,200	3,100	17,600	65,900
Edinburgh	1928*	(approx.)	150,846	4,693	17,129	203,319
	1929*	30,651	148,837	4,776	16,066	199,399
	1930*	29,720	131,138	4,781	13,112	179,181
Glasgow	1928	30,150	344,672	7,402	38,799	466,610
	1929	75,737	329,334	6,537	33,399	445,244
	1930	75,974	303,408	6,510	27,476	410,726

\* Year ending May 15 of the year named.

† Including horses.



TABLE 6.  
*Charges at certain public slaughterhouses.*

1. Public slaughterhouse.	For use of public slaughterhouse, including use of public lairage for not exceeding X hours. (See column 12.)					For use of public lairage for each 24 hours or less period after the expiration of the first X hours. (See column 12.)					Notes.
	For every bull, ox, steer, heifer or cow.	For every pig.	For every calf.	For every sheep or lamb.	For every other animal.	For every bull, ox, steer, heifer or cow.	For every pig.	For every calf.	For every sheep or lamb.	For every other animal.	
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	12.
Barnstaple	1 6	1 0(a) 1 6(b) 2 6(c)	6	3	...	...	...	...	...	...	X = 24 hours. (a) not exceeding 80 lbs. (b) exceeding 80 lbs., but not exceeding 380 lbs. (c) exceeding 380 lbs. X = 48 hours. Double charges for slaugh- ter outside ordinary times.
Barrow-in- Furness	2 0	1 0	9	5	...	4	2	2	1	...	X = 96 hours. (d) and goats. X = 7 days. Double charge for slaugh- ter outside ordinary times. X = 48 hours.
Birkenhead	3 0	1 3	1 0	4(d)	...	2 0	3	6	2(d)	...	X = number of hours not specified.
Blackburn	1 0	6	6	3	...	4	1	1	1	...	
Blackpool...	1 0	8 sucking pigs 2 4	3	2	...	...	...	...	...	...	
Brighouse	1 0	4	6	3	...	...	...	...	...	...	



Brighton ...	1	9	1	0	6	3	6	3	2	2	$\frac{1}{2}$	3	X = 48.
			sucking pigs										
Burnley ...	...	1	0	6	6	3	1	0	...	...	...	...	X = number of hours not specified.
Burry Port ...	...	2	0	1	0	6	2	0	6	2	2	6	X = 24 hours. Provision made for rebate in respect of slaughtering where annual charge exceeds £20.
Bury (Lancs.) ...	...	2	3	9	6	3	...	...	3(e)	1½(e)	1(e)	...	X = two nights. (e) For every night after first two.
Carlisle ...	...	2	6	1	6	9	...	...	6	2	2	...	X = 36 hours for slaughtering and 48 hours for storing carcases.
Cheltenham ...	...	1	6	9(f)	9	5	...	...	1	0	1	...	X = 36 hours. (f) not exceeding 140 lbs. dead weight
			sucking pigs										(g) exceeding 140 lbs. dead weight
			1	2(g)	9	5							(h) when no hot water is supplied by Council a charge of 3d. is made for hot water for scalding calf or any part thereof.
Chester ...	...	2	6	1	0	4(i)	...	...	2	0	3	...	X = 48 hours. (i) and goats.
Colne ...	...	1	6	8	5	3	...	...	...	...	...	...	X = number of hours not specified.
Exeter ...	...	2	0	1	0(g)	4	...	...	4	2	1	...	X = 48 hours. (g) 14 score pounds or under carcase weight.
			2	6(k)	8								(k) exceeding 14 score pounds.



For use of public slaughterhouse, including use of public lairage for not exceeding X hours. (See column 12.)						For use of public lairage for each 24 hours or less period after the expiration of the first X hours. (See column 12.)						Notes.
1.	Public slaughterhouse.	2. For every bull, ox, steer, heifer or cow.	3. For every pig.	4. For every calf.	5. For every sheep or lamb.	6. For every other animal.	7. For every bull, ox, steer, heifer or cow.	8. For every pig.	9. For every calf.	10. For every sheep or lamb.	11. For every other animal.	
Fleetwood	...	s. d. 2 0	s. d. 1 0 sucking pigs 4½	s. d. 4½	s. d. 4½	s. d. ...	s. d. ...	s. d. ...	s. d. ...	s. d. ...	s. d. ...	12. X=48 hours.
Halifax	...	3 6 4 3(0)	1 0½ 1 3(0)	1 0 1 3(0)	9 10½(0)	1 6 2 3(0)	6	...	...	...	2	(l) charge for slaughter after usual hours. X=24 hours.
Hexham	...	2 0 2 6	9 1 6	7 1 0	4 6(m)	...	3	1	1	1	...	X=24 hours.
Huddersfield	...	3 6(n)	2 0(n) excluding sucking pigs	1 6(n)	9(m)	...	...	...	...	...	...	(m) and sucking pigs. (n) outside ordinary business hours. The charges for pigs when no hot water is used is 1/3 and 1/6.(n) X=24 hours. X=12 hours. X=24 hours. X=any period between 8 A.M. on Monday and 7 P.M. on Wednesday in any week. X=hours not specified.
Hythe	...	3 0	1 6	1 3	9	...	1	1	1	1	...	
Ilfracombe	...	2 0	1 6	1 0	6	...	2 0	6	6	6	...	
Ilkley	...	3 0	1 0	9	6	...	6	2	2	1	...	
Keighley	...	3 0	2 0	1 3	9	...	6	2	2	2	...	
Kendal	...	1 6	6	6	3	...	...	...	...	...	...	



Liverpool...	...	3 0	1 0	9	4	...	4	2	2	1	...	X = 24 hours.
Llanelli ...	...	2 6	1 6	1 0	6	...	4(o)	1(o)	2	1(o)	1(o)	X = 36 hours. (o) Sunday excluded from time computed.
London (City of)	1 6	6	4	6(p)	2	...	...	...	...	...	...	X = period not specified. (p) if head and feet plotted.
Lytham St. Annes	1 6	1 0	9	4½	4½	...	1 6(q)	3(q)	3(q)	3(q)	...	X = 12 hours. (q) for every 24 hours or part after first 36 hours.
Sheffield ...	...	5 6	2 0	1 6	1 0	5 0	1 0(r)	4(r)	4(r)	2(r)	...	(r) after 24 hours.
Skipton ...	...	2 0	1 0	9	4½	...	6(s)	2(s)	2(s)	1(s)	...	X = 12 hours. (s) for every 24 hours or part after first 48 hours.
Shrewsbury	...	2 0	1 0	8	3	...	6	2	2	2	...	X = 30 hours.
Southport	...	1 6	1 0	6	4	1 6	...	...	...	...	...	X = period not specified.
South Shields	...	1 3(t)	1 0(t)	6(t)	2(t)	...	3	1	1	1	...	X = 24 hours. (t) double charges for slaughtering outside normal hours.
Spennborough	...	2 3	1 0	9	4	...	3(u)	1(u)	1(u)	1(u)	...	X = hours not specified. (u) lairage per night.
Swansea ...	...	3 0	1 3	1 0	6	9(v)	6	2	2	2	...	X = 24 hours. (v) goat or kid.
West Hartlepool	2 0(w)	9(w)	9(w)	9(w)	5(w)	1 0(w)	4	3	3	2	6	X = 48 hours. (w) double charges for slaughtering between 4 P.M. and 8 P.M.
Weston-super-Mare	3 0	1 3	1 3	1 3	9	...	1 0	6	4	4	...	X = 24 hours.



For use of public slaughterhouse, including use of public lairage for not exceeding X hours. (See column 12.)						For use of public lairage for each 24 hours or less period after the expiration of the first X hours. (See column 12.)						Notes.
1.	2. For every bull, ox, steer, heifer or cow.	3. For every pig.	4. For every calf.	5. For every sheep or lamb.	6. For every other animal.	7. For every bull, ox, steer, heifer or cow.	8 For every pig.	9. For every calf.	10. For every sheep or lamb.	11. For every other animal.	12.	
Public slaughterhouse.												
1.												
Wolverhampton	s. d. 2 0(y)	s. d. 6(y) (excluding boars or brawns) not exceeding 100 lbs. 9(y) (ditto), but exceeding 100 lbs. 2 6(y) boars and brawns 9	s. d. 6(y)	s. d. 3(x)(y)	s. d. ...	s. d. 3(z)	s. d. 1(z)	s. d. 1(z)	s. d. 1(z)	s. d. 1(z)	(x) and goats. (y) These charges are exclusive of a lairage charge. (z) These are charges for the use of lairs for each 24 hours or part of 24 hours. There is also a charge of the same amounts for use of cooling room for each 24 hours or part thereof. X=up to expiration of first night.	
Worcester	1 6	not exceeding 12 score 1 6 exceeding 12 score	9	5	1 6	3	2	2	1	6		









